Remote Monitoring in Primary Care

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Authors: Mary France Jardiel, Project Lead &
Hannah Harniess, Deputy Chief Executive, Care City

CARE CITY

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1. **Purpose of this report**

To guide future development of UCLPartners' (UCLP) tools and training resources to support the Proactive Care Frameworks (the foundation of the NHSE/I Proactive Care @home programme) and use of remote monitoring, a short qualitative review was undertaken with several primary care staff. The aim was to understand the primary care wider workforce training and support needs to support patients to use remote monitoring devices.

A short qualitative review was undertaken with several primary care staff. This review used an online survey, focus groups and in-depth interviews to generate rich data from a variety of primary care staff working in four Integrated Care Systems (ICS): North East London (NEL), North Central London (NCL), Leicester, Leicestershire and Rutland (LLR), and Cambridgeshire and Peterborough.

This report presents the findings of this project with some recommendations for training content, structure, and design to support the development of the required resources under NHSE/I's Proactive care @home programme.

2. **Introduction**

2.1. **Background**

Digital technology is integrated into our lives. It offers the potential to transform how we deliver and receive health and care services and empower people to become more actively engaged and involved in their health and care. The COVID-19 pandemic has changed the ways in which primary care uses digital technology in delivery of care. For example, the rapid move to a 'digital first' approach at the beginning of the pandemic, shifted the default consultation mode to virtual over face-to-face, using both video and telephone consultations as well as communications via SMS or digital platforms. Patients who subsequently required a face-to-face assessment were offered this, within strict infection control guidelines.

This has presented significant opportunities along with some risks. For example, the movement to 'digital first' may create more difficulties for people living with long-term conditions in accessing primary healthcare services. However, the pandemic also created a significant opportunity to disrupt and improve pre-pandemic processes and foster a culture that both encourages and enables patients to take an active role in the management of their long-term condition(s) through the use of digital technology.

The use of remote monitoring technology (RMT) has become more common across the health service as a result of the restrictions of the pandemic. RMT can be defined as a subcategory of telehealth where patients are able to use digital technologies, such as mobile phones and mobile medical devices and technologies, to gather patient-generated health data (PGHD) outside of the traditional places where health and care services are usually delivered, such as at the comfort of their own home. PGHD, which includes common physiological data such as blood pressure, heart rate and other vital signs, are sent to healthcare professionals either through directly contacting patients or by accessing dedicated clinician digital dashboards that automate the process. These allow clinicians to make well-informed assessments of their health, and when necessary, provide treatment and recommendations. Remote monitoring allows patients to take the lead in managing and sharing their health data and having increased transparency on how this data is used to inform their care. One of the most widely implemented examples of RMT during the last

year has been the COVID-19 pulse oximetry at home (Oximetry @home) which enabled home monitoring for people with COVID-19 and earlier detection and intervention for those who developed more serious complications.

Successful use of 'digital first' relies on a workforce that is confident in using digital tools and remote monitoring technology. Despite the rapid uptake of several new technologies within primary care, there remains a gap in our knowledge about the level of support primary care professionals need to confidently support their patients in using RMTs. There has been much work on establishing the digital readiness of organisations and supporting the workforce with virtual triaging but there remains a gap in understanding what (if any) training needs exist around the use of RMT. An initial scoping exercise undertaken by UCLP suggested it was not clear what support was needed for the workforce in enabling effective use of RMT with patients.

2.2. Proactive Care Framework

UCLPartners' Proactive Care Frameworks prioritise patients at highest risk of deterioration with pathways that mobilise the wider workforce and provide tools and resources to optimise patient care including remote and self-care. The frameworks form the foundation of the Proactive Care @home programme which began in January 2021 with a pilot running across four emerging ICSs – NEL, NCL, LLR and Cheshire and Merseyside.

3. Learning Approach

3.1. Aims and Objectives

The aim of this work was to inform the development of training materials and other resources for the primary care workforce, with a particular focus on supporting primary care professionals to confidently support their patients in using RMTs. In particular, we wanted to explore some key questions which included:

- What are the unmet needs amongst primary care staff to feel confident in making sure that their patients use remote monitoring?
- What remote monitoring resources are they already using or are available?
- How would the staff want to be supported to meet those needs?

3.2. Methodology

Care City Innovation C.I.C, on behalf of UCLP (Proactive Care and CVD Prevention team), used a mixed methods approach to explore the experiences and training needs of primary care staff in using remote monitoring technology. Data was collected through a digital survey questionnaire (qualitative and quantitative responses) and qualitative learning conversations using semi-structured focus groups and interviews.

The digital survey questionnaire (Appendix 1) was informed by an initial scoping activity led by UCLP. This involved a preliminary informal literature research on staff training needs alongside informal conversations with individuals working in various primary care roles.

The survey was created and delivered using the SurveyMonkey online platform and was open for 25 days. The survey was promoted through Care City's existing primary care

networks in NEL and circulated through the AHSN network with a particular focus on stakeholders within the Proactive Care @Home programme pilot sites. In total, we received 20 responses from multiple primary care professionals. See Appendix 2 for the interim report containing in-depth results from the survey.

Initial survey findings were used to develop topic guides for two further focus groups and an in-depth interview. The purpose of the focus groups and interview was to gain a deeper understanding of the emerging themes from the workforce survey.

The aims of these sessions were as follows:

- To understand what the term 'remote monitoring' meant to healthcare professionals
- To explore the workforce's confidence in using digital tools
- To explore the key enablers and barriers to patients using RMT
- To identify what support primary care staff, need to support their patients in using RMT

Details about the focus group were circulated to primary care colleagues using various means. A direct invitation to participate in the focus group was available within the digital survey questionnaire and respondents were invited to share their contact details if they wished to be involved. Invitations to the focus groups were also circulated through partners across the four participating ICSs involved with the Proactive @home programme and the public was also made aware of the opportunity to get involved through social media.

The focus groups were delivered online via Microsoft Teams and lasted for 60 minutes. In total, we had attendance from a range of professions including clinical pharmacists, nurses, GP, social prescriber, and care coordinator across four ICSs. To anchor our conversations and assist with idea generation, we did an activity-based exercise in the form of a case study analysis. The group was tasked with identifying enablers and barriers to successful implementation of a remote monitoring device and to identify resources needed to overcome challenges and support best practice.

To further triangulate the data, three semi-structured interviews were undertaken following the focus groups and building on emerging themes from both the focus group and survey data. The interviews used the focus group topic guide, with space for exploration of key issues as they emerged. See Appendix 3 for the focus group and interview topic guide.

3.3. Challenges and Limitations

Primary care professionals were the main target audience for this survey. Thus, the responses generated from this project are limited to their perspective and it is important to take this into account especially when reading about information related to patient experience. Additionally, due to the small number of respondents, limitations to this project include higher variability in responses, lack of breadth of experience/background in using RMTs, and voluntary response bias.

4. Analysis

Thematic analysis is a useful tool for uncovering meaningful themes from qualitative data. Thematic analysis was used to analyse written responses from the survey data as well as data generated through the focus groups and subsequent interviews. Detailed notes were taken throughout the focus group, including verbatim quotes (depicted in purple text in the next section), and participants consented to both focus groups and interviews being recorded to facilitate further scrutiny and analysis of the data. Multiple people within the Care City Innovation C.I.C. team were involved in the analysis of the data to support the robustness of these findings.

