

Evaluation of Remote Monitoring of Long Term Conditions in South East London

November 2022

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1. Executive summary

1.1 Overview

This evaluation focuses on the use of the Doctaly Assist platform by both patients with asthma and chronic obstructive pulmonary disease (COPD), and staff from One Health Lewisham (the GP federation for Lewisham). It was commissioned by the London Digital team at NHS England and is part of a wider pan London evaluation looking at the use of remote monitoring in supporting the management of long-term conditions (LTCs) across a number of clinical pathways.

Doctaly Assist uses the WhatsApp messaging platform to facilitate the collection of patient information and the completion of clinical assessments and annual reviews. Clinicians can assess and interact with patients remotely. Patients without access to smart phones or WhatsApp can be supported through remote telephone consultations. One Health Lewisham (OHL), a GP federation of 33 General Practices in Lewisham which cares for more than 300,000 people, is responsible for managing the Doctaly Assist Long Term Conditions Review service to assist GPs in reducing their workload. It operates as a hub-led model, with a centralised team.

1.2 Evaluation purpose and design

The evaluation aimed to answer the following questions:

- Who are the patients with COPD and asthma that are using Doctaly Assist?
- How did these patients engage with the service?
- What is the patient experience of the service? Do patients find using the technology acceptable?
- What is the staff experience of the service?

It used a mixed-methods approach including in-depth interviews with staff and patients, and an analysis of data collected by Doctaly Assist (i.e. service data from October 2021 to August 2022).

1.3 Overview of Doctaly Assist data

- 35.6% patients invited to use Doctaly Assist completed the registration process.
- A larger proportion of patients with COPD invited failed to respond and register (65.1%) compared to the patients with asthma (60.2%).

1.4 Who are the Doctaly Assist patients monitored for COPD and asthma

- 65% of patients with asthma registering with Doctaly Assist were female, compared to 54.6% female Doctaly Assist-registered patients with COPD.
- The average age of registered patients with Doctaly Assist was 48 for asthma and 68 for those with COPD.
- For patients with asthma, uptake of Doctaly Assist was the lowest in the 18-24 and 55-85+ age groups, whereas for patients with COPD, uptake was the highest in the 45-74 year old age groups.
- Registration was proportionately lower in all ethnic minority groups (excluding white minorities) for both patient groups.

1.5 Assessments taken place on Doctaly Assist

- Of those registered, the majority (72.7%) had at least one completed clinical assessment¹ by the time of analysis.
- A higher proportion of registered patients with asthma had at least one assessment (73.8%) compared to registered patients with COPD (67.4%).
- This means that a quarter (25.9%) of all invited patients on the two pathways have had at least one assessment.
- The proportion of registered patients with asthma and COPD having at least one assessment tended to decrease with age.
- All ethnic minorities (excluding white minorities) registered on Doctaly Assist are less likely to have undertaken at least one assessment compared to white patients.

1.6 What is patient experience of Doctaly Assist?

- Patient insights were gathered via qualitative interviews with OHL patients with asthma and COPD.
- Participants' acceptance of remote monitoring was influenced by whether their medical condition was stable, and whether they understood how it could relieve pressure on primary care services. Some participants had not completed an annual review for their respiratory condition in several years, suggesting Doctaly Assist had been successful in reaching patients who typically have low engagement.
- Participants agreed that the text-based invitation method to the service was acceptable. Initial perceptions of the service varied from very positive to mixed. Motivators to register included: potential benefits for LTC care, contributing to easing pressure on the NHS, efficient route to regular care and treatment, and familiarity with the WhatsApp platform. Because insights were gathered from people using Doctaly Assist, there were no notable barriers to uptake.
- Interview participants reported positive experiences of care through Doctaly Assist, echoing the results of the OHL patient survey, with more than two thirds of respondents either very satisfied or satisfied with their experience of using the platform.
- However, a minority of patients interviewed reported mixed or negative experiences due to a number of issues, such as:
 - problems with obtaining newly prescribed medication due to the lack of interoperability between the Doctaly Assist platform and EMIS (although the platform is now fully integrated in some GP practices, with more to follow)
 - lack of clarity around the healthcare professional's identity
 - lack of medical equipment to carry out full assessments
 - technological issues and lack of technical support
- Other issues mentioned included poor pathway integration for multiple conditions; having to complete a pre-assessment before being able to engage with a healthcare professional; and occasional lack of responsiveness from the healthcare professionals via the platform. There were also some misconceptions around what the service did, suggesting that even patients who engaged well did not always fully understand how the service works.

¹ A clinical assessment corresponds to a LTC annual review. However, additional clinical assessments might be needed for an annual review to be considered as complete. For instance, follow-up assessments might be needed to check on outcomes of an annual review, such as medication change.

- A number of areas for improvement were identified by patients, namely raising awareness of the platform through far reaching and also targeted communications, more 'user-friendly' information as part of the onboarding process, having the option to directly engage with a Doctaly healthcare professional, and better signposting to technological support.

1.7 What is staff experience of Doctaly Assist?

- Staff insights were gathered via nine interviews. Some of the staff interviewed were involved in the implementation of the service, and others were involved in delivering clinical care to patients through the Doctaly Assist platform.

Views on implementation and delivery

- Reflecting on what helped and hindered implementation and delivery, staff identified a number of enablers including:
 - the previous successful perception of the COVID-19 version of Doctaly Assist in treating patients
 - staff and patient acceptability of the platform, and
 - having a hub-led model - its perceived advantages comprised a reduction of GP practices' workloads, working with a centrally run team highly familiar with the platform, and consistency in how the service is delivered.
- Staff also identified a number of challenges, some directly attributable to the learning curve common to any new service, such as lack of awareness of the service, issues with information being disseminated effectively to frontline staff, as well as resourcing and recruitment challenges. They also found others linked to the technology itself; e.g. the lack of integration between the Doctaly Assist platform and EMIS, and lack of an agile dashboard.

Clinical staff experience of working and treating patients with Doctaly Assist

- Clinical staff reported positive experiences of using the Doctaly Assist platform and praised its functionalities, such as the way it displays information about patients and its canned messages², as well as its administrative support team.
- They also noted benefits of the platform allowing them to work remotely and the positive impact this had on work life balance, including being able to work from anywhere, being able to manage their own workload, and how remote assessments tend to be less physically and mentally taxing than face-to-face appointments.
- Views around efficiency and productivity were mixed, with salaried OHL staff reporting more positive experiences of treating patients with asthma and COPD than locum GPs:
 - Some of the locum staff interviewed noted that remote assessments could take longer than face to face ones, and that they could feel disjointed due to lack of responsiveness from some patients.
 - Salaried staff (who included nurses) reported more positive experiences which they attributed to (1) familiarity with completing face to face LTCs annual reviews as part of their clinical role (which meant they felt equipped to carry out remote ones too), and (2) working on the platform on a weekly basis rather than sporadically.

² Canned responses are predetermined responses to common questions. Doctaly Assist uses canned responses to send template responses providing common instructions or advice to patients.

- Overall, staff believed remote monitoring and Doctaly Assist could be especially beneficial for people whose GP practices have found it hard to engage with, as well as patients who have a good understanding of their condition.

Benefits and limitations identified by staff and patients



For patients: popularity of WhatsApp platform
For staff: Intuitive/ minimum training required
For staff: administrative team support
For staff: canned messages(time-saving)
Established relationship with OHL

Doctaly Assist



For patients: Lack of open questions in pre -assessment questionnaire
For patients: canned messages (leading to lack of clarity over they speak to a clinician or bot)
Poor pathway integration for multiple conditions
Lack of integration with EMIS*
No agile dashboard

For patients: convenience and flexibility
For patients: help with self management
For patients: quick and easy access to care
For staff: work life balance benefits
Ability to engage 'serial non-reviewers'

Remote monitoring



For patients without medical equipment: inability to complete full assessments
For staff: mixed views about efficiency
For staff working on shifts: lack of closure due to not completing assessments
Challenges planning demand and resources

Centrally run team, and consistency in delivery
Helps with resourcing
Reduction of workloads for GP practices

Hub model



For patients: Lack of continuity of care (compared to practice-led model)
Occasional duplication of work

**at the time of reporting, integration with EMIS was underway*

1.8 Conclusions

- This evaluation shows that overall patients with long term conditions who have registered to the platform find using Doctaly Assist acceptable and will engage with the platform to complete remote assessments successfully. It also shows that the platform has managed to reach some patients with typically low engagement.
- Having a hub-led model and a centralised team was considered as beneficial, helping with resourcing, and the reduction of workloads for GP practices.
- While the data collected highlighted some clear benefits of remote monitoring solutions from patients' and staff perspectives (such as convenience and flexibility, and ease of use), staff views around efficiency and productivity were more mixed.
- This evaluation was not able to quantify the impact of Doctaly Assist has had on healthcare utilisation and further evidence is needed to determine whether it has significantly increased the take up of annual reviews, delivered any savings for individual GP practices or across Lewisham as a whole, and its impact on health inequalities.

1.9 Recommendations

The following recommendations, derived from the insights gathered as part of this evaluation, should be considered:

Further evidence is needed to understand the full impact of Doctaly Assist, and of remotely monitoring LTCs

Further evaluation should take place with a focus on patient outcomes and health economics:

- A comprehensive economic evaluation would be needed to understand the cost-effectiveness of the Doctaly Assist platform for LTCs.
- The evaluation should consider the take up of annual reviews by remote monitoring users compared to non-users. This should include reviewing patients using Doctaly Assist over time and whether the platform has improved uptake by this cohort as well as a comparison of annual review completion by Doctaly users and non-users.
- As part of this, potential collaboration with SEL analytics teams should be explored for future evaluative activities.

A full equalities impact assessment should be undertaken to determine (1) the impact of remote monitoring of LTCs on health inequalities, and (2) explore further the reasons why take-up is lower among ethnic minority groups (as uncovered by the quantitative data analysis undertaken as part of this evaluation). Ethnicity data recording in UK health systems has been highlighted as being inconsistent, so it would be recommended to re-obtain/update ethnicity from patients as part of this. The assessment should also focus on how older patients and patients with specific communication needs might or might not engage with the platform. Finally, the assessment should look at the profile and experiences of patients who are supported through remote telephone consultations and who do not have access to smart phones or WhatsApp.

In addition to the OHL patient experience survey, there should be mechanisms in place to collect feedback from non-users, including:

- Patients who do not register to the service upon receiving the invite, by systematically asking those opting out of the service their reasons for doing so.
- Patients who register to the service but do not complete an assessment.

In addition to this, it is recommended to determine the number and profile of patients registering to the service after one message, and those registering after receiving a second or third follow-up prompt message.

Improving staff and patient experience

The training of clinicians on remote monitoring solutions should include guidance around how to communicate effectively and empathetically with patients. Thinking about the Doctaly Assist platform specifically, this should include some advice around the use of free text to establish rapport with patients (so they are clear they are not communicating with a bot) and to increase their engagement and interest. Training should also include considerations on the use of canned messages³; while they can be helpful and save clinician time, over relying on them can have a detrimental impact on patient engagement.

³ Canned responses are predetermined responses to common questions. Doctaly Assist uses canned responses to send template responses providing common instructions or advice to patients.

Communications with patients should be a key priority going forward and considered at every stage of their remote monitoring journey:

- **Before inviting patients** - by raising awareness of how the service works, i.e. that it is offered by their GP practice using a third party supplier, via a mix of channels to reach a wider audience. This is especially important to reassure patients who might have concerns about digital fraud.
- **Throughout the onboarding process** - by setting out clearly the rationale behind the service, by reassuring patients around potential concerns around data and privacy.
- **Following the registration process** - by following up with patients who have registered but not yet completed an assessment to manage their review journey preferences.
- **During an assessment** - with clinicians communicating efficiently and empathetically with patients so their engagement is maximised.
- **After an assessment** - so patients are clear where to seek help from if needed.

Striking the right tone and balance of too much versus not enough information can be challenging. Testing messages and communication materials with patient representatives could help achieve the right balance.

Technological considerations

Interoperability between remote monitoring solutions and patient administration systems should be a key consideration when procuring such solutions. Integration between provider systems (such as EMIS) and specialist applications is key to delivering efficiencies.

Clinicians working with and patients using remote monitoring solutions should have regular opportunities to give feedback on their overall experiences, as well as their features and functionalities. Feedback mechanisms should be designed to encourage ongoing engagement from both groups.

Some pre-assessment closed-ended questions should be complemented by free text boxes, so patients get the opportunity to describe their conditions or symptoms in greater details.