5. Findings

Data generated throughout the project unearthed a number of interesting and valuable themes which coalesced around five broader themes:
- Workforce experience of using RMT
- Barriers to use of RMT
- Patient support and training
- Training and development
- Implementation science and skills development

The five themes are described below, illustrated with direct and unedited quotes from survey, focus group and interview data. See Appendix 4 for more supporting statements that supplement the findings below.

5.1. Workforce experience in using RMT

Overall, data from the focus groups and surveys revealed a varied understanding amongst participants of what RMT is and their confidence in using it in their practice. For some, it had transformed their practice whilst others felt they still had a significant amount of learning to reach that point. In particular, survey responses provided some interesting insights into the experience of respondents and their understanding of RMT. More than 60% of primary care survey respondents stated that they use or have used RMT in their workplace. Of those who have used RMT, there was an average self-confidence rating of 64%. The Likert scale below visualises the varied confidence levels between professions, although it is hard to extrapolate from this given the small numbers of participants.
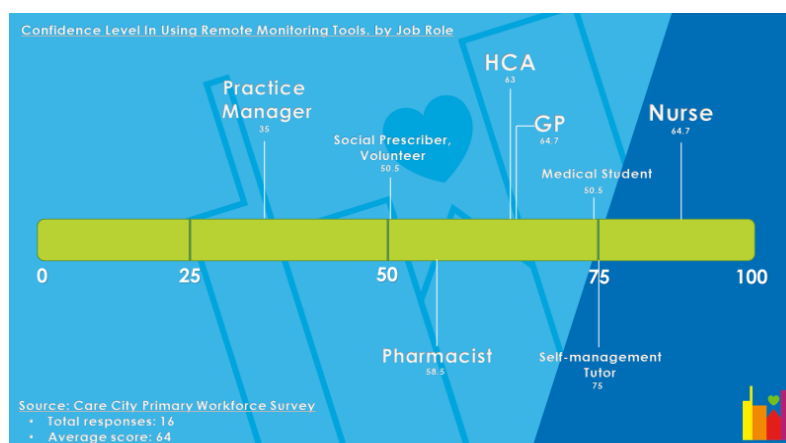
Survey respondents also recorded a wide range of views on what RMT meant, ranging from primary care digital platforms (e.g. eConsult, AccuRx, AirMid) whilst others referred to web resources and tools. These are depicted in the word cloud below, which visualises the most common responses to the question about what remote monitoring tools or technology respondents were using.

It was interesting that the use of SMS arose throughout conversations about RMT. Whilst not necessarily an RMT, it has played an increasing role in supporting asynchronous consultations with patients, saving both the patient and health professional's time, and enabling more efficient communications rather than a virtual or face to face appointment.

"Use of communication tools have exploded, texting as a digital communication and providing asynchronous communication, with interoperability with primary care systems is crucial and has made a huge difference to providing and receiving information from patients."

In addition to exploring the types of RMTs used in primary care, we were also interested in exploring how these tools changed the way primary care professionals work. Overall, staff reported that RMT tools provided better user experience for both patients and the workforce. However, some respondents shared that some systems and platforms are still programmed to be complex and require a lot of user input. A summary of their reflections is found below.

Improved patient experience

- Empowers patients to take control of their condition and treatment
- Provides patients with more information to allow more informed decisions about their health and care
- Easier for patients
- Quicker response rate from clinicians
- Reduced unnecessary visits to healthcare provider and thus reduced risk of infection
- Allows patients to provide their input prior to consultation

Better primary care staff experience

- More efficient transfer of information from patient to clinician
- More robust data to make clinical decisions
- Allows staff to undertake medication checks without having to bring people in for assessments
- Puts self-management at the forefront of patients minds and empower them to take control of their condition and treatment
- Some systems and platforms are complex and have long forms to fill in details

Survey respondents also described what would make them feel more confident in using RMT. The word cloud below visualises their responses, with staff training and mentoring being the most frequent statement across the group, and something that will be explored further later in this report. Patient education is also another popular response, an issue which also merits further discussion.

Focus groups and interviews were used to explore some of these issues at greater depth. For example, discussion around the meaning and definition of RMT during focus groups was more aligned to current understanding of RMT as a tool used to obtain PGHD outside of clinical settings. Blood pressure kits, pulse oximetry and digital tools such as Kardia Mobile™ were mentioned as examples of RMTs during these sessions.

Discussions also revealed that the confidence in using digital tools can also be linked to the extent of exposure one has with using technology and the level of support they receive in the workplace. Certainly, the pandemic has provided people with the opportunity to be more in tune with using digital technology, training themselves on how to use digital tools remotely and learning from this hands-on experience.

Focus group respondents also explained that staff who were more exposed to technology during their clinical training generally felt more confident in using digital technology and remote monitoring tools. The importance of peer-to-peer learning was also reinforced during the focus groups, where participants noted that there would always be a peer or colleague who is able to teach and support those that are less confident in using digital tools and build their confidence overtime.

"Even before things moved more digitally in primary care, most of my colleagues were quite confident with IT. As a generation that has grown up [using digital technology], we are quite lucky in a sense that these are not new skills to us."

"You're never using devices alone, there is always a member of the team who will understand [the technology] who can give you some help and get you up to speed, so training on the staff side is less of a problem."

As well as their own experience, we asked participants to describe some of the most common feedback they had received from their patients when it comes to using remote monitoring tools. As depicted in the word cloud below, most healthcare professionals report perceiving that their patients find the use of RMT as positive, also using the terms 'helpful' and 'convenient' to describe their patients' experience. However, others described challenges around access, inclusion, and the availability of technology for parts of their local population. These are discussed in more detail below.

5.2. Barriers to the use of RMT

Whilst there was significant positivity amongst respondents about the use of RMT within primary care, they also frequently described several barriers to effective uptake. These included:

- Digital Exclusion
- Accessibility
- Affordability
- Sustainability

Although these are not directly related to training and development - these barriers (both perceived and real) can influence staff engagement with and benefit from RMT-related training and learning tools and resources.

Digital exclusion - Data poverty and digital literacy

Although much of society is embracing the use of digital technology and monitoring in managing our own health, the pandemic has also deepened the digital divide. A recent report from The Good Things Foundation (2021) demonstrates how old age, low income and low education remain key predictors of digital access. Digital exclusion is a multifaceted challenge, which can be exacerbated by multiple factors such as data poverty and inadequate digital literacy. Data poverty, both in terms of accessing digital infrastructures (mobile phones, computers) and the costs attached to having internet connectivity, presents a key barrier to RMT uptake, especially in the most deprived areas. In a post-pandemic world, the implications of being excluded from digital tools and resources are much more significant and therefore it was unsurprising that concerns about digital exclusion were frequently described within focus groups as a significant barrier to effective use of RMT.

"We also need to think about those who might need some hand-holding to access and who could be digitally excluded. I particularly worry about sectioning out [different] patient groups because of [their ability to access] remote monitoring."

Participants felt that digital literacy and low digital confidence were barriers to patients using RMTs and that people with good digital literacy were far more likely to report a positive experience in using digital technology.

"The people that are computer literate seem to like the systems but those that are computer illiterate do not access them."

There was a belief that due to inequalities and exclusion faced by some people, this could lead to an exacerbation of inequalities.

"[There is] risk of creating a two-tiered service for those who have or don't have the tech."

However, participants also recognised that through enabling channel shift for those patients able to use remote monitoring effectively, this should release more time to invest in people who needed face to face support.

"It's the 80/20 rule - The majority [of people] will have access [and use RMT] which means there is capacity for the minority that don't or can't use it."

Accessibility

Nevertheless, throughout the project, participants generally described a shift within their population to becoming "more digital", whether this was through skills development or increased support from family or social networks. However, it was also recognised by many participants that accessibility of digital tools is often suboptimal, with many participants agreeing with a GP who told us; *"We need to have training/consultation in different community languages. Language is [a] huge barrier to taking up remote monitoring"*

Indeed, England is home to an estimated 56 million people (Office for National Statistics, 2021) with at least 89 languages spoken across the country (Office for National Statistics, 2013). For such a diverse population, the language barrier remains a challenge to overcome when it comes to digital uptake in the health and social care sector.

Many patients were able to overcome this challenge with support from friends and families, but some participants felt that this also raises issues around information governance which must be discussed and addressed.

This clearly unearthed some complex issues about responsibility and capacity which are beyond the scope of this report, but worthy of further exploration and consideration within future training content.

"...interaction with families helps, neighbours and friends. Can address some of the exclusion elements. But this also builds lots of rhetoric about 'care' passing responsibility to other family members can be a complex conversation."

Sustainability

For many of the respondents, some of their hesitance to take up remote monitoring tools and training opportunities related to the fact that they perceived many digital programmes to be transient and short-lived.

"We have so many pilots and short-term projects. We're tired and want to do the best for our patients. If we're going to invest time [in implementing and using digital tools] we want to know that the tool or tech is going to be around long enough to meaningfully make a difference."

The majority of participants recognised the potential of technology to improve delivery of care. However, this enthusiasm was often tempered by concerns that the effort of implementing new technologies, even with demonstrable success, is often not rewarded with longer-term funding or sustainable commissioning plans. At a time when there are so many pressures on primary care staff, if they are going to invest time learning and training, they understandably want to ensure that this will be valuable in the long run.

"Up-front investment to learn and get these things off the ground can be significant. Too many people have pilot fatigue. Huge strain on primary care workforce time"

One GP described the challenges with commissioning cycles and embedding new digital ways of working. They pointed to challenges with procurement and suggested that urgent changes need to happen within the commissioning cycle to support sustainable innovation projects.

Affordability

Affordability was a further theme which emerged from the data. This is closely linked to the issues described around sustainability and accessibility and related to affordability from the patient and system perspective.

"...funding is a major issue. Tools are often subscription based - needing upfront capital, which provides a significant barrier which prevents roll out of some digital tools, especially from a software perspective."

"Costs, from a patient perspective, are really important. Many communities can't afford the tech unless we provide it. Then [there are] all sorts of complexities about tech hire and issues. Creates issues over who can access and who can't."

5.3. Patient Support and Training Needs

A key theme which emerged across this project was the fact that unless adequate technical support and resources are provided for patients alongside the remote monitoring implementation this can create unsustainable work for primary care staff. Staff told us; *"to be honest, there is less need to train staff than patients".* The reasons for this were two-fold. Firstly, participants described how low digital confidence in patients often translates into increased demands on primary care staff.

"Again - training and information needs seem to be on the patient side. Getting patients up to speed who struggle more with these devices takes a lot of staff time which is hard to afford at the moment."

When patients are struggling with their own confidence in using remote monitoring tools, this can result in increased demands on clinical staff for help and support. This ultimately draws clinical staff from providing clinical care to coaching and training in use of tools which many participants reported finding frustrating and inefficient.

Secondly, participants told us that patients will also seek answers to technical problems regarding the devices from primary care staff, either during consultations or through contacting surgeries for advice. Again, this was perceived as problematic and time consuming. Participants felt that when RMTs are being used, these need to be provided with technical support and troubleshooting advice, external to primary care staff.

"If you're doing remote monitoring and [patients] present with [technical] problems like 'I cannot see anything on the machine', it is virtually impossible to fix it over the phone. You end up trying to troubleshoot blind and deaf to be honest and this is very time-consuming."

A common thread through both these issues was that with workforce pressures and limited capacity, both training in the use of devices and ongoing technical support must be provided outside of the GP practice and primary care team.

"It would help if the training is carried out by someone other than the workforce as the workforce is so strained doing clinical work that we do not have the capacity to train patients how to use [RMTs]."

Some ideas to support patient education and use of remote monitoring tools included better online resources, videos, chatbots and digital primary care welcome packs for patients. The latter could bring the entire practice digital offer into one place, for example;

"A digital primary care welcome pack could include an introduction to the NHS app, remote monitoring tools and the reasons we use them, rather than this app for that, this app for this..."

It was also recognised by participants that the limited resources and support available within primary care may lead to patients opting out of remote monitoring opportunities. There was recognition that some people simply don't want to engage with technology, but

that there may be another group of people for whom, despite initial refusal, if given time, information and training may be encouraged to take up the technology.

5.4. Training and Resources

Training and development to support use of RMT was a further important theme which arose through the course of the conversations.

The word cloud below visualises the most common responses to the question '*What would make you feel more confident about using RMT*?' Staff training and mentoring were the most frequent responses across the group.

Further discussion seemed to separate into two distinct areas - tailoring workforce content and ideas around the model and delivery of training and education.

5.4.1. Workforce training needs and support – Tailoring training content to workforce role

Participants frequently described the need to tailor training content, support and approaches for staff working in different roles. For example, one participant shared their experience in introducing the use of digital tools in their workplace to support their patients. The initiative was initially met with some resistance due to lack of confidence in using these tools as well as the lack of knowledge of how these tools work to benefit the patient. However, they share that the team overcame these barriers by investing in staff education through signposting staff to online resources and local training hubs, *"…it all came down to educating your staff"*.

Some participants also shared that there is often a divide between clinical staff and operational staff when it comes to implementing and using RMTs. For example, several participants described the fact that many clinical staff including GPs, nurses, HCAs and allied health professionals welcome the use of RMT as an important tool in detecting and preventing deterioration. One participant told us; *"the clinical staff all went 'Oh I totally get this", they realised that this tool would help with more effective clinical triage."* However, the same participant felt that the immediate benefit of implementing a new digital tool was less tangible for some operational staff who may be under pressure to deliver against targets such as the Quality and Outcomes Framework (QOF). Whilst we did not have time to explore this further, this did illustrate the challenges with the use and implementation of mandatory targets which

can both hinder and support digital transformation. Such views would need to be explored more fully because the majority of participants had a clinical background and further exploration with operational staff would be beneficial.

5.4.2. Training modality and delivery

Respondents also spoke a lot about their preferred ways of accessing and engaging with training and education. Unsurprisingly, given the immense pressure currently placed on primary care at the moment, they overwhelmingly leaned towards short, bitesize training sessions, with several participants suggesting short, concise 15-minute sessions which are digestible and efficient.

Some participants noted that training sessions and learning opportunities aimed for staff are often held outside of working hours or within their lunch break. While they welcome the opportunity to learn, this expectation to attend outside of their contracted hours felt unfair and unsustainable, often "*taking a large chunk of really valuable non-work time"*

This led to further conversations around the often-frustrating lack of opportunity to have dedicated time for training. Even with attempts to protect training time, this is often still interrupted with expectations around managing competing day-to-day responsibilities alongside their learning.