Ensuring the successful implementation of remote monitoring solution to treat LTCs

When staffing remote monitoring services aimed at patients with LTCs, the following staff should be prioritised whenever possible:

- **Salaried staff**, to avoid over-reliance on locum staff whose understanding of the service and how to treat patients remotely might be more limited.
- **Clinical staff used to carry out face to face LTCs annual reviews** as part of their day-to-day role (i.e. nurses instead of GPs).

Appropriate communication strategies need to be put in place to ensure primary care staff are aware of remote monitoring programmes and that information is effectively disseminated to all GP practice staff to avoid any confusion or work duplication.

Hub led model, with a centralised team should be considered as they have some benefits including reducing workloads for GP practices. However, it is important for patients to be clear about who they are assessed by (i.e. healthcare professionals but not from the GP practices).

The use of evidence-based project management tools specifically developed to support the effective and efficient implementation of technology in health can help identify barriers to implementation and delivery and should be considered when setting up remote monitoring programmes. The implementation of health and social care interventions involving technologies including remote monitoring solutions are typically complex. In addition,

at a time when the NHS faces multiple pressures, implementing a new service can be especially challenging. Building on Greenhalgh et al's non adoption, abandonment, scale-up, spread, and sustainability (NASSS) framework and a complexity assessment tool (CAT) ⁴, the NASSS-CAT tools⁵ comprise of range practical tools for understanding, guiding, monitoring, and researching technology projects in health care or social care settings. They can therefore help support implementation and evaluation of remote monitoring programmes.

⁴ Greenhalgh T, Maylor H, Shaw S, Wherton J, Papoutsi C, Betton V, Nelissen N, Gremyr A, Rushforth A, Koshkouei M, Taylor J, The NASSS-CAT Tools for Understanding, Guiding, Monitoring, and Researching Technology Implementation Projects in Health and Social Care: Protocol for an Evaluation Study in Real-World Settings, JMIR Res Protoc 2020;9(5):e16861

⁵ The NASSS-CAT tools are available here: https://www.phc.ox.ac.uk/research/resources/copy_of_nasss-cat-tools

2. Background

The NHS Long Term Plan (LTP)⁶ outlines an ambition to use digital technology to support remote monitoring of conditions across care settings. As part of that work, NHS England is focusing on supporting accelerated spread and scale of remote monitoring.

Within South East London, the Integrated Care System (ICS) secured funding in 2021/2022 to support the expansion of remote monitoring for a range of long term conditions (LTCs) - asthma, chronic obstructive pulmonary disease (COPD) and diabetes - building on its established remote monitoring pathways for hypertension. Following the previous successful perception of the COVID-19 version of Doctaly Assist in treating COVID-19 patients, the platform was chosen as the remote monitoring solution across the ICS.

This evaluation was commissioned by the London Digital team at NHS England, which oversees the delivery of efficient digital transformation across London to enhance population health, ensuring alignment with local clinically driven and patient led requirements, and to support at scale transformation of London's Integrated Care Systems (ICSs) alongside Primary Care Networks (PCNs). It is part of a wider pan London evaluation looking at the use of remote monitoring in supporting the management of long term conditions (LTCs) across a number of clinical pathways.

The evaluation focuses on the use of the Doctaly Assist platform by both patients with asthma and chronic obstructive pulmonary disease (COPD), and staff from One Health Lewisham (the GP federation for Lewisham).

2.1 Overview of Doctaly Assist in Lewisham

In the midst of the pandemic, Doctaly, a healthtech company, were commissioned by South East London Clinical Commissioning Group (now South East London Integrated Care Board) to create and run a Virtual Ward to assess, monitor and manage patients with COVID-19 in the community.

Launched in April 2020, Doctaly Assist originally focused on monitoring patients with COVID-19 from home. Since then, the service has expanded and has been used across a number of GP practices in Lewisham and South East London for other areas such as monitoring patients with LTCs. Patients with asthma were invited to use the platform from November 2021 and patients with COPD from December 2021.

2.1.1 How does Doctaly Assist work?

Doctaly Assist facilitates the collection of patient information and the completion of annual chronic condition reviews through WhatsApp (a widely used free cross-platform messaging service)⁷. It then securely forwards patient summaries to corresponding GPs to apply appropriate clinical codes in patients' electronic records. Clinicians can assess and interact with patients remotely. Patients without access to smart phones or WhatsApp can be supported through remote telephone consultations.

Doctaly Assist is comprised of several interdependent processes that facilitate the remote management of patients. Data collection is automated by a "chatbot", with the questions and answer "flow" changing according to the patient responses. The results provided by the patient are reviewed by clinicians (doctors, specialist nurses etc), who are trained to read and interpret the data and ask additional questions if required (or even suggest action such

⁶ <https://www.longtermplan.nhs.uk/online-version/>

⁷ According to OFCOM, 88% of UK online smartphone-using adults visited WhatsApp in September 2021: https://www.ofcom.org.uk/__data/assets/pdf_file/0023/238361/online-nation-2022-report.pdf

as advising patients to visit their GP or attend hospital).

2.1.2 Remote Monitoring Service for OHL Patients

One Health Lewisham is responsible for managing the service, and uses Doctaly Assist to assist GPs in reducing their workload.

Workforce

Team make-up: as part of managing the service, OHL is responsible for staffing it. At the time of writing the report, the clinical team working on the platform included: two GP fellows, one prescribing nurse and one non-prescribing nurse, all of them working part time but equating to two whole time equivalent (WTE) staff. Although the service often used to rely on a number of locum GPs to respond to demand, it currently works with a few who are all familiar with the service and with carrying out remote assessments. Administrative support is provided by two part-time administrators.

Roles and responsibilities:

- Clinical staff are tasked with carrying out assessments and annual reviews. It is expected that they spend around ten minutes carrying out an asthma or a COPD review (compared to more than 20 minutes face to face). As part of this, they can prescribe new medication to patients, and book face to face appointments with patients' GP practices. They can also refer patients to other services and provide self-management advice.
- Administrative staff provide support to clinical staff and patients when needed, and input information from Doctaly into patients' electronic records (i.e. the platform did not use to be integrated with EMIS; however at the time of writing this report, it has recently become integrated with nine practices fully onboarded and rollout for the other practices underway). They also provide support to patients without a smart phone to do the automated Doctaly data collection over a phone call. Finally, they review the Doctaly virtual ward daily and escalate high risk patients to the clinicians on rota.

Training: a session of around one hour is provided by the Doctaly team to clinicians and administrators to help them navigate the platform and answer any questions they might have.

Patient eligibility criteria

The Doctaly asthma and COPD platforms onboard patients with the following criteria:

- On the asthma/COPD registers
- Not completed an annual/ QOF review in the last 12 months
- Not declined to data sharing, and being contacted via SMS messaging
- 18+ years for patients with COPD, and 17+ years for patients with asthma

OHL patient care process for patients with asthma and COPD

There are a number of steps involved in the care process of OHL patients with asthma and COPD, from being invited to use Doctaly Assist to completing an assessment. Those are detailed below:

Step 1: Eligible patients are identified through an EMIS search carried out by OHL. Other referral routes currently exist where patients can self-refer, but instances of this happening are rare.

Step 2: OHL send the list of identified patients to GP practices. They will inform patients, via batch messaging, about the possibility of receiving WhatsApp messages from Doctaly. This process of pre-communication from GPs is key as it can help reduce patients' concerns about it being a scam and potentially increase willingness to engage

with the service. In addition, practices advertise the Doctaly service on their web page as a reference point for patients.

Step 3: Doctaly message patients via WhatsApp. Following this, it will onboard consenting patients. If patients fail to respond to Doctaly WhatsApp messages, three follow-up prompt messages are sent from Doctaly at intervals of 24 hours, one week and two weeks. Failure to respond to these prompts leads to patients being called by the OHL administrative team. If patients do not respond to this, they will be discharged back to their GP practice.

Step 4: Patients are asked to complete a patient Doctaly flow, or pre-assessment questions on their long-term condition via the Doctaly WhatsApp chatbot. Each assessment flow starts with 'red flag' questions. If they answer 'yes' to one of those, patients are automatically instructed to seek emergency care, or contact their GP practice. Throughout the flow, a series of triage questions are also used to ensure that patients are assigned to the most appropriate 'risk' group. Patients are then automatically categorised as High, Medium or Low risk depending on their responses.

Step 5: OHL administrative staff review the information provided by patients, which is visible on the virtual ward, and assign patients to clinicians on rota. High risks patients are escalated.

Step 6: OHL clinicians review patient information via the virtual ward and action any necessary changes. As part of doing this, they can ask patients for additional information through WhatsApp. They also have access to a browser-based video consultation capability, should they wish to interact with patients that way. Finally, clinicians can look for patients' medical history in EMIS community⁸. If a medication change is needed, OHL clinicians will action medication change in EMIS community.

Step 7: Doctaly send patient summaries to GP practices upon review/ assessment completion. If high importance updates are made (e.g. medication changes or tests recommended), OHL administrative staff will send an email to the GP practice on the same day.

Patients are reviewed on the Doctaly platform until their asthma or COPD is controlled. Then, assessments are set to a 12-month cycle. The patient will then be automatically reminded in 12 months to complete a new assessment. If their condition remains uncontrolled after three Doctaly Assist assessments, they will be referred back to face-to-face care.

Discharge process

Both patients and OHL staff can initiate discharge from Doctaly Assist:

- Patients have the opportunity to self-discharge at any point of their remote monitoring pathway. This would result in them reverting back to the non-digital pathway for their LTC reviews.
- OHL administrative staff can manually discharge patients who do not respond after being sent three messages and one call.

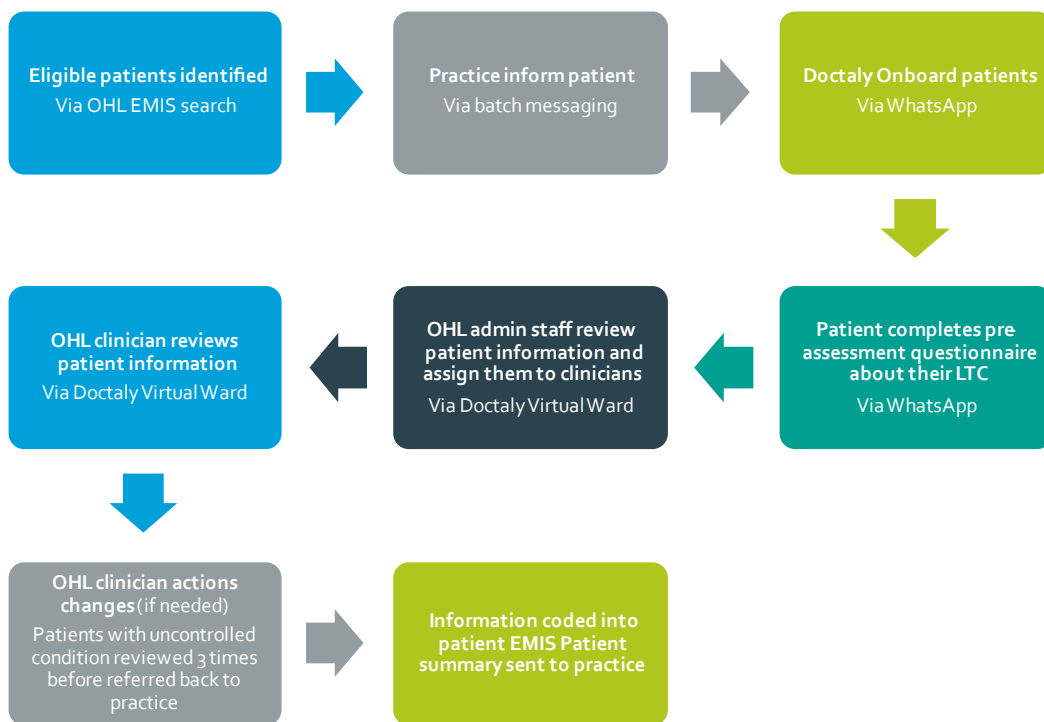
Once patients are discharged back to their GP practice, a patient summary is forwarded by Doctaly. Practices are informed about patients required for follow-up.

GP practice pathway

GPs maintain responsibility for ensuring that LTC reviews are completed. To help them with this, they receive a monthly dashboard of patients reviewed on the Doctaly Assist platform. As discussed above, discharged patient summaries of unresponsive patients also inform them of patients to review outside of the OHL pathway.