"Primary care staff are asked to juggle their day even when they are meant to be doing courses so face-to-face training with no interruptions [would be helpful]."

Participants also spoke candidly about how they feel about how training sessions are structured and delivered. As we have adjusted to a more virtual world, online learning has adopted an expected and normalised format and etiquette which can include long introductions and unnecessary agenda items, sometimes with poor time keeping.

"Please don't ask too much of us, our time is limited, and training must serve a purpose, without the fluff, introductions are great but actually better for us all to just get straight to the point, or I'll just switch off if I'm honest."

Unsurprisingly, the biggest pressure and influence on staff ability to engage with and benefit from training was staff capacity, particularly as we face the ongoing challenges of the Covid-19 pandemic. Most primary care staff are feeling under intense pressure with multiple competing priorities. Participants highlighted the importance of being able to access training offline, when they have the time and capacity to digest new information.

5.5. Implementation science and investing in early adopters

Finally, a strong theme emerged around the importance of implementation science and skills development. This was not something that we intended to explore as part of the project but has unearthed some interesting insights with relevance for design and delivery of training to support use of RMT.

This theme had two elements to it. Firstly, the importance of developing understanding amongst the workforce of implementation science and equipping staff with tools to support adoption and address some of the common challenges to uptake of new technologies. Secondly, a recognition of the importance of providing additional coaching and support to those staff who were championing and leading the early adoption of new technologies, such as tools used to support RMT.

Enabling successful implementation

For many of the participants, it was important that training approaches and tools consider the importance of realistic expectation setting in innovation implementation. Participants spoke about the risk of losing the investment and enthusiasm of staff if they don't have a broader understanding of the complexity and challenges of implementing innovations. This led to rich conversations about the limited awareness of implementation science and strategies amongst the wider workforce. There was a sense that training needs centred more around the principles of innovation implementation, rather than digital tool specific skills development.

> *"We need to build in some work around digital implementation skills. You know, is the training need actually around digital implementation rather than specific tool skills?"*

Implementation science traditionally provides a framework to support the translation of research into clinical practice. It provides a systematized approach to mobilising facilitators to system change, whilst addressing common barriers and challenges to change. Such frameworks and tools can play a key role in developing learning health systems and supporting adoption of new technologies. Academics such as Greenhalgh & Papoutsi (2019) argue that successful adoption and scale of innovation requires a structured and phased approach to developing and evaluating interventions. Greenhalgh et al (2020) recently developed the NASS-CAT tool to support successful implementation of technology within the health sector. This tool draws on learning from successes and failures of numerous health technology projects and outlines several core domains to consider and work through in the preparation and implementation of new technologies. The tool is summarised in the image below.
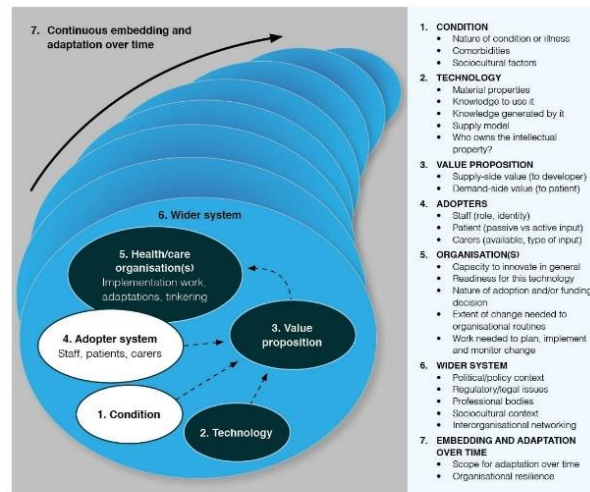
Note: Adapted from Greenhalgh T, et al. 'Beyond adoption: a new framework for theorizing and evaluating nonadoption, abandonment, and challenges to the scale-up, spread, and sustainability of health and care technologies'.[1]

Several of the NASS-CAT domains arose within the discussions during this project. For example, the importance of ensuring the workforce connects with the value proposition. The value of remote monitoring may be immediately obvious to clinical staff, but for other staff groups trying to understand how the technology may or may not support organisational and operational targets it may not be as clear.

> *"Some practice managers and operational staff might find it harder to understand as its clinical, the clinical and operational requirements are not always in line."*

This description of different starting points in terms of connecting to and understanding the value of technologies, such as RMT is an important consideration when designing training tools and programmes for a broad workforce. There is the real risk that unless the value of the technology is tangible, the barriers acknowledged and staff are supported to address these, they may decide to opt out.

> *"You need to understand the story of 'why'. Must get the buy-in for the tech, selling the benefits. Being clear about the reality of the time intensity and requirement of new digital projects. Being realistic about the use of tools - so don't lose staff along the way. Otherwise, that initial enthusiasm can wane and you're all uphill."*

Improving understanding of implementation science and tools to work around barriers may help mitigate this. At the heart of anything that requires a person to undergo a shift in their normal practices lies the science of behavioural change. One study suggests that it takes up to 254 days for a new action to become a habit (Lally, van Jaarsveld, Potts and Wardle, 2009). Thus, to be able to fully support our patients to use RMTs, we need to consider the multiple factors that underpin behavioural changes - and this applies to both staff and patients.

Participants also spoke about the wider organisational understanding and skills needed to support the implementation and sustainability of technologies in primary care. This includes moving to proactive rather than reactive planning in procurement and commissioning (an issue which emerged within previous themes) and engaging primary care staff in this process. The current nature of commissioning cycles, where '*all could change with the next commissioning cycle*' could be better managed through equipping and supporting staff to be able to more effectively engage with this process.

For example, developing the business model for introduction of a new technology was seen as important both for initial implementation and sustainability, with one participant feeling that many clinical staff lack the training opportunity to contribute to this process effectively.

They also highlighted the importance of ensuring that the progress made with current successful technologies won't be lost with the significant system changes as we move to Integrated Care Boards.

> *"...like just moving to ICS, how will funding work? There will be implications transitioning to the new model and innovations can get lost or forgotten or deprioritised"*

Relatedly, several participants talked about the importance of staff involved in selecting technologies and planning implementation having improved understanding about how to contract with and negotiate with technology companies.

> *"...need to think more clearly about how to implement things like remote monitoring within the contract we get with software or tech contracts, making sure we negotiate well and what we need. This is part of the implementation element too. A training need around negotiation…"*

Coaching and supporting the 'Champions'

This segues into the second element of this theme which is about the importance of providing additional support and coaching for early adopters. Technology implementation projects within health care have high failure rates, often related to their unexpected complexity and unrealistic ambitions (Greenhalgh & Papoutsi, 2019). The time and energy required from adopters to drive a technology project forward to successful completion cannot be underestimated. As described in the previous section, there is a risk that initial enthusiasm and passion for the technology may be lost when the project encounters challenges and difficulties.

> *"...often clinical staff, they come with these great ideas - let's use this fantastic technology, and often it is, and then a few months later it's quiet because you know, the normal challenges and the energy"*

These early adopters are champions of digital technology and play an important role in enthusing their colleagues and ensuring effective uptake of new tools, such as those used in remote monitoring.

> *"...supporting the champions is important, you know enabling them to lead the behavioural change, building communities of practice, providing peer support. They need mentoring, coaching and a recognition of the challenges in this work"*

However, they often lack experience in leading and influencing such programmes and would benefit from additional coaching, training, and support. Numerous studies have shown the importance of designing specific training and support programmes for these staff who play a crucial role in the success of digital transformation programmes (Albery et al, 2019; Castle-Clark, Edwards and Buckingham, 2017). Primary care faces unprecedented challenges at this time, with very limited capacity for training and development. The workforce is weary, and it is even more important that those who are leading change and driving improvements need space to reflect and learn. Building a supportive training intervention which takes into consideration the modes and models of learning the workforce prefers could play an important role in supporting these key people.

6. Summary and Key Learnings

The aims of this project were to understand the unmet training needs amongst primary care staff in enabling them to use RMT; to understand what resources they already use and their preferences for training and development support. This project has several limitations in that the participant numbers are small, and participants were self-selected. This means that respondents were potentially biased towards those interested in RMT and the project would have been enhanced with a more diverse range of participants. However, despite these limitations, the project has provided useful insights which goes some way in answering the project questions. It has provided some guidance for the design and delivery of training to support RMT as well as unexpected insights around gaps in patient technical support and the need to invest further in implementation skills.

Key learning to embed in future training design includes:

6.1. Workforce training needs

- **Tailor approach to the staff group and level of experience**

  The difference between the training needs of different staff groups were made apparent during the conversations made throughout this project. Tailoring the structure and approach when designing and delivering training sessions based on the staff's line of work and level of experience would be beneficial in maximising learning.

- **Invest in champions, provide coaching and resources for local innovation leaders**

  Leading innovation is challenging with multiple barriers to navigate. Investing in early adopters and providing them with the skills to navigate challenges and bring colleagues with them will create an environment for success.

- **Consider investing in patient education as much as staff education**

  Participants described the unintended consequences of additional workload falling on clinical and other practice staff in supporting patients to use RMT. Primary care staff do not have the time to provide technical support to their patients alongside their clinical duties. It may be useful to consider:

  - Finding ways to provide technical support to patients that do not rely on the clinical team. This can be in the form of recruiting and training volunteers to discuss technical issues directly with patients, or perhaps including remote technical support as part of RMT-offering

  - Encourage peer-to-peer support between patients using the same RMT through patient-led support groups so that they can learn from each other

  - Provide better signposting to external resources that patients can access to learn more information about the RMT they are using. For example, FAQs containing common technical issues, or more educational background about the tool, may be beneficial.

  - Consider development of tools such as digital primary care welcome pack which includes information, guides, and tools for patients to utilise the various tools within the digital primary care offer.

6.2. Training design and delivery

- **Blended learning models**

  Participants highlighted the importance of blended learning approaches which enable them to access resources on and off-line, to access live and in their own time. They also highlighted the need for better signposting to existing resources, whether this is through online platforms such as e-Learning for Healthcare or local training hubs.

- **Bitesize learning with clear learning objectives**

  It was clear that multiple short and succinct training sessions (i.e. 15 minutes) are more valuable to staff than an hour-long training session. This benefits them in multiple ways:

  - It maximises learning through better knowledge retention
  - They are less likely to switch off during the training session
  - It provides them with the flexibility to integrate training sessions into their already busy schedules

- **Provide succinct learning summaries and quick view guides**

  Participants told us that succinct summaries of learning are useful to support retention of new knowledge. In addition, quick view guides which can be used by clinicians or patients are particularly useful for supporting use of RMT. This might include, for example, links to troubleshooting videos online which patients can be directed to.

- **Don't be afraid to move away from traditional delivery formats**

  In a time where most training sessions are delivered virtually, online training sessions have adopted an expected format and etiquette. Participants frequently requested that training sessions be delivered with more efficiency - cutting out introductions and unnecessary background information so that sessions focus specifically on clear learning goals and can be short and impactful.

- **Support staff in finding protected time to dedicate to learning**

  As a system, we need to do more to support our staff in finding and protecting the time for uninterrupted learning. As activity has rapidly increased in primary care, many staff are facing almost intolerable pressures. However, rather than deprioritising learning, it is even more important to find ways to release staff and protect training and reflection time.

- **Support peer-to-peer learning**
  Throughout the project, participants highlighted the importance of peer-to-peer support and learning. Where possible, it would be beneficial to provide the space and time for group discussions and cultivate an environment of continuous group learning.

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8. Appendices

8.1. Appendix 1: Survey Questionnaire

The following questions were asked on the survey:

1. What is your job title?
2. What is your local CCG?
3. Have you had any experience in using remote monitoring tools? If Yes, please go to Q4. If No, please go to Q9.
4. If you answered 'yes' in Q3, please use this space to list what tools/technology you have been using.
5. Was the use of this technology in response to COVID-19?
6. Are you intending to continue using this technology as we recover from COVID-19?
7. How did these tools change how you work?
8. How confident do you feel in using remote monitoring tools?
9. What do you think are the biggest challenges to using remote monitoring in your role?
10. What would make you feel more confident in using remote monitoring tools?
11. What patient feedback have you had in relation to remote monitoring?
12. What do you think are the biggest challenges to patients using remote monitoring tools?
13. What do you think are the enablers to patients using remote monitoring tools?
14. How can we help you and your patients maximise the value of remote monitoring?
15. We would love to hear more from you! We would be running 2 small focus groups on the week of 15th November 2021. If you are interested in participating, please leave your information below and we would be in touch.

Primary Care Workforce Remote Training Needs Project

Interim Report – Workforce Survey
9th November 2021

CARE CITY

Project Summary

- Care City, under the direction and guidance of UCLPartners (CVD/Proactive Care Team) is working to identify the training and development needs of primary care staff to support patients in the uptake and participation in using remote monitoring devices.
- The aim of this project is to establish primary care staff's needs and confidence levels in recommending and demonstrating digital resources / technologies to patients.
- To help UCLPartners understand what support is needed both for health professionals and patients, Care City has developed a survey to identify what support primary care staff need to support their patients in using remote monitoring.
- Based on the insights from the survey, Care City will run two focus groups to understand how this support will be best achieved.
- The insights from these two sources will feed into UCLP's Proactive Care @home programme to support the development of the required materials and training information on remote monitoring and self-management.

Primary Care Workforce Survey: *Summary*

- On the 13th October 2021, the primary care workforce survey went live and circulated to stakeholders via multiple streams.

- The aim of this questionnaire was to identify what support primary care staff need to support their patients in using remote monitoring.

- The survey closed on the 7th November 2021 to collect as many responses as possible.

- As of the 9th November 2021, 20 people completed the survey.