⁸ EMIS Health, formerly known as Egton Medical Information Systems, supplies electronic patient record systems and software used in primary care, acute care and community pharmacy in the United Kingdom.

Figure 1 OHL pathway for LTC patients



2.2 Overview of One Health Lewisham

One Health Lewisham (OHL) is a GP Federation established in 2016 that has grown out of four neighbourhood GP federations in the North, Centre, South East and South West of the South London Borough of Lewisham. It comprises membership of 33 GP practices, serving a population of approximately 350,000 people.

2.2.1 Patient demographics

The largest age group of OHL patients is 30-39 and 51% of patients are female. There are higher levels of deprivation in Lewisham compared to the England average with an overall deprivation score of 26.7 (England has a score of 21.7)⁹. Self-reported unemployment is also much higher than the England average (10.2% in Lewisham compared to 5.5% in England)¹⁰. A lower percentage of patients report that they have a long-standing health condition in Lewisham (44.3%) compared to the proportion in England (51.1%), although it is higher than the London percentage (42.6%)¹¹.

2.2.2 GP Practice survey data

Table 1 shows select data from the 2021 GP practice survey¹². Scores for OHL practices are slightly lower than the England averages, particularly in regard to telephone access (only 61.5% are satisfied under OHL compared to 67.6% in England overall).

⁹ <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019>

¹⁰ 2021 GP practice survey <http://www.gp-patient.co.uk/>

¹¹ GP Patient survey 2021 <http://www.gp-patient.co.uk/>

¹² 2021 GP practice survey <http://www.gp-patient.co.uk/> - View Lewisham data in Fingertips here: OHID General Practice Data

Table 1 : 2021 GP practice survey data

2021	Lewisham – OHL practices	England
% who have a positive experience of their GP practice	80.4	83.0
% satisfied with phone access	61.5	67.6
% satisfied with practice appointment times	59.8	62.7
% reporting good overall experience of making an appointment	66.8	70.6

Comparison data from the 2021 and 2022 GP practice survey shows an increase in use of online services within Lewisham, with 39.1% of respondents not using any online services in 2021 reducing to 28.6% in 2022.

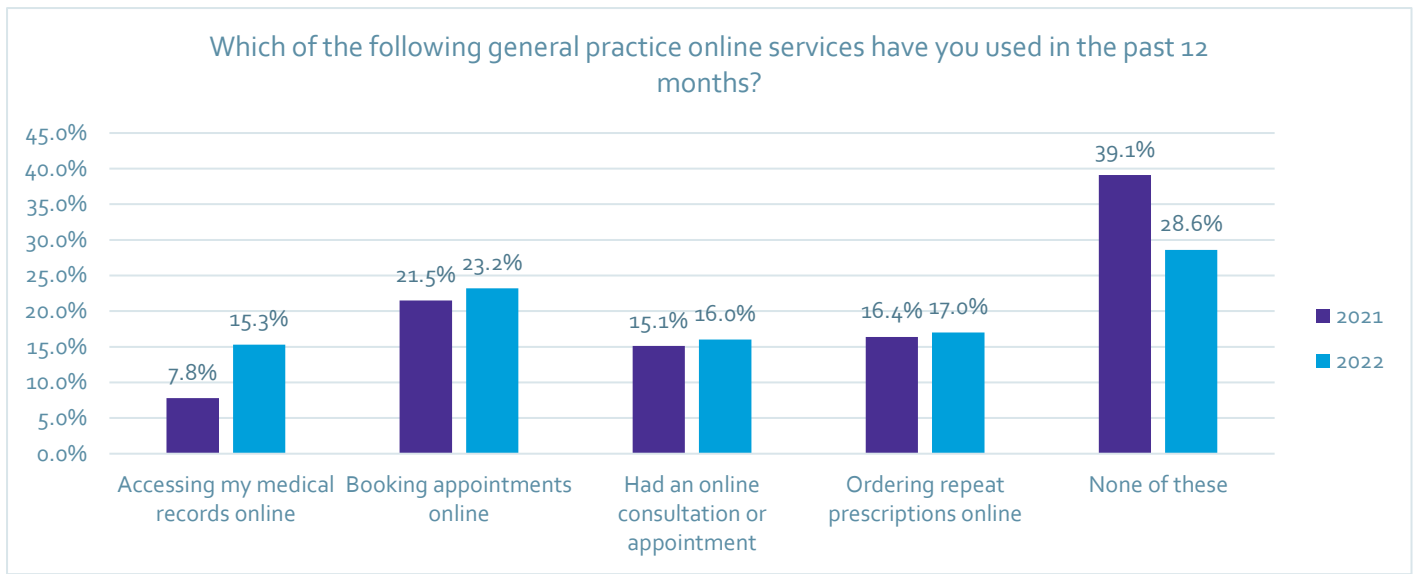


Figure 2: GP Practice Survey Question 3 results for Lewisham practices (OHL)³³2021 compared to 2022

2.2.3 Asthma and COPD Quality and Outcomes Framework (QOF) prevalence and achievement 2021

Prevalence of asthma and COPD are lower among OHL patients compared to overall prevalence among patients in England. It is however higher than the prevalence among patients in the London region (a prevalence of 5.4 with asthma compared to 4.7 in London, and a prevalence of 1.3 with COPD compared to 1.1 in London). QOF achievement of patients having had an annual review in the past 12 months is slightly higher for OHL practices compared to England (see Table 2). Estimated smoking prevalence for patients of OHL is 17.5; higher than the England estimate of 15.9 and the London estimate of 15.4.

practice profile data set <https://fingertips.phe.org.uk/profile/general-practice/data#page/0/gid/2000005/pat/165/par/E38000098/ati/7/are/G85698/yr/1/cid/4/tbm/1/page-options/tre-ao-1-car-do-0>

³³ Data obtained from SEL BI team – aggregated from [Survey and Reports \(gp-patient.co.uk\)](https://www.gp-patient.co.uk)

Table 2: OHL Asthma and COPD prevalence and QOF achievement¹⁴

QOF 2020/21	Lewisham – OHL practices	London – NHS region	England
Asthma QOF prevalence (6+ years)	5.4	4.7	6.4
AST007 - Patients with Asthma: review in the last 12 months (denominator incl. PCAs)	33.3	35.9	31.2
COPD QOF prevalence (all ages)	1.3	1.1	1.9
COPD010 - Patients with COPD who had a review in the last 12 months (denominator incl. PCAs)	47.9	44.5	45.0
Estimated smoking prevalence	17.5	15.4	15.9

¹⁴ OHID General Practice Data profiles respiratory data set https://fingertips.phe.org.uk/profile/general-practice/data#page/0/gid/2000006/pat/165/par/E38000098/ati/7/are/G85698/iid/93790/age/314/sex/4/cat/-1/ctp/-1/yr/1/cid/4/tbm/1/page-options/tre-ao-1_car-do-0

3. Evaluation purpose and design

3.1 Evaluation scope and purpose

The purpose of the evaluation was to understand the role of remote monitoring in long term conditions (LTCs), looking at the Doctaly Assist platform and the hub model delivered by the One Health Lewisham GP Federation. More specifically, the evaluation has focused on the implementation and delivery of remote monitoring within respiratory pathways (i.e., asthma, and COPD).

The evaluation has aimed to answer the following questions:

- Who are the patients that are using Doctaly Assist?
- How did these patients engage with the service?
- What is the patient experience of the service? Do patients find using the technology acceptable?
- What is the staff experience of the service?

In doing so, the evaluation has sought to:

- Determine the uptake of the remote monitoring platform, and describe its patients' characteristics
- Explore the practical and clinical acceptability of the platform looking at patient satisfaction and experience
- Describe conditions for implementation and delivery of the remote monitoring platform, and identify barriers and enablers
- Explore staff experience, including acceptability of the platform, and experience of treating patients remotely

Unfortunately, due to issues around data access, this evaluation has not been able to look at patient outcomes, and how the service impacts on healthcare utilisation.

3.2 Design

This evaluation has used a mixed-methods approach where both quantitative and qualitative data has been collected and analysed to address the evaluation objectives. It included:

- An analysis of data collected by Doctaly Assist.
- Qualitative fieldwork with OHL clinical and administrative staff, and locum GPs who had worked with the service.
- Qualitative fieldwork with patients who were using or had used the Doctaly Assist platform.

3.2.1 Quantitative data collection

A range of quantitative data relating to the profile and activity of OHL asthma and COP patients invited to register to the platform was provided by Doctaly Assist in order to undertake this evaluation.

Data was received for the time period of October 2021 to August 2022. This was patient level, non-identifiable data for all patients invited to use the Doctaly Assist service which included:

- Demographics (sex, age and ethnicity)
- Condition (asthma or COPD)
- Month of invitation to use Doctaly Assist

- Registration status to Doctaly (Registered, Opted out, Failed to Respond)
- Dates of registration or deregistration
- The number of completed assessments

Data on the smoking status of each patient was also supplied. However, the smoking status was self-reported and the data was largely missing. It was therefore not used for this evaluation. The ethnicity data was extracted from EMIS coding and mapped to six categories by the HIN analytics team. Ethnicity data recording in UK health systems has been highlighted as being inconsistent, outdated and incomplete¹⁵ and the mapping done for this evaluation may not be entirely accurate.

The primary care data, including number of asthma and COPD annual reviews completed before and after the introduction of Doctaly Assist was not available for this evaluation due to data governance issues. This means this evaluation has not been able to assess whether the take up of annual reviews for asthma and COPD was higher for Doctaly users than for non-users.

3.2.2 Qualitative data collection

Qualitative interviews were carried out with nine staff - some of whom were involved in the implementation of the service, and others involved in delivering clinical care to patients through the Doctaly Assist platform. Among staff interviewed, the evaluation team spoke to two salaried clinical staff, and four locum GPs who had carried out assessments remotely for COPD or patients with asthma. It is important to note that the fieldwork was conducted over February and March 2022, at a time when some of the participants had limited experience of carrying out remote assessments.

Interviews with clinical staff focused on their views of the Doctaly Assist platform, their experience of treating patients with asthma or COPD through it, its impact on their day-to-day role, and perspectives on patient care. Interviews with programme and administrative staff focused on the implementation and delivery of the service, including barriers, enablers and lessons.

A total of 12 patient interviews were carried out:

- Seven participants had engaged with the platform for asthma management, and five to manage COPD.
- The length of use of the Doctaly Assist platform ranged from approximately six months to one week.
- Patients were invited to take part in an interview on the back of a patient experience survey administered by OHL.

Participants took part in an in-depth interview lasting between 30-45 minutes, which covered their experiences of being invited and of being monitored via Doctaly Assist (including completing remote assessments) as well as their perspectives on the outcomes achieved as a result of using the service.

¹⁵ <https://www.nuffieldtrust.org.uk/research/ethnicity-coding-in-english-health-service-datasets>

4. Findings

4.1 Overview of Doctaly Assist activity

4.1.1 Doctaly Assist data

Doctaly Assist service data from October 2021 to August 2022 was extracted for those patients invited to use the service for asthma and COPD.

Across the two services, a total of 13,640 were invited (10,864 for asthma and 2,776 for COPD) in accordance with the eligibility criteria set out in Section 2.1.3. The overall invite list is anticipated to broadly be the registers for the two diseases.

A total of 4,861 patients (35.6% of those invited) completed the registration process. The remaining 8,779 either failed to respond and register (61.2%) or they opted out at the end of the registration process (3.2%). A larger proportion of patients with COPD invited failed to respond and register (65.1%) compared to the patients with asthma invited (60.2%). Table 4 provides a detailed breakdown.

Table 3: Breakdown of patients invited to use the Doctaly Assist service by condition and response type

	Asthma		COPD		Total	
	#	%	#	%	#	%
Failed to respond	6,537	60.2%	1,806	65.1%	8,343	61.2%
Registered	3,994	36.8%	867	31.2%	4,861	35.6%
Opted-out	333	3.1%	103	3.7%	436	3.2%
TOTAL INVITED	10,864	100.0%	2,776	100.0%	13,640	100.0%

Please note that 360 of the patients who registered had deregistered by the time of data extraction. Two hundred and sixteen within 28 days, and 144 after 28 days. This may be due to the patient or a clinician deciding the service is not appropriate for them at this time (Table 5).