Primary Care Workforce Survey: *Summary*

- **Important notes**:
  - This survey was circulated to primary care workforce only. Thus, the responses generated from this survey are limited to the workforce's perspectives.
  - Due to the small number of respondents, limitations of this report includes:
    - Higher variability in responses
    - Voluntary response bias

- **This interim report** aims to:
  - Present the results of the survey
  - Provide topic recommendations for the focus groups

Primary Care Workforce Survey: *Questions*

The following questions were asked on the survey:

1. What is your job title?
2. What is your local CCG?
3. Have you had any experience in using remote monitoring tools? If Yes, please go to Q4. If No, please go to Q9.
4. If you answered 'yes' in Q3, please use this space to list what tools/technology you have been using.
5. Was the use of this technology in response to COVID-19?
6. Are you intending to continue using this technology as we recover from COVID-19?
7. How did these tools change how you work?
8. How confident do you feel in using remote monitoring tools?
9. What do you think are the biggest challenges to using remote monitoring in your role?
10. What would make you feel more confident in using remote monitoring tools?
11. What patient feedback have you had in relation to remote monitoring?
12. What do you think are the biggest challenges to patients using remote monitoring tools?
13. What do you think are the enablers to patients using of remote monitoring tools?
14. How can we help you and your patients maximise the value of remote monitoring?
15. We would love to hear more from you! We would be running 2 small focus groups on the week of 15th November 2021. If you are interested in participating, please leave your information below and we would be in touch.
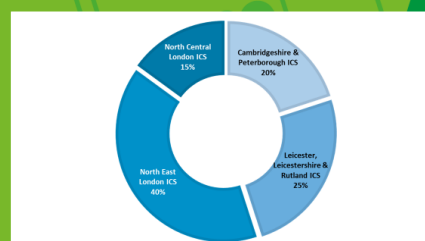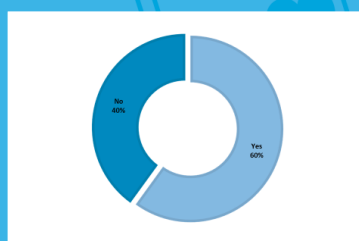

Survey Results

Q1 - What is your job title?
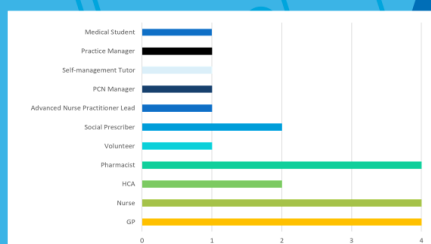
Q2 - What is your local CCG?

Q3 - Have you had any experience in using remote monitoring tools?

If Yes, respondents are instructed to go to Q4.

If No, respondents are instructed to go to Q9.

Q4 - If you answered 'yes' in Q3, please use this space to list what tools/technology you have been using
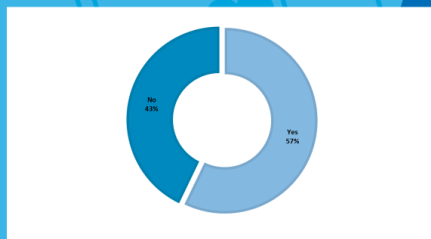

- It is interesting how respondents interpret 'remote monitoring tools'

- Majority of respondents listed most used digital tools in primary care such as AccuRx, e-consult and SMS.
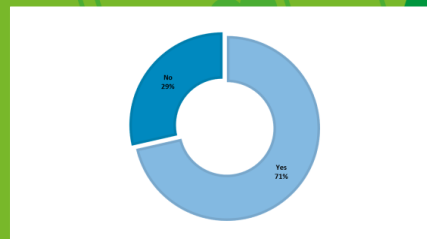
- However, some respondents also classify webpages (such as BHF and Asthma UK) as remote monitoring tools.

Q5 – Was the use of this technology in response to COVID-19?

No 43%
Yes 57%

Q6 - Are you intending to continue using this technology as we recover from COVID-19?

No 29%
Yes 71%

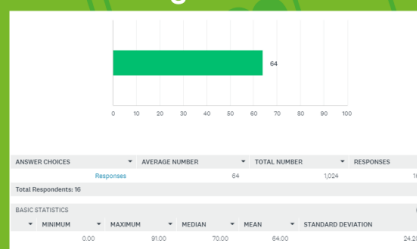## Q7 - How did these tools change how you work?

Improved patient experience
- Empowers patients to take control of their condition and treatment
- Provides patients with more information to allow more informed decisions about their health and care
- Easier for patients
- Quicker response rate from clinicians
- Reduced unnecessary visits to healthcare provider and thus reduced risk of infection
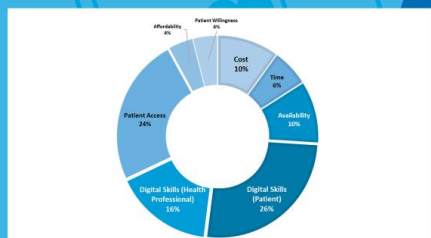- Allows patients to provide their input prior to consultation

Better primary care staff experience
- More efficient transfer of information from patient to clinician
- More robust data to make clinical decisions
- Allows staff to undertake medication checks without having to bring people in for assessments
- Puts self-management at the forefront of patients minds and empower them to take control of their condition and treatment
- Some systems and platforms are complex and have long forms to fill in details

Q8 – How confident do you feel in using remote monitoring tools?

ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
Responses	64	1,024	16

Total Respondents: 16

BASIC STATISTICS

MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
0.00	91.00	70.00	64.00	24.20

Q9 - What do you think are the biggest challenges to using remote monitoring in your role?

Affordability 4%
Patient Willingness 4%
Cost 10%
Time 6%
Availability 10%
Patient Access 24%
Digital Skills (Patient) 26%
Digital Skills (Health Professional) 16%

Q10 - What would make you (HCP) feel more confident in using remote monitoring tools?

- **Patient Education**
  - *This includes involving family members to increase participation and compliance, and reduce digital exclusion where possible*
- **Staff training and mentoring**
  - *Using this opportunity to reinforce the purpose of using technology to support patients*
- *Better **integration** of technology with existing patient record systems*

Q11 – What patient feedback have you had in relation to remote monitoring?

- **Prefer face-to-face**
  - *Most patients still prefer face-to-face consultation even when there are digital alternatives available*
- **Access**
  - *Some patients are unable to access services due to language barriers, low literacy skills and low confidence in using technology*
  - *Digital exclusion – no access to IT or wifi*
- **Convenient**
  - *Those who can use it find it convenient and helpful*
- **Staff managing patient anxiety**
  - *"Explaining that [the digital tool] is as accurate as [the] readings in the surgery"*

Q12 - What do you think are the biggest challenges to patients using remote monitoring tools?

- **Access**
  - *Some patients are unable to access services due to language barriers, low literacy skills, low confidence in using technology, vulnerabilities such as being blind or deaf.*
- **Digital exclusion** *due to data poverty and no access to IT*
- **Affordability**
  - *"[Patients] can't afford to update their computers"*
  - *"[It is] ok for more affluent communities, but many of my patients would struggle."*
- **Patient Education**

Q13 - What do you think are the enablers to patients using of remote monitoring tools?

- *"More time to help patients use remote tools so that we know they are doing it properly"*
- Use this opportunity to:
  - *Involve family members*
  - *ease people's anxiousness about technology security and how their data is being used*
  - *Enforce the importance of 'good technology'*
    - *"[Tools that are] validated and trustworthy. A £10 watch from Amazon which 'monitors vital signs' is more trouble than help."*
- **Improvements to technology to allow better user experience**
  - *Provide patients with tools that have intuitive design, easy to use and has good user interface that provides good user experience*

Q14 - How can we help you and your patients maximise the value of remote monitoring?