Table 4: Breakdown of registered and deregistered patients invited to use the Doctaly Assist service by condition

	Asthma		COPD		Total	
	#	%	#	%	#	%
Registered	3,994	36.8%	867	31.2%	4,861	35.6%
Registered – (still at Sept 22)	3,741	34.4%	760	27.4%	4,501	33.0%
Deregistered post registration	253	2.3%	107	3.9%	360	2.6%
<i>after 28 days</i>	114	1.0%	30	1.1%	144	1.1%
<i>within 28 days</i>	139	1.3%	77	2.8%	216	1.6%

4.2 Who are the Doctaly Assist patients monitored for COPD and asthma as a subset of all invited patients

4.2.1 Demographics of patients with asthma

Table 6 shows the sex, age band and ethnicity breakdown of all invited patients with asthma. This same demographic profile is then illustrated for those patients who registered with Doctaly Assist. The final column shows the patients which registered with Doctaly Assist as a percentage of all invited patients, in each demographic area. Table 6 shows the average age of Doctaly Assist, non-Doctaly Assist and all invited users.

In summary, these tables show:

- The majority of all invited patients with asthma were female (60.9%) and of all patients registering for Doctaly Assist, 65% were female. There was therefore a proportionately higher uptake of Doctaly Assist by females. This is further demonstrated by the fact that 39.2% of females invited to use Doctaly Assist registered for the service, compared to 32.9% of invited males.
- Uptake was proportionately lower in the 18-24 year old age group as well as 55-85+ age groups. The average age of those registering was 48.7 compared to an average age of 49.1 of those not registering.
- Registration for Doctaly Assist was proportionately lower in all ethnic minority groups (excluding white minorities), with 31.6% of those invited registering for Doctaly Assist, compared to 42.1% of white patients with asthma invited registering for the service (please note that the white ethnicity group includes 'white other'). Proportional take up of the service was lower in all ethnic minority groups. Whilst 38.2% of all invited patients were ethnic minorities, only 32.8% registered for the service. By comparison, white patients comprised 52.8% of those invited but 60.5% of those registering with Doctaly Assist.

Table 5: Demographic profile of patients with asthma

	All invited patients to Doctaly Assist		Patients registered with Doctaly Assist		Registered patients as % of all invited patients
	Number	%	Number	%	%
TOTAL	10863		3994		36.8%
Sex					
Female	6621	61.0%	2598	65.0%	39.2%
Male	4243	39.1%	1396	35.0%	32.9%
Age band					
18-24	756	7.0%	202	5.1%	26.7%
25-34	2008	18.5%	780	19.5%	38.8%
35-44	1974	18.2%	774	19.4%	39.2%
45-54	1881	17.3%	759	19.0%	40.4%
55-64	2061	19.0%	755	18.9%	36.6%
65-74	1149	10.6%	395	9.9%	34.4%
75-84	712	6.6%	222	5.6%	31.2%
85+	279	2.6%	96	2.4%	34.4%
Unknown	44	0.4%	11	0.3%	25.0%
Ethnicity					
Asian or Asian British	844	7.8%	253	6.3%	30.0%
Black or black British	2558	23.5%	783	19.6%	30.6%
Mixed	506	4.7%	184	4.6%	36.4%
Other	240	2.2%	89	2.2%	37.1%
White (incl. white other)	5738	52.8%	2416	60.5%	42.1%
Not stated/Unknown	978	9.0%	269	6.7%	27.5%

Table 6: Age data of patients with asthma

	Asthma		
	Registered	Not registered	All invited patients
Mean Age	48.7	49.1	48.9
StdDevp of age	16.7	18.0	17.5

4.2.2 Demographics of patients with COPD

The demographic profile of patients with COPD invited to use the service was different to the profile of patients with asthma invited to use it. There was a more even split across the sexes, and the average age was much higher, i.e. 68 as opposed to 48 (see

Table 8 for more details on the average ages of Doctaly Assist, non-Doctaly Assist and all invited patients). Table 8 provides the demographic breakdown of Doctaly Assist invitees as well as those registered) and shows that:

- Registration to Doctaly Assist of invited patients with COPD was higher in females than males (54.6% of those registered for Doctaly Assist were female whilst 47.7% of all invited patients were female). This is further demonstrated by 35.7% of invited females registered for the service as opposed to 27.1% of males.
- Registration was proportionately higher in the 45-74 year old age groups compared to the total invited population in those age groups.
- As with asthma Doctaly Assist registration, take up was higher among white patients, with 33.6% of those invited registering compared to 22.3% of ethnic minorities (excluding white minorities) registering for the service. Proportional take up of the service was lower in all ethnic minority groups (excluding white minorities).

Table 7: Demographic profile of patients with COPD

	All invited patients to Doctaly Assist		Patients registered with Doctaly Assist		Registered patients as % of all invited patients
	Number	%	Number	%	%
TOTAL	2776		867		31.2%
Sex					
Female	1324	47.7%	473	54.6%	35.7%
Male	1452	52.3%	394	45.4%	27.1%
Age band					
18-24	<10	<1%	<10	<1%	-
25-34	15	0.5%	<10	<1%	-
35-44	46	1.7%	12	1.4%	26.1%
45-54	255	9.2%	83	9.6%	32.5%
55-64	739	26.6%	245	28.3%	33.2%
65-74	847	30.5%	283	32.6%	33.4%
75-84	611	22.0%	172	19.8%	28.2%
85+	230	8.3%	62	7.2%	27.0%
Unknown	30	1.1%	4	0.5%	13.3%
Ethnicity					
Asian or Asian British	111	4.0%	21	2.4%	18.9%
Black or black British	281	10.1%	65	7.5%	23.1%
Mixed	59	2.1%	14	1.6%	23.7%
Other	43	1.5%	10	1.2%	23.3%
White (incl. white other)	2137	77.0%	719	82.9%	33.6%
Not stated/Unknown	145	5.2%	38	4.4%	26.2%

Table 8: Age data of patients with COPD

	COPD		
	Registered	Not registered	Total
Mean Age	67.4	68.3	68.0
StdDevp of age	11.4	11.8	11.7

4.3 Assessments taken place on Doctaly Assist

In total, 5,032 assessments were completed in the evaluation timeframe (October 2021 – September 2022) via Doctaly Assist (

Table 9). A completed assessment is the equivalent of an annual review. Additional assessments (beyond one) may be follow-up assessments to check on outcomes of the annual review, such as medication changes, and this can also be done on Doctaly Assist.

Of those registered, the majority (72.7%) had at least one completed assessment by the time of analysis. A higher proportion of registered patients with asthma had at least one assessment (73.8%) compared to registered patients with COPD (67.4%). Having had at least one assessment is a measure of engagement with the platform.

Table 9: Number of assessments completed for COPD and patients with asthma

	Asthma		COPD		Total	
Number of patients invited to use Doctaly Assist	6537		1806		13640	
Number of patients registered with Doctaly Assist	3994		867		4861	
Number of assessments made via Doctaly Assist	4204		828		5032	
Average number of assessments (all registered) Mean/Median	1.05 / 1		0.96 / 1		1.04 / 1	
Average number of assessments (those having at least one) Mean/Median	1.43 / 1		1.42 / 1		1.42 / 1	
Of those registered						
Have had at least one assessment	#	%	#	%	#	%
No	1046	26.2%	283	32.6%	1329	27.3%
Yes	2948	73.8%	584	67.4%	3532	72.7%
Total	3994	100.0%	867	100.0%	4861	100.0%

This means of all patients invited, the following proportions had at least one assessment:

- **27.1%** of patients with asthma
- **21.0%** of patients with COPD
- **25.9%** of all invited patients on the two pathways

4.3.1 Assessments (at least one) – demographics - Asthma

Table 10 explores the demographics of those patients who registered for the asthma Doctaly Assist service and provides the same breakdown for the patients who had at least one assessment. The final column looks at the percentage of patients who had at least one assessment as a percentage of all patients who registered for the service. It shows that:

- Relatively similar proportions of males and females had at least one assessment.
- The 18-24 year old age group as well as all age groups over 55 had proportionately lower likelihoods of having undertaken at least one assessment, getting markedly less likely as age groups get older.

- All ethnic minorities (excluding white minorities) registered on Doctaly Assist were less likely to have undertaken at least one assessment compared to white patients (68.6% compared to 77.6%).

Table 10: Registered asthma Doctaly Assist patients by assessment status

	All registered Doctaly Assist patients		Patients having at least one assessment		Assessed patients as % of all registered patients
	Number	%	Number	%	%
TOTAL	3994		2948		73.8%
Sex					
Female	2598	65.0%	1914	64.9%	73.7%
Male	1396	35.0%	1034	35.1%	74.1%
Age band					
18-24	202	5.1%	142	4.8%	70.3%
25-34	780	19.5%	600	20.4%	76.9%
35-44	774	19.4%	601	20.4%	77.6%
45-54	759	19.0%	564	19.1%	74.3%
55-64	755	18.9%	554	18.8%	73.4%
65-74	395	9.9%	279	9.5%	70.6%
75-84	222	5.6%	145	4.9%	65.3%
85+	96	2.4%	55	1.9%	57.3%
Unknown	11	0.3%	<10	<1%	-
Ethnicity					
Asian or Asian British	253	6.3%	166	5.6%	65.6%
Black or black British	783	19.6%	545	18.5%	69.6%
Mixed	184	4.6%	133	4.5%	72.3%
Other	89	2.2%	54	1.8%	60.7%
White (incl. white other)	2416	60.5%	1875	63.6%	77.6%
Not stated/Unknown	269	6.7%	175	5.9%	65.1%

4.3.2 Assessments (at least one) – demographics - COPD

Table 11 explores the demographics of those patients who registered for the COPD Doctaly Assist service and provides the same breakdown for the patients who have had at least one assessment. The final column looks at the percentage of patients who had at least one assessment as a percentage of all patients who registered for the

service. It must be noted that there were smaller numbers available to explore this area given the lower numbers of people with COPD overall and slightly lower registration rates.

It shows that:

- Female patients were slightly less likely to have had at least one assessment compared to males, with 64.5% of females registering having had at least one assessment compared to 70.8% of males.
- As with the asthma findings, as the age banding gets older, a smaller proportion of those registered had at least one assessment. For example, 79.5% of registered Doctaly Assist patients in the 45-54 age band had at least one assessment, compared to only 38.7% of those aged 85+.
- Numbers for individual ethnic minorities were relatively small, i.e. 110 (12.7%) of those registered on the COPD Doctaly Assist service. It was therefore difficult to make comparisons between different groups. However, all ethnic minorities (excluding white minorities) registered on Doctaly Assist were less likely to have undertaken at least one assessment compared to white patients (60.0% compared to 69.0%).

Table 11: Registered COPD Doctaly Assist patients by assessment status

	All registered Doctaly Assist patients		Patients having at least one assessment		Assessed patients as % of all registered patients
	Number	%	Number	%	%
TOTAL	867		584		67.4%
Sex					
Female	473	54.6%	305	52.2%	64.5%
Male	394	45.4%	279	47.8%	70.8%
Age band					
18-24	<10	<1%	<10	<1%	-
25-34	<10	<1%	<10	<1%	-
35-44	12	1.4%	<10	<1%	-
45-54	83	9.6%	66	11.3%	79.5%
55-64	245	28.3%	175	30.0%	71.4%
65-74	283	32.6%	198	33.9%	70.0%
75-84	172	19.8%	107	18.3%	62.2%
85+	62	7.2%	24	4.1%	38.7%
Unknown	4	0.5%	2	0.3%	50.0%
Ethnicity					
Asian or Asian British	21	2.4%	16	2.7%	76.2%
Black or black British	65	7.5%	29	5.0%	44.6%
Mixed	14	1.6%	12	2.1%	85.7%
Other	10	1.2%	<10	<2%	-
White (incl. white other)	719	82.9%	496	84.9%	69.0%
Not stated/Unknown	38	4.4%	22	3.8%	57.9%

4.4 What is the patient experience of Doctaly Assist?

This section describes patients' experiences of using Doctaly Assist. It is mainly based on qualitative interviews carried out as part of this evaluation, and is complemented by the findings of an SMS survey sent out by OHL on a

rolling basis to collect the views of patients who completed an assessment through the platform between April and July 2022.

Qualitative interviews with OHL patients explored their experiences of being invited and of being monitored via Doctaly Assist (including completing remote assessments) as well as their perspectives on the outcomes achieved as a result of using the service. A total of 12 interviews were carried out with patients- five with COPD and seven with asthma (see chapter 2). Out of those patients, 10 were using Doctaly Assist at the time of the fieldwork, and two had self-discharged due to issues encountered with the platform.

It is important to note that:

- Due to the self-selection method of recruitment (as detailed in chapter 2), it is possible that the patients who took part in the evaluation represent those with either strongly positive or negative views of Doctaly Assist, rather than those with more neutral views.
- Given the size of the sample, no subgroup analysis has been conducted to identify differences in experience or perception between patients with COPD and those with asthma. The insights gathered as part of this evaluation demonstrate a number of common themes raised by both cohorts of patients.

4.4.1 Overall acceptability of remote monitoring

Patients were overall accepting of remote monitoring generally, and of the Doctaly Assist platform more specifically. Acceptability of remote monitoring over face-to-face appointments was compounded by a number of factors including:

- Stability of one's condition (patients with stable conditions were more likely to be comfortable with being assessed remotely).
- Convenience (as discussed below).
- Understanding of its role in relieving pressure on primary care services.

Out of the participants interviewed, some had not completed an annual review for their respiratory condition in several years, or had done so on an irregular basis since diagnosis; this suggests Doctaly Assist has had a degree of success in engaging those cohorts of patients, including people whose GP practices have found it hard to engage with. Even those favouring face-to-face appointments and annual reviews tended to be accepting of remote monitoring, particularly if they believed their condition to be stable and well-managed. A few patients within this sub-group noted that if they experienced a destabilisation of their condition, they would not hesitate to revert to face to face consultations.

"I don't really have any emotion over it. When it comes, I will do it, on the assumption that I'm feeling fine, then I'll be less anxious. If my asthma starts to play up again, then I'd be more likely to say to Doctaly Assist that I'd like to see someone. But whilst my asthma is OK, I don't really have any anxiety or emotion to using that mode to do the review."

Thinking about their care going forward, some participants with less stable and/or more severe conditions mentioned they would be satisfied with remote annual reviews, as long as face-to-face reviews were carried out every two to three years as they were seen to allow more thorough and open conversations.

"Having the annual review at least you get someone physically doing your test, and taking saturations, and having the chance to discuss anything if you need to. Whereas the questions on Doctaly Assist, there's no box at the end going 'is there anything you want to ask?' It's very automated, you know... and you say 'yes or no'."

Reflecting on the above, participants were also keen to point out that Doctaly Assist might not be suitable for newly diagnosed patients, as the increased responsibility in self-management required a level of comfort and knowledge that may not be appropriate for this group.

"I think if you were newly diagnosed, you would probably need to have had the opportunity maybe to discuss some of the questions with somebody before. So if one of my children was diagnosed asthmatic, I wouldn't want to be doing this until they've had some face to face. Because there are those little conversational bits of where you say to somebody, 'Well, if I feel like this four times a week, is that regular or not?'"

4.4.2 Invitation and onboarding process

Participants were asked to describe the process of being invited to use Doctaly Assist to monitor their respiratory condition. Overall, they agreed that the text-based invitation method was acceptable. They also felt it helped create a smooth journey towards onboarding to WhatsApp-based Doctaly Assist. Initial perceptions of the service, upon receiving the invite, varied from very positive to mixed. Motivators to register on to the Doctaly Assist platform included:

- **Understanding of its rationale**, and what it would offer the patient in terms of benefits.
- **Contributing to easing pressure on NHS services**, and allowing those more in need to access in-person care.

"[The NHS] is under immense pressure. So much as I like the [GPs and nurses] I see, it's going to be better for that because I'm not there so then they can give their attention to someone who's much sicker (...) It's a better use of National Health Service resources."

- **Convenient/efficient route to regular care and treatment.** This was a notable motivational factor to uptake, particularly in cases where patients perceived their asthma or COPD to be stable and personally manageable.
- **Familiarity with the WhatsApp platform**, allowing minimal change in behaviour and technical knowledge. It was also viewed as a trusted and secure communication platform, and as such suitable for sharing health-related data.

Because insights were gathered from people using (or who had used) Doctaly Assist, there were no notable barriers to uptake. However, a minority of patients with an unstable respiratory condition, had initial concerns about how remote monitoring could replace traditional face to face treatment. As part of this, they wondered how usual condition-monitoring measurements (such as peak flow, blood oxygen saturation, weight) could be obtained remotely where they had no personal access to appropriate equipment.

Participants felt the information given as part of the onboarding process was generally fine. Around half of them thought that the information was 'straightforward' and easy to understand. They were happy to continue the onboarding process as a result of this:

"I can read and if it's nice and succinct then I'm happy with that. When I got the ping [text message] about this, I thought 'yeah, I can do that. That's really good'. Yeah, it was enough to interest me, hook me and get me switched on to Doctaly, and I could see how immediately it would benefit me."

A few felt the information provided was perceived as insufficient to provide a full and comfortable understanding of what the platform was, while others felt it was 'long-winded' and repetitive- suggesting the difficulties in striking the right balance when communicating with patients. A few respondents noted the information could have made clearer who was behind the platform – i.e. who would be monitoring data.

"It tells you in the initial [message] that it's going to be an NHS health professional that will look at your answers, but maybe for some people it might be useful for them to know it's not actually their GP that will be looking at it. It doesn't bother me because it's still NHS professionals."

Linked to the point above, one patient noted lack of clarity on how the platform and consultation approach was going to work, and whether there was going to be an opportunity to offer anything other than 'yes/no' answers. They felt alerting patients to this during onboarding would be useful to provide general context and also to encourage buy-in:

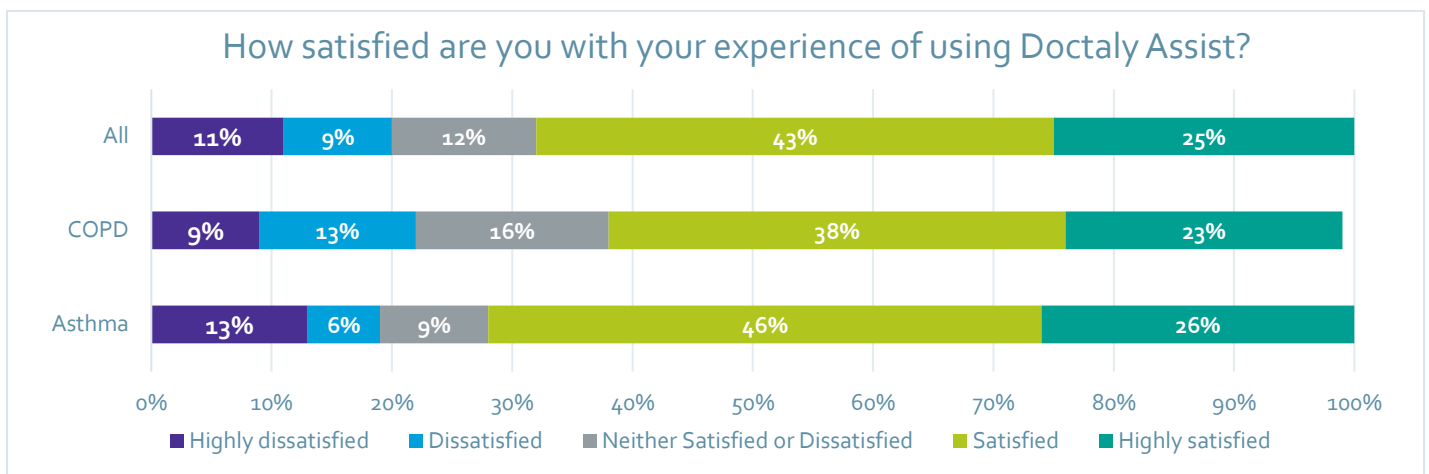
"When I first got the message, I didn't understand how it was going to work (...) But I went along with it, and I did say at first, 'I'm not that struck on this', because they ask you the same question, and it was either a 'yes' or 'no', which I couldn't give, so at the end of that first consultation I wrote a very polite message back saying 'these yes and no replies aren't very good', that's when I got the first message explaining after the first assessment someone will be in touch to help as much as they can... that [process] wasn't explained that well."

Nevertheless, the above did not provide substantive barriers to continuing the onboarding process as more hesitant participants were reassured they could self-discharge and revert to traditional consultation should they wish to.

4.4.3 Experiences of care received through the Doctaly Assist platform

Participants reported overall positive experiences of care through Doctaly Assist, although a minority had more negative or mixed experiences. There was a spectrum of experiences of care reported by patients, from some reporting experiencing an enhanced level of care through the service to a few reporting more negative experiences.

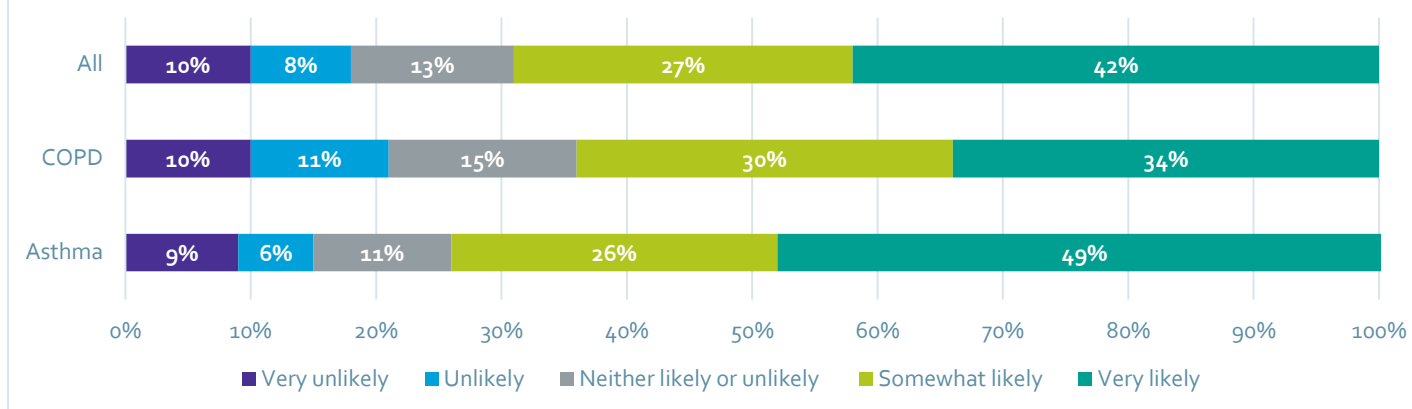
The OHL survey results echo this picture with 68% of respondent either very satisfied or satisfied with their experience of using Doctaly Assist (with 20% either dissatisfied or extremely dissatisfied).



Based on 302 responses (179 patients with asthma and 123 patients with COPD)

In the same way, 69% of respondents would recommend the platform to their friends or family, while less than one in five (18%) would not.

How likely are you to recommend this service to your friends and/or family?



Based on 304 responses (179 patients with asthma and 125 patients with COPD)

4.4.4 Benefits of using Doctaly Assist

Patients identified a number of benefits to remote monitoring and key enablers to using the platform, relating to access to care, overall care experience, and positive health outcomes.

Facilitating access to care: Participants noted how the platform was filling a gap in care brought about by the pandemic.

Flexibility and convenience: participants greatly valued not having to organise the logistics of a face-to-face appointment. For participants with mild and stable conditions, incentives to complete face to face assessments were admittedly low, and remote monitoring provided a welcome alternative.

"I think I'm probably receiving a better service actually (...) I'm not bothered [to have a F2F assessment]. Whereas this way, if it's a problem they'll say 'You really should come and see us', therefore they're more likely to get me there. But I'm not going to turn up for an annual review for something where I'll go 'I've not had a problem all year'."

Echoing staff views on patients for whom remote monitoring worked (i.e. working professionals, and more generally people who might struggle to make the time to attend a face to face GP appointment), participants commented positively that they could complete the assessment in their own time, to fit within their day.

"I always used to organise my asthma reviews for half term when it would be easier to get into the surgery. So it is easier to do it through the phone because I can do it at any point when I've got 5 minutes in the day or I can do it a little bit and then get back to it and do a bit more as well. It's been a really positive experience."

A few participants also noted how the ability afforded to respond to questions in their own time had helped improve the quality of their consultations, by enabling greater reflexivity behind answering questions.

"It gives you time to think. Sometimes when you're with somebody in the room, there's so much going on, or they have their routine of what they do... so in a lot of ways I find it more engaging in that I actually have to think about what's being asked of me. The questions are more detailed as well I think."

Doctaly Assist's features: (as discussed above) participants liked using a familiar app such as WhatsApp. Some also noted the pre-assessment bot questions and the list of options patients could select were clear and felt relevant (although some participants disagreed).