- **Patient Education and Training**
  - *More time dedicated to supporting patients in using the tool to ensure:*
    - **Correct usage**
    - Build patient **confidence**
    - **Compliance** – regular encouragements can help
      - *"Virtual/email contact to encourage them to keep up the monitoring. VGCs can work well for this"*
- **Staff Training – Healthcare Champions**
  - *By providing more training, staff are more confident and sees the value of using and prescribing remote monitoring tools. In effect, we are creating healthcare champions that encourage patients to use the technology.*

Q14 - How can we help you and your patients maximise the value of remote monitoring?

- **Best technology for our population**
  - More time to invest in **market analysis of tech**, understanding what is available to the system, **how it interface with patient records**
  - **Improving** technologies that we are already using to provide better user interface

- **Funding and investment**
  - **Longer pilots to test out new technology**
    - "Sometimes technologies are introduced as part of a short pilot. Staff spend time getting used to including it to their day-to-day routine (which takes a long period of time), but then it is decommissioned when the pilot finishes and usually when it has only been properly part of the routine for a couple of weeks"

Summary

Key Enablers: Staff

Technology that is fit for purpose and provides good user interface

Staff training and mentoring

Funding and investment for testing out new technologies and improving existing ones

Key Enablers: Patients

Patient education and training

Affordable and accessible tools

Validated and trustworthy tools

Topic Recommendations for Focus Group: Further Exploration of Emerging Themes

Explore the workforce's understanding of 'Remote Monitoring'

Explore the workforce's confidence in using digital tools

Identify ways to deliver training that works for the workforce

FOR MORE INFORMATION

Care City

1st Floor, Barking Enterprises CIC
50 Cambridge Road, Barking, IG11 8FG

E: maryfrance.jardiel@carecity.org
Twitter: @CareCityUK
www.carecity.london

UCLPartners

3rd Floor,
170 Tottenham Court Road, W1T 7HA

Tel: 020 7679 6633
Twitter: @UCLPartners

www.uclpartners.com

8.3. Appendix 3: Focus Group and In-depth Interview Topic Guide

Introduction and confidentiality preamble:

Hi everyone, welcome! Thank you so much for taking the time out of your very busy schedule to chat to us about remote monitoring in primary care.

My name is Mary France and I'm a project lead at Care City, a community interest company established in Barking to support healthy ageing in north east London. We are delighted to have you this afternoon!

During this session, we would be exploring what remote monitoring means to you. By the end of the session, we hope to be able to identify what support primary care staff need to support their patients in using remote monitoring tools. Your thoughts and experiences will be key and important in ensuring that the resources developed are fit for purpose and helpful for our colleagues.

There isn't any right or wrong answers to the questions that comes up – Please feel free to share your thoughts knowing that this is a safe space free of judgements.

Please note that this workshop will be recorded to support us in writing the after-session report. We would like to capture your thoughts and insights to include in the report. This will of course be anonymised and will not be traced back to any individual. We would not be sharing this recording elsewhere.

Setting the scene

- Agenda run through, including: aims of the session, introduction to the Proactive Care Framework
- Introductions

Remember prompts: How, What, Explain, Example, Am I right?, So you're saying…?

Questions

1. **Explore the workforce's confidence level in using digital technologies**
   - What digital tools do you use in everyday life?
   - How do you use digital devices in day-to-day life?
   - How comfortable are you in using digital tools?
   - What is your experience in using these?

- How confident are you in using digital tools at work?
- Have you found any differences in the level of confidence in using digital tools in your team?
- What would help you be more confident in using digital tools?
- For colleagues that are less confident in the use of digital tools, what types of education materials do you think would have the most value? Feel free to suggest any topics that you think might be valuable

2. **Explore the workforce's understanding of the term 'remote monitoring'**
   - What does the term 'remote monitoring' mean to you?
   - What is the first thing that you think of when you hear the phrase 'remote monitoring'?
   - What constitutes a 'remote monitoring tool'?

3. **Explore the workforce's experience in using RMT at work**
   Key themes to explore

   - Learning needs – staff and patients
   - Barriers to using RMT
   - Patient experience and barriers in using RMT

   - Do you use any RMT in your organisation?

     (if Yes)
       - What RMT do you use?
       - When do you use RMT in your role?
       - How do you use RMT in your role?
       - What is your experience in using RMT?
       - What has been the biggest help in enabling you to use RMT effectively?
       - If anything, what is getting in the way of your colleagues using RMT?

     (if No)
       - How would the use of RMT transform the way you work?
       - What is getting in the way of you using RMT?
       - What would help in getting you to use it?
       - What training tools did you find most helpful?
       - What would help you be more confident in using RMT?

   - Tell us more about the RMT that you use in your organisation
       - What everyday skills could you use to support patient engagement?

4. **Using a case study, explore barriers to successful implementation of remote monitoring tools and identify ways to best support staff in offering remote monitoring tools**

   - Where would you start in terms of supporting your team in using this tool?
   - What would you need to feel confident in supporting patients to use this tool?
   - What challenges do you think you might face in supporting patients to use digital tools / RMT?
   - What training would you need to have in place and what would be the best way to deliver these?

5. Identify training needs and resources for workforce
- What is needed to help healthcare professionals promote remote technologies to patients?
- How can we educate our community in using remote monitoring tools?
- How can training and resources be best delivered to you?
- Is there anything we have not asked you that you would like to tell us about workforce training needs around remote monitoring
- What is helpful when learning new digital skills?
- How do you prefer to learn?
- How do you prefer to maintain these skills?
- What works well when you are teaching new skills to patients?

Thanks and close

8.4. Appendix 4: Supporting statements to supplement the findings section

Key theme	Supporting statements
5.2 Barriers to the use of RMT	
Digital exclusion – Data poverty and digital literacy	*"[The] cost of equipment - [It is] ok for more affluent communities, but many of my patients would struggle."* *"[When] thinking about LTC – we may have tech savvy older adults, but [we] also need to think about digital exclusion and the cohort of patients who may need some handholding and access to the equipment."* *"I feel that in the last 20 months people are more confident in using remote digital tools and are open to remote monitoring. However, I have a concern for those who are unable to monitor themselves or choose not to and how this can be addressed."* *"Sometimes we need to recognise where remote monitoring is or isn't appropriate otherwise you can invest much time in trying to get people to use it which actually is wasted."*
Accessibility	*"Care needs, learning disabilities – we need to be aware of the cohorts at risk of exclusion."* *"Lots of our patients don't speak English and need help [from their families]."* *"Working with the wider family – [they can be the ones] who become [the] key in [patients] supporting remote monitoring."* *"Interaction with families, neighbours and friends help. [It] can address some of the exclusion element."* *"…when English isn't a first language and using family and friends, this does raise issues around IG [Information Governance]."* *"Need to have training/consultation in different community languages. Language is huge barrier to taking up remote monitoring."*

Sustainability	*"Too often [remote monitoring tools are] just a flash in the pan, lots of enthusiasm to try it but then this isn't followed by long-term funding or commissioning which means the tech cannot continue to be used."* *"Sometimes, technologies are introduced as part of a short pilot. Staff spend time getting used to including it to their day-to-day routine (which takes a long period of time), but then it is decommissioned when the pilot finishes and usually when it has only been properly part of the routine for a couple of weeks."* *"Procurement is a major issue – could change with the next commissioning cycle."*