"I felt it gave very clear statements so as the actual diagnostic tool, I thought it was really, really good (...) I felt you'd give and it gave information and it gave a good set of possible answers that you weren't sitting there going, 'Well, it's not weekly, but it's also not daily' (...) I didn't have really any problems choosing an option."

Positive experiences of care: this could mainly be attributed to trust in the healthcare professionals, and satisfaction with level and quality of interactions with them. More specifically, participants felt overall:

- confident in the quality of care they had received using the platform, with some noting how the questions being asked/observations being made did not fully differ from those of face-to-face assessments.

"You know it's pretty similar. The only thing I'm missing is the face-to-face contact."

- safe, with participants remarking how they felt the assessments and care provided thorough the platform was thorough. Some participants recounted feeling reassured by an ability to take an assessment early, or contact a GPP directly, if their condition got worse.

"Hands down I feel safe (...) I felt like it was efficient, and I felt like there were trigger points where if I needed to talk to a clinician that would happen."

- satisfied with the level and nature of interactions with healthcare professionals. A few patients noted how they liked the two-way interaction, and how they could move beyond the binary 'Yes/No' questions to provide a more nuanced view of their condition, and to receive answers to any specific questions they might have.

*"It's quite nice because you can have **that two-way communication with the health professional**. You can add any extra information, which is what I quite like as well. It does say that if you need to speak to anybody in the meantime before your review, you can just text them and they'll get back to you. So I've had a fair amount of contact with them."*

A few participants also enjoyed the informal nature of the language used by some of the healthcare professionals, which brought a sense of familiarity (mirroring how some staff found patients were especially responsive to less formal ways of communication).

"That was like text messaging a friend. Once [the health care professional] came online, I could text them normally. It wasn't a case of you have to use specific words or you have to click on an answer or anything like that. I could just talk normally, and the response was a human response as well."

Positive health outcomes: participants reported positive health outcomes to using Doctaly Assist in relation to:

- **Treatment, including prescription of a new medication.** A few participants noted how Doctaly Assist had provided a much quicker and more efficient route to receiving a new, more effective prescription. However, it is important to note others have experienced significant issues with ordering repeat prescriptions of medications prescribed via the platform (as discussed below).

"I've only had two conversations, and I've been very impressed. I got this first text message, we had this discussion about my problems, and in less than two hours I had this new prescription to pick up. It was brilliant. Then she followed up to check I was happy with that prescription, which I was."

- **Self-management and patient activation.** One patient noted how using the platform made her reflect on her personal health management.

"Doing these background questionnaire, answering all those questions threw up as something that is in the back of my mind (...) It prompted me to go and weigh myself. And then it told me I was overweight, which I think I knew. But since that occasion, I have been monitoring my weight and I've been doing something about that."

Case study - Patient A

Patient A is a 70-year retired woman with COPD. Ever since her initial diagnosis, she has had a number of face-to-face annual reviews. However, throughout the pandemic, she did not receive any consultation about her condition, leaving her uncertain about how to best self-manage:

"That is the sad fact, that because of COVID they're not doing the breathing thing [peak flow measurement], 'cos I did always have a breathing test... so that really hasn't helped with my diagnosis."

She noted how the initial invitation to Doctaly Assist came out of the blue. However, she was willing to give it a try, noting she was used to using WhatsApp, that remote monitoring might help fill a gap in her care, and she was happy to try and help *"the NHS to cope"*.

Whilst her first impression of the platform was that it was too rigid in its questioning approach by only allowing 'yes/no' answers, she quickly realised she could engage more flexibly and have two-way communication with a health care professional, which she really liked.

"I did say at first, 'I'm not that struck on this', because they ask you the same question, and it was either a 'yes' or 'no', which I couldn't give, so at the end of that first consultation I wrote a very polite message back saying 'these yes and no replies aren't very good', that's when I got the first message explaining after the first assessment someone will be in touch to help as much as they can... that [process] wasn't explained that well, but I guess they got to start somewhere haven't they, asking questions etc."

After completing the pre-assessment questionnaire, Patient A completed a remote consultation and was promptly prescribed a new inhaler, which she felt helped stabilise her condition.

"We had this discussion about my problems... [The Doctaly healthcare professional] explained "This is how it works". So we had a brilliant conversation, through messaging. And in less than two hours I had this new prescription to pick up, I had a new medicine that was like a miracle cure for me. It was brilliant. Then she followed up to check I was happy with that prescription, which I was."

Overall, the patient felt confident in the platform and the care received, noting she would be happy to carry on using it going forward.

"I felt like they've listened to everything I've been saying. They really were listening. I was very impressed with what I dealt with so far. Next time I was going to ask their advice on going to a chest clinic. I'm relying on Doctaly instead of going to the GP basically. I feel very confident about that, very confident."

4.4.5 Challenges and barriers to using Doctaly Assist

A minority of patients reported mixed experiences of remote monitoring and using the platform, indicating a preference for face-to-face care. While only two participants reported overall negative experiences (which led them to self-discharge), several others reported encountering some issues. However, it is important to note that such issues (1) did not put them off using the service, and (2) have been acted upon by the Doctaly Assist team since the fieldwork was conducted.

Reported issues included:

- **Problems with obtaining newly prescribed medication following a Doctaly Assist consultation**, due to the lack of interoperability between the Doctaly Assist platform and EMIS (used by OHL practices). This was the most commonly reported issue, raised by several participants. Prescription change following a remote appointment was not always recorded into EMIS. This caused confusion for patients - ultimately detracting from the efficiency and convenience of the platform – who could be unclear about whether they should contact their GP practice or the Doctaly Assist service to help resolve such issues. While this did not constitute a barrier to use the service, it could lead to unnecessary bureaucracy and duplication as well as patients' confusion. At the time of writing this report, the integration between Doctaly and EMIS had recently happened, with nine practices already fully integrated.

Case study - Patient B

Following a consultation through the Doctaly Assist platform, Patient B was prescribed two new inhalers. However, he quickly realised this new prescription change had not been added to this patient records. This left him confused and frustrated:

"They gave me two new inhalers last month, but they're not on my prescription for the GP. The GPs got them down for something I had ages ago, but they [Doctaly Assist] sent them down to the chemist near me, near my GP, but it doesn't actually go onto my prescription. So when I'm ordering my other medications, the inhalers aren't on there. It should go to the GP surely to be added to my [records]? 'Cos right now I'm going to run out of the two [inhalers] they gave me last month."

On top of this, he was unclear about who he could get help from, as Doctaly Assist did not allow direct contact with healthcare professionals.

"I don't think I can ask that on Doctaly Assist, I don't think there's a box to say, I need two more to be sent. I have tried, I said I need two inhalers, and it just goes wrong."

He noted that if such issues were to continue, he might self-discharge from the platform:

"The medication thing is a big thing actually, because how do I now reorder these two new inhalers? If that carries on, that would probably annoy me. I have tried. And the thing is if they're [Doctaly Assist clinicians] not talking to the GP and saying 'Forget what you've given her, we've given her this'... and I phoned up and they said 'Oh no, it has to come from the COPD assessment [on Doctaly Assist].'"

- **Uncertainty and lack of clarity around the healthcare professional's identity.** For a few patients, there was a lack of clarity on who was reviewing the data being provided and making subsequent clinical decisions (although this did not constitute a significant barrier to uptake).

"Because I'm so used to seeing the same doctors and nurses, it would have been nice to know the names of the healthcare professionals behind the screen. I guess I'm a bit more old-fashioned and that's not really important, it's just the care you get that's important. but you know, sometimes I did wonder who I'm talking to."

- **Lack of medical equipment, preventing patients to be able to carry out full assessments:** a few participants reported not being able to take and provide specific readings, such as peak flow and oxygen saturation, due to lack of equipment (linked to lack of affordability).

"Every month they ask me about what my sats are, and my weight, and I don't know because I haven't got a machine here. So that, I think, they should either supply it or, a few days before we just go to the GP to get it done by the nurse or something. I'd probably buy my own, but at the moment my finances are limited because I'm not working."

- **Technological issues and lack of technical support.** Although most participants reported smooth experiences of using Doctaly Assist, one participant discussed how he suffered significant technical issues and ended up self-discharging: his account was listed as 'inactive' after completing a remote assessment, which meant he was unable to pick up his new medication.
- **Poor pathway integration for multiple conditions:** a patient, with both COPD and asthma, explained that while he found it very easy to use the platform, he received confusing communication from Doctaly Assist, as he was simultaneously asked about his COPD condition, and his asthma check. This had led to him self-discharging within one week of signing-up to the service.
- **Having to complete a pre-assessment before being able to engage with a healthcare professional.** Although participants understood the rationale for this, and most were happy to do so, one participant noted slightly struggling responding to some of the pre-assessment questions requiring yes/no answers. Another participant complained about the repetitive nature of the questions.

"The same questions come through every month, so they get boring. Surely if you know that I stopped smoking 10 years ago, 12 years ago. You don't have to ask me every month because it's not going to change."

- **Slow, inconsistent, and insufficient responsiveness from the healthcare professionals via the platform.** A few patients noted that it could take what they perceived as a long time for the full assessment response to be compiled and communicated. However, this wasn't seen as a significant issue.

Although those were minor and did not represent barriers to carrying on using the platform, there were also some misconceptions around what the service did, suggesting that even patients who engaged well did not always fully understand how the service works. Participant accounts revealed some confusion on whether:

- they communicated with a healthcare professional or a chatbot;
- consultation questions required an immediate response (which could cause a degree of stress when this wasn't possible)
- the time elapsed between signing up and the assessment meant onboarding had failed.

4.4.6 Areas for improvement identified by patients

Participants identified a number of areas for development and improvement they would like the service to implement going forward, such as:

- **Raising awareness of the platform through far reaching and also targeted communications,** so that initial invite to the platform is expected by patients. This could help alleviate fears some might have to opting in, and against initial impressions that the platform only operates through structured, AI-based 'yes/no' questions.
- **More 'user-friendly' information as part of the onboarding process on how the platform is related to their local GP practice,** and who was behind the operation of the platform.
- **Having the option to proactively and directly engage with a Doctaly healthcare professional** (or request for a call back) rather than having to conduct a full assessment prior to being offered an opportunity to connect directly with a healthcare professional- this was viewed to be especially important for those who had experienced issues with repeat prescriptions, or had unanswered questions following an assessment.
- **Better signposting to technological support,** including giving a telephone number for tech support at the end of chats/ messages.

Other areas for improvement mentioned, although less frequently and not necessarily related to the Doctaly platform, included having the option to do video consultations and being able to access one's own patient records

through the service (which was seen as especially important for those managing multiple conditions and with numerous interactions with NHS services).

Recommendation

Communication with patients is critical at every stage of their remote monitoring journey:

- **Before inviting patients** - by raising awareness of the service via a mix of channels to reach a wider audience
- **Throughout the onboarding process** - by setting out clearly the rationale behind the service, by reassuring patients around potential concerns around data and privacy.
- **Following the registration process** - by following up with patients who have registered but not yet completed an assessment to manage their review journey preferences.
- **During an assessment** - with clinicians communicating efficiently and empathetically with patients so their engagement is maximised.
- **After an assessment** - so patients are clear where to seek help from if needed.

4.5 What is staff experience of Doctaly Assist?

Qualitative interviews were carried out with nine staff - some of whom were involved in the implementation of the service, and others involved in delivering clinical care to patients through the Doctaly Assist platform. Interviews with clinical staff focused on their views of the Doctaly Assist platform, their experience of treating patients with asthma or COPD through it, its impact on their day-to-day role, and perspectives on patient care. Interviews with programme and administrative staff focused on the implementation and delivery of the service, including barriers, enablers and lessons.

4.5.1 Views on implementation and delivery

Because the Doctaly Assist platform was introduced rapidly and at scale in the midst of the pandemic, the service unsurprisingly experienced a number of teething issues. Those were heightened by the lack of administrative resources originally deployed and the high demand from COVID-19 patients. Despite challenging circumstances, there was a shared feeling among the staff interviewed that the COVID version of the platform achieved very positive outcomes (both for clinical staff and patients alike). This, in addition to the establishment of a good and productive relationship between the OHL and Doctaly teams, was one of the key factors considered when the decision was made to expand the use of the platform to treat certain long-term conditions (as discussed above).

Reflecting on what helped and hindered implementation and delivery, staff considered a number of factors- some relating to the wider context of delivering remote care during the pandemic, and some specifically relating to One Health Lewisham, and the technology itself.

In doing so, staff identified a number of enablers including:

The previous successful perception of the COVID-19 version of Doctaly Assist in treating COVID patients in South East London (as discussed above): this ensured the buy-in from staff across Lewisham, the gradual scaling up of the service to treat LTCs, and boosted take-up among OHL's GP practices.

Staff and patient acceptability of the platform: it was felt this was partly because the platform was easy and straightforward to use but also because the pandemic helped with overall acceptance of remote technologies, even

among older patients.

"[Because of COVID] there has been acceptance from patients, especially the elderly generation. (...) I've seen this play out the 20s and 30s patients, they're very happy to, you know, they don't want to come to hospital, or to the GP for repeat prescription. They're very happy with the remote interaction. [For] the elderly or the middle aged [patients], I thought there was going to be a real barrier and probably would still be a barrier. But I think that COVID is accelerated that."

The advantages of running a hub-led model: although there were noted benefits of running a GP-practice led model in terms of continuity of care (i.e. in this model, Doctaly patients are assessed by clinical staff from their own GP practice), the hub model was seen as beneficial for a number of reasons; the main being OHL clinical staff reducing workloads for GP practices without any financial consequences.

"GP practices all need to deal with their urgent daily requirements as well as meeting like their QOFs, and their smear tests, and their job targets. So the fact that we can say, "Hey, we've got clinicians at OHL that we've employed to directly take this workload from you. You're still going to get paid." I think I just, it's just the fact that we can say "We can take a chunk of your QOF workload away from you so that you can concentrate on other things." It's just that the overriding benefit and the fact that they still get payment for it."

Although there were early instances of clinicians raising concerns about the service and how it could exacerbate access barriers for digitally excluded patients, the rationale for the service (i.e. allowing more time for GP practices to focus on face to face care for patients with more complex needs) proved to be compelling and effective at getting their buy-in.

"I just think that the hub model is great (...) It's just the fact that you take it directly takes away from the clinicians. I don't have this trouble where I have to really convince them of the benefits. If I put it, say to them is we're going to take it off you. They're like "OK, go for it".

Other advantages of the hub model identified by participants included:

- having a centrally run team comprised of staff (both clinical and administrative) with an in-depth understanding of the service.
- (linked to the above) having some consistency in how the service was delivered.

However, the OHL team also encountered a number of challenges. While some were directly attributable the usual teething issues and learning curve experiences common to any new service, some were directly linked to the nature of the service and the technology on offer, such as:

Lack of awareness of the service, and issues with information being effectively disseminated to frontline staff:

GP practices were overall positive, with only two practices raising concerns around information governance and data sharing (between themselves and OHL). However, levels of awareness of the service among staff was variable, which could lead to confusion and work duplication. There was a noted need for more targeted communications to frontline staff such as healthcare assistants.

*"An issue is I think in any GP surgeries at **the information tends to go to a person here, but it doesn't trickle down to everyone else.** So for example, I remember a scenario where patient was seen by Doctaly came into the surgery. The health care assistant said [to the patient] "I don't know who sorted out your blood tests. I don't know who you've been talking to". And this man thought it was a scam (...) Eventually they came and asked me. I went explained to him and said "You've been doing Doctaly via WhatsApp?" "Yes". And so I said to the healthcare assistant, "This is where you need to look for it. Here is the information". And she was "Oh, I just didn't know about it". **So it's not necessarily we're not telling the surgery, it is that the surgeries aren't disseminating that info to their staff.**"*

Resourcing and recruitment challenges: because recruiting salaried staff proved challenging (partly due to chronic staff shortages across the NHS), OHL had to rely on locums more than anticipated/ hoped for. This was especially problematic in the early phases of implementation, with locums less accustomed to carrying out remote assessments through the platform, and more likely to do sporadic shift work (as discussed in section 4.6.2). In addition to this, resourcing the service and predicting workloads was difficult as it was not possible to predict patient responses and level of engagement from one day to another.

"The numbers are also very hard to predict because it just depends when the patients decide to reply. Sometimes everybody's replied for some reason and sometimes they haven't and we've got a very small number of patients in the inbox."

In addition to experience accumulated over time, an agile dashboard (showing numbers of patients and workloads in real time) was identified as a way to help with planning and resourcing the service as well as date reporting. Although this has been requested by OHL, this remained outstanding at the time of writing.

Lack of integration between the Doctaly Assist platform and EMIS. This meant OHL had to dedicate additional administrative resources to input information from Doctaly into patients' electronic records. It could also lead to duplication of work, with some occasional instances of GP practices inviting patients for review while they had just been assessed by Doctaly Assist.

4.5.2 Clinical staff experience of working with Doctaly Assist

This section mainly focuses on insights gathered from six clinical staff who have used the Doctaly platform to monitor patients with LTCs; including salaried OHL staff, and locum GPs. It is complemented by the perspectives of some OHL operational staff. It is important to note that the fieldwork with clinical staff was carried out throughout March and April, quite soon after the Doctaly offer was scaled up to include the treatment of patients with asthma and COPD. As such, several participants, especially some of the locum GPs interviewed, only had a limited experience of treating LTCs remotely through Doctaly Assist. It is therefore likely some of the mixed views shared below were heightened by unfamiliarity around using the platform to treat such conditions (as highlighted above).

Interviews with clinical staff focused on their views of the Doctaly Assist platform, their experience of treating patients with asthma or COPD through it, and its impact on their day-to-day role, and perspectives on patient care. Those topics are discussed in turn below.

4.5.3 Views of the platform

Overall, clinical staff reported positive experiences of using the Doctaly platform, which they described as 'straightforward' and 'intuitive'. Practically, this meant they could carry remote assessments out with minimum training. This was a key consideration for locum GPs completing shifts only sporadically, as they did not have to be constantly retrained on how to use the platform:

"I had like 1 hour demo at the beginning and then did a session later and it was fine. It was a bit, you know, or is this right after a certain hour, say when you've got a few sort of patients you keep going and it's fine and actually back then I did leave and did some locum as and when and every time I start again I found it quite easy. So I think the actual system it is very easy to use."

In addition to the platform's ease of use, staff also praised:

- **The way it displays information about patients.** They welcomed how they could easily access information about their demographics, and view previous interactions between a patient and other clinicians.

"You can scroll up, see the patients, previous responses. You can see their demographics. You can put it to another colleague putting in their inbox. They could put into your inbox. You can see who's viewed it. (...) So I think it's really good."

- **Its canned message functionality**, which meant clinicians could not only save time but also communicate more effectively with patients by signposting them quickly to relevant advice and/or services. It was also noted how canned messages had gotten better overtime, and how Doctaly seemed to have incorporated some of the feedback received.
- **Its administrative support team**, with participants describing receiving prompt technical support when needed. This sentiment was echoed by OHL programme staff who noted how the team always prioritised taking the time to train clinicians when required.

A noted downside of the platform was the lack of integration between EMIS and the Doctaly Assist platform, which could lead to duplication of work, and inconsistencies (as highlighted in section 4.6.1). However, as noted in section 4.5, at the time of writing this report, the integration between Doctaly and EMIS was imminent with the new version of the updated version of the platform piloted in three GP practices.

Recommendation

Interoperability between remote monitoring solutions and patient administration systems should be a key consideration when procuring such solutions. Integration between core providing systems and specialist applications is key to delivering efficiencies.

4.5.4 Benefits of remote working

As part of the interviews, clinical staff were asked to reflect on what impact working with the Doctaly Assist platform had on their work life balance, workload, and job satisfaction.

Noted benefits included overall better work life balance, and more specifically:

- **Being able to work from home, or anywhere**, and allowing staff the flexibility to choose where to work from.
"This is a very convenient role because you're remote. So like, as long as I'm working from home and it doesn't necessarily mean I have to work from home, I can work. Let's say, if I work in the morning at GP practice in the afternoon, I can always just log off, go upstairs into one of the clinic rooms that are empty, sit there for about four hours finishing my patients and that's it. And so that's quite helpful I find."
- **Being able to manage one's own time and workload**. This had a number of positive implications, especially for those with caring responsibilities.
"It's not so strict in that, you can go to the toilet, you can go make some food for 5-10 minutes and then make up the time later. You manage your own time."
- **Not being as physically and mentally taxing as face-to-face appointments**. This was perceived as particularly important due to the burnout experienced by some post-pandemic.
"Normally when we're working in surgeries, we're seeing patients and we're hearing patients on the phone. It can be quite mentally draining. And if for me since just say for example January to now, I actually felt quite burnt out, but I've had been working, but I've mainly been doing this work and it's been good because I've been able to work"

and earn some money without having to stop working."

However, participants cautioned against the risk of spending too long online, without any break, doing a four hour shift.

*"I do have to remind myself to take breaks because I am very much like once I'm focused on something, I like to just do it and see the end and the nature of the way the service works is, you just go through it, [then] more come into the inbox. So sometimes I can forget and end up just **staring at a screen for a good few hours**. But I mean that's more on me and my own boundaries I guess."*

There was also a consensus among clinical staff that working exclusively online could lead to deskilling and byroad working, with a mix of face to face and remote work a more viable and sustainable way to work on a long term basis.

*"So for the last three months, I have actually almost gone fully remote, but if I was to do that, then I would lose my other skills. OK. So that's why I say I think I'll always try to do it, but **just as a part time basis**. So I don't lose my other skills. "*

Recommendation

Hybrid modes of working for clinical staff should be considered as they offer clear benefits to clinical staff and could have positive implications in relation to workforce retention.

4.5.5 Experience of treating patients with asthma and COPD remotely

Views around efficiency and productivity were more mixed, with salaried OHL staff reporting more positive experiences of treating patients with asthma and COPD, and carrying out reviews, than locum GPs. When discussing this, participants often contrasted their experiences of carrying out annual reviews for patients with asthma and COPD with treating COVID-19 patients through the platform. They were clear about the rationale of treating COVID-19 patients remotely and reported overwhelmingly positive experiences of doing so, discussing how they found it rewarding to support anxious patients shielding at home and other NHS services. However, they tended to be less enthusiastic about treating patients with asthma and COPD that way.

Less positive experiences were related to what was perceived to be a lack of efficiency, a view more likely to prevail among locum GPs who tended to be less familiar with working through the platform to treat patients with asthma or COPD. While the stated target is for staff to take around 10 minutes to complete an asthma review, and 15 minutes to complete a COPD review, it was noted that it could often take longer, and as such could feel a bit disjointed.

"I've done a full days work of COVID. I can be like today for example or I think I've done 9 to 5 and you know I can say safely I sort of resolved about 100 to 150 cases. [For LTCs] it's kind of like I've touched on about 25 and I haven't even completed them."

A number of reasons were given for this, including:

- **Lack of responsiveness and patient engagement.** Whilst patients with COVID-19 often respond quickly due to the acuity of the illness, LTCs patients do not tend to engage as well. Some participants noted how it could take patients several hours or days to respond to their messages, so they were not always able to complete many reviews within a shift.

"Basically with COVID, they've actually got an acute illness. So they engage with you a bit better because you know they've got COVID-19 and they're acutely unwell. [With LTCs], it's kind of like sometimes they won't

engage because it's just a message on the phone and it's not urgent to them. "

One of the reasons mentioned for this was that messages could come out of the blue for patients, for instance in the middle of a working day. It was also assumed that if a patient was overall well managed, they might not feel as motivated to respond promptly, and/or fully engage. Another reason provided, and echoed by the patients interviewed (see section 4.5), was that patients sometimes tended to think the message came from an AI chatbot, and not a clinician. They were therefore less likely to respond promptly, or at all; highlighting the importance of knowing to communicate with patients in such a format (see below).

When participants engaged well and responded to messages promptly, completing remote assessments and reviews tended to be quick and straightforward.

"So you will message the patient and it really depends when they reply. And so I feel it's a bit more disjointed. Well, that with the LTC reviews, if you're if the patient happens to, you know, reply straight away and you're there at the moment when you can also reply, then it works very well and you can complete a review very quickly."

- **Lack of information collected about the patient as part of the Doctaly bot question completion.** Some clinicians noted how part the Doctaly Assist Bot questions completed by the patients (via WhatsApp or phone with the assistance of OHL admin team), lacked a question around the type of medication used, which meant they had to ask the patients themselves and could lead to more back and forth between both parties. The Doctaly team has corrected this since.
- **Working with both COVID and LTC patients during one shift.** One participant noted how having to assess a mixed caseload of both COVID and LTCs patients within a single shift might not be as efficient as focusing on a single condition (although it is important to note this changed since the fieldwork was carried out, with clinicians focusing on COVID or LTCs during a shift).