5.3 Patient Support and Training Needs

Low digital confidence in patients leads to increased demands on primary care staff	*"The less complicated and invasive it is, the easier it is to roll out."* *"The education bit on the patient side is where we have the real gaps."* *"I want to get on and work with the patient to apply the use of the device to improve their health, not spend 20 minutes trying to get the device to work and show the patient how it is used."* *"Many patients want to extend the utilisation of digital tools, those less confident can be more resistant to remote monitoring – [they] would need face to face to bridge the gap before utilising digital."* *"...if we can provide remote monitoring to those who can, it gives more time for us to see those who can't use it."*
Patients seek answers to technical problems regarding the device from primary care staff	*"When we spend time educating on the tool, we are actually missing valuable clinical evaluation time."* *"[There is] no capacity in the workforce to provide training to patients – this is a big gap. It would be valuable investing time in patient groups who resist use of remote monitoring – providing coaching and support to build skills and confidence."*

	"We end up trying to find YouTube tutorials to tell people how to use Zoom or use their BP monitor. When issues happen that's the problem - where do patients go? They call their GP, adding to the phone line burden."
Patient training must be provided outside of the GP practice and primary care team	"Anything which adds to workforce demands is not viable - training needs to be delivered by external agencies, not taking frontline staff." "Needs tech teams to support this otherwise will face multiple barriers in relation to staff resource and capacity." "Do programmes such as digital community champions offer a potential solution here?"
Limited resources and support available within primary care may lead to patients opting out of remote monitoring opportunities	"Must respect people who don't want to take part – of course if you had the time to engage with those who refused that would be great and perhaps you would increase uptake. We just don't have the time or resources for that." "No capacity in the workforce to provide training to patients - this is a big gap; It would be valuable for investment of time in patient group who resist use of remote monitoring - providing coaching and support to build skills and confidence." "Need to accept where people want to refuse remote monitoring, should be opt in rather than default as in everyone is automatically enrolled."
5.4.1 Workforce training needs and support – Tailoring training content to workforce role	
Staff using remote monitoring are generally confident in using tools.	"You're never using devices alone, there is always a member of the team who will understand who can give you some help and get you up to speed, so training on the staff side is less of a problem." "You'll never be delivering this alone, much support across the primary care team." "By working alone from home and having to learn these new systems on your own, you become much better at them."
There is a need to tailor training content, support and approaches for staff working in different roles	"[RMT] type of training is often lumped on the practice admin teams, not thinking about the wider team and workload already on admin."

	"There was a little bit of reluctance to start with. We faced questions such as 'Can I as a healthcare assistant advise patients on how to use this?', or 'Can HCAs give the correct advice to patients?'" *"It all came down to educating your staff. There are elearning for healthcare courses online which are great in providing HCAs with the basic understanding [of how to take vital sign measurements and interpreting results]. We also have local training hubs which provide basic ECG knowledge aimed specifically at HCAs. This self-directed learning helps them to be more confident in their role and in supporting patients in using remote monitoring tools."*
There is often a divide between clinical staff and operational staff when it comes to implementing and using RMTs	*"The clinical staff all went 'Oh I totally get this; we are going to see the people who need us the most first. That makes total sense.' They understood it, they totally got it and really liked it. They liked the mixed workforce that make up the care. They like the fact that HCAs do 80% of the work up and depending on the results, the clinical pharmacist can make onward decisions if needed. They see the massive benefit of preventing conditions to exacerbate before seeing patients before their annual review."* *"The use of remote monitoring tools delivers a clinical change but operationally it doesn't quite fit. Operationally, Practices need to meet QOF targets and everybody that needs to get seen is seen at least once a year. This absolutely needs to happen, however trying to assure the ops team that we would get these done on a needs-must-order basis rather than the usual system of using the alphabet or via the patient's birth month, was met with criticisms and scepticisms as it is a very different way of working."*
5.4.2 Training modality and delivery	
Respondents overwhelmingly leaned towards short, bitesize training sessions	*"I want to learn, but I want to do that quickly. Short, concise 15-minute sessions which are digestible and efficient."* *"...short training sound bites - people start to forget the staff time needed to do training "*

	"...realistically, I'm not going to retain 60 minutes' worth of learning in the middle of a full-on clinical day." *"Bitesize learning which I can dip into and listen to, with 2-4 key learning points is much more manageable and I will be more likely to retain that learning."*
The expectation to attend training outside of their contracted hours felt unfair and unsustainable	*"I don't want to lose my whole lunch break."* *"So much of training is outside of working hours and it just isn't efficient, taking a large chunk of really valuable non-work time."*
Participants also spoke candidly about how they feel about how training sessions are structured and delivered	*"If you are joining outside of your working hours which you often are, they need to be super concise. No introductions, very concise.* *Otherwise, I just don't have the time. I'm absolutely shattered in the evening and need quick fire information - I don't have the energy to join an hour's session when the first 15 minutes is introductions.''* *"I can't always commit to joining a workshop – need something simple like a factsheet which is really simple, accessible and I can quickly refer to."*
5.5 Implementation science and investing in early adopters	
Ensure that the workforce connects with the value proposition	*"We need to think more carefully about how to implement things like remote monitoring."* *"Need a bigger holistic picture, nursing might get it but needs more selling to the ops side."* *"Need to understand what the goals are...need to tread the line between talking to a workforce already tired and having been through multiple changes during the last 12-24 months to sell this in the right way. Not another piece of flash in the pan."* *"…great, great for patients, accurate data – but the workforce is feeling exhausted and wondering about benefits."* *"Staff such as social prescribers [are] collecting more qualitative data and wellbeing - could this be digitised better?"*

The different starting points in implementation, both in terms of connecting to and understanding the value of technologies, is an important consideration when designing training tools and programmes for a broad workforce	*"A large part will be implementation and investment of time with patients. Clinical teams can sometimes forget or don't really know about the huge amount of work involved in implementing things."* *"When introducing systems, the whole team needs to buy into the idea for it to work and this is only possible by training and education of systems."* *"Is it that the training needs are around digital implementation rather than specific tool skills?"*
Participants also spoke about the wider organisational understanding and skills needed to support the implementation and sustainability of technologies in primary care	*"Procurement is a major issue - all could change with the next commissioning cycle, need skills and understanding in the team to plan for that, build the business case rather than scrabbling to do that yesterday."* *"As clinical staff, we want to use the tech to help patients, the right thing to do but then how [do we] move that forward?"* *"Money always helps with moving projects forwards. Can find additional staff time for LTC support if there is funding."*

8.5. Anonymised list of participants' job roles – Survey, Focus Groups and In-depth Interviews

Method	Participant's Job Role
Survey (20 responses) **Note**: Respondents are able to tick more than one job role	4 General Practitioners 4 Pharmacists 4 Nurses 2 Healthcare Assistants 2 Social Prescribers 1 Volunteer 1 Primary Care Network Manager 1 Self-management Tutor 1 Practice Manager 1 Medical Student 1 Advanced Nurse Practitioner Lead
Focus Groups	- Clinical Pharmacist (NCL) - Social Prescribing Link Worker (NEL) - Pharmacist (NCL) - General Practitioner and IT Clinical Lead (LLR) - Care Coordinator (SEL ICS)
In-depth Interviews	- Group Lead Nurse (Cambridge and Peterborough ICS) - Advanced Nurse Practitioner Lead (Cambridge and Peterborough ICS) - Self-management Tutor (NEL)