*"I'm sure if I was just doing LTC and not doing both, then you know I have more of my undivided attention to get through the reviews. **But sometimes when you're going back and forth between COVID and LTC.** You realize that a patient messaged you, but you've been busy dealing with another case. So I think if I did, if I just did more LTC uninterrupted, I probably be better at it and know how to manage my time better."*

- **Lack of familiarity of carrying out LTCs reviews and assessments.** Some GPs noted they did not carry out annual reviews as part of their day to day role, and felt staff who were familiar doing so might be more efficient completing reviews remotely.

*"In the surgeries, it's mainly the nurses that are doing long time conditions. So the high blood pressure, once I'm happy with. But with asthma, COPD (...) In a lot of surgeries, GPs don't do that anymore. They don't do those reviews, it's to nurses and they're actually a lot better at them. **I'm not used to doing them as well.**"*

All in all, this meant that some of the participants did not find the experience of treating LTC patients as rewarding as they did of COVID-19 patients. They discussed the lack of sense of closure they felt, and not being able to complete what they felt was a satisfying number of reviews within a single shift.

"So for me, I didn't get that satisfaction because I've just, like, asked in a few questions (...) I haven't actually completed a review (...) The satisfaction part of it is not there as much as it is for COVID."

Nevertheless, it is important to mention that there was a notable discrepancy of opinions between locums GPs and salaried staff (including the nurse interviewed as part of this evaluation) who tended to share much more positive experiences of using Doctaly Assist to assess patients with asthma or COPD. While locum GPs were keen to point out the challenges they faced, the salaried staff interviewed liked the flexibility the platform offered.

As part of this, the nurse interviewed was keen to describe how, despite initial hesitancy, the platform worked greatly for her, and how this had positively impacted her productivity, which she found satisfying.

"So it saves time and we can see a lot more people because of that. I find that provided that the systems working so in an average clinic, let's say for long term condition, I would probably see about 12 maximum in an afternoon on this service we could comfortably see about 30."

Reflecting on why the platform worked especially well for her, she advanced the following reasons:

- familiarity with carrying out face to face annual reviews, which she felt equipped her with the skills to carry out remote assessments; and
- frequency of her shifts (i.e. she worked with Doctaly Assist several days a week) which meant she could often follow up on patients and complete the reviews/ assessments she had started.

*"So I think because I do the volume of the long term condition reviews, I generally end up seeing the same [patients] anyway. So I think for people who were **doing like shifts, maybe locums**, or maybe doing less long term conditions (reviews), I can see how continuity might be a concern. But I often just end up seeing the ones. So I don't think I personally find an issue of continuity but I can see how it can be."*

It is important to note that since the fieldwork has been completed, OHL has been able to decrease its reliance on locum GPs, and has increasingly worked with a handful of them who have more in-depth understanding of the ins and out of Doctaly Assist and remote monitoring.

Recommendations

When staffing remote monitoring services aimed at patients with long term conditions, the following staff should be prioritised whenever possible:

- **Salaried staff**, to avoid over-reliance on locum staff whose understanding of the service and how to treat patients remotely might be more limited.
- **Clinical staff used to carry out face-to-face long term conditions annual reviews** as part of their day-to-day role (i.e. nurses instead of GPs).

Clinicians working with remote monitoring solutions should have regular opportunities to give feedback on their overall experiences, as well as on the features and functionalities of solutions. This is something OHL and Doctaly have done successfully.

4.5.6 Views on patient profile and experience

Another noted positive of working on the platform was that staff believed this was good from a patient perspective, especially as people might struggle to get a GP appointment. Although there was widespread consensus that Doctaly Assist was not suitable for all patients (and especially for those with less stable conditions, limited digital confidence and/or understanding of the English language), there was a shared view that it worked especially well for:

- People who might struggle to take the time off work to carry out a face-to-face assessment, and patients GP practices have found it hard to engage with (i.e. those who have not completed an asthma/ COPD review in several years). This was echoed by patient insights.

"Actually for a lot of people, when you look at the surgery notes, they've not had any contact with the surgery in really long time. And actually they will then engage with these. So why do you think it has had an impact."

- Patients with a good understanding of their condition, and who can self-managed well, which staff noted tended to be quite common among people with a long term condition.

"I learned this the hard way as a medical student, you know, when I didn't know so much about medicine, if I'm talking to someone with a long term condition and they know a lot about it often surely have people that don't know much but you know, and they're very comfortable, confident and competent in managing their condition."

An urban and professional cohort of patients such as Lewisham's was also perceived as potentially more receptive to remote monitoring solutions and Doctaly Assist than patients in more rural settings.

Finally, while some participants thought the platform might not be entirely suitable for older patients, others disagreed, believing there could be some misconceptions around their ability to use smart phones and technology (although take-up was lower among patients aged 75+ as discussed in section 4.2).

"I do have a lot of elderly patients who use [Doctaly Assist] and you know, it's really entertaining 'cause that they love it. And you know, they could because a lot of people use WhatsApp anyway, don't they? So I do have patients in their 80s. One chap with his late 90s, he was happy texting away."

While this evaluation does not include the insights from people who didn't engage with the platform, staff advanced a number of potential reasons for lack of engagement, including:

- Not feeling empowered or not taking an active interest in managing one's long-term condition(s)
- Not wanting to engage because of distrust towards the service (including concerns around data storing and sharing). One participant noted how she had to carry out video calls with two patients to show them the service was genuine.
- Not being able to engage due to access barriers (i.e. digital exclusion, lack of digital literacy, or communication barriers including not having English as a first language).

Reflecting on why some registered patients might not want to engage with the service, staff noted that, although canned messages were generally considered helpful and time-saving, they were not a good way to encourage patients to self-manage.

"When we're, like, stopping, stop smoking or lose weight. And the way the messages are written, they tend not to want to comply because again, they haven't seen us, they haven't formed that rapport. It's just a message on a platform. So there is that I can't do motivational interviewing with these patients unfortunately."

Thinking more widely about how to communicate with patients through WhatsApp, one participant noted communicating that way was a skill in itself and the use of positive language and trying to replicate what would be discussed in a face-to-face appointment.

"I think I'm quite careful up in the same way would be in face to face consultations. I'm quite careful to sort of use, you know positive language to try and sort of encourage patients to continue with the reviews and things whereas you know me going to somebody "your pressure is really high" and then saying nothing else and wouldn't work face to face. It doesn't work over text."

Recommendation

The training of clinicians on remote monitoring solutions should include guidance around how to communicate effectively and empathetically with patients.

For the Doctaly Assist platform, this should include some advice around the use of free text to establish rapport with patients (so they are clear they are not communicating with a bot) and to increase their engagement and interest.

5. Conclusions

This evaluation shows that overall patients with long term conditions who have registered to Doctaly Assist find using the platform acceptable and will engage with it to complete remote assessments. Out of the patients who registered to the service, nearly three quarters (72.7%) had completed at least one assessment through the platform. While this evaluation was not able to quantify the impact Doctaly Assist has had on healthcare utilisation in Lewisham, the insights gathered through interviews with staff and patients suggest that the platform managed to reach patients whose GP practices have found it hard to engage with, and provided a welcome alternative for patients struggling to book or attend face-to-face care.

Having a hub-led model and a centralised team was considered as beneficial, helping with resourcing (although planning workloads could be challenging). The reduction of workloads for GP practices was also a key advantage, and critical to their buy-in.

Data collected highlighted some clear benefits of remote monitoring solutions from patient and staff perspectives. Patients liked the convenience and flexibility Doctaly Assist offered and found it overall easy to use due to their familiarity with the WhatsApp platform. Staff also considered the benefits of hybrid modes of working; this could have positive implications in relation to workforce retention. However, staff views around efficiency and productivity were more mixed, with salaried OHL staff reporting more positive experiences of treating LTCs patients through the platform than locum GPs. While patients were overall positive of the care received, a number of issues were reported around ordering repeat prescriptions of medications prescribed via the platform; highlighting the importance of interoperability in Remote Monitoring Programs.

The evaluation findings regarding the use of remote monitoring to treat long term conditions are encouraging. However, further evidence is needed to determine whether it has significantly increased the take up of annual reviews, delivered any savings for individual GP practices and across Lewisham, and has had an impact on health inequalities.

6. Limitations

There are a number of limiting factors that impacted on this evaluation. Some were linked to the data governance issues, and others to being unable to engage certain patient cohorts in the evaluation.

- The primary care data, including number of asthma and COPD annual reviews completed before and after the introduction of Doctaly Assist was not available for this evaluation due to data governance issues. This means this evaluation has not been able to assess whether the take up of annual reviews for asthma and COPD was higher for Doctaly users than for non-users.
- A breadth of staff working for OHL was interviewed. However, this was not intended as an exhaustive process. The views of some individuals who played substantial roles in the programme may not be reflected in the evaluation.
- The qualitative fieldwork with staff was undertaken in the first quarter of 2022 when some of them (and especially the locum GPs interviewed) had a more limited experience of using the platform to assess patients with long term conditions remotely.
- The perspectives on certain cohorts of patients are missing from the evaluation:
 - No data was collected on patients who refused or did not register to Doctaly Assist- the evaluation team was not able to interview this cohort of patients, who make up more than two thirds of the patients with asthma and COPD invited to use the platform. Although this was initially explored with OHL, they were unable to identify patients who could take part in interviews as part of this evaluation (due to work pressures and competing demands). The perspective of this group of patients is therefore missing from this evaluation.
 - No data was collected about patients who registered with Doctaly Assist but did not engage post-registration (and therefore did not complete an assessment through the platform). Their reasons for doing so should be explored further in order to identify and understand any potential behavioural or access barriers to using the platform.
- The purpose of this evaluation was not to undertake an economic analysis. However, this is needed to understand the full financial costs and benefits of implementing and delivering Doctaly Assist (and/or comparable solutions) to remotely monitor patients with long term conditions. A full health economic evaluation would be useful to understand this aspect.

7. Recommendations

The pandemic has accelerated acceptance of remote technologies- both with patients and clinical staff. For the opportunities represented by the introduction of Doctaly Assist to monitor long term conditions (LTCs) in South East London to be fully realised, the following recommendations, derived from the insights gathered as part of this evaluation, should be considered:

Further evidence is needed to understand the full impact of Doctaly Assist, and of remotely monitoring LTCs

Further evaluation should take place with a focus on patient outcomes and health economics:

- A comprehensive economic evaluation would be needed to understand the cost-effectiveness of the Doctaly Assist platform for LTCs.
- The evaluation should consider the take up of annual reviews by remote monitoring users compared to non-users. This should include reviewing patients using Doctaly Assist over time and whether the platform has improved uptake by this cohort as well as a comparison of annual review completion by Doctaly users and non-users.
- As part of this, potential collaboration with SEL analytics teams should be explored for future evaluative activities.

A full equalities impact assessment should be undertaken to determine (1) the impact of remote monitoring of LTCs on health inequalities, and (2) explore further the reasons why take-up is lower among ethnic minority groups (as uncovered by the quantitative data analysis undertaken as part of this evaluation). Ethnicity data recording in UK health systems has been highlighted as being inconsistent, so it would be recommended to re-obtain/update ethnicity from patients as part of this. The assessment should also focus on how older patients and patients with specific communication needs might or might not engage with the platform. Finally, the assessment should look at the profile and experiences of patients who are supported through remote telephone consultations and who do not have access to smart phones or WhatsApp.

In addition to the OHL patient experience survey, there should be mechanisms in place to collect feedback from non-users, including:

- Patients who do not register to the service upon receiving the invite, by systematically asking those opting out of the service their reasons for doing so.
- Patients who register to the service but do not complete an assessment.

In addition to this, it is recommended to determine the number and profile of patients registering to the service after one message, and those registering after receiving a second or third follow-up prompt message.

Improving staff and patient experience

The training of clinicians on remote monitoring solutions should include guidance around how to communicate effectively and empathetically with patients. Thinking about the Doctaly Assist platform specifically, this should include some advice around the use of free text to establish rapport with patients (so they are clear they are not communicating with a bot) and to increase their engagement and interest. Training should also include considerations on the use of canned messages¹⁶; while they can be helpful and save clinician time, over relying on them can have a detrimental impact on patient engagement.

¹⁶ Canned responses are predetermined responses to common questions. Doctaly Assist uses canned responses to send template responses providing common instructions or advice to patients.

Communications with patients should be a key priority going forward and considered at every stage of their remote monitoring journey:

- **Before inviting patients** - by raising awareness of how the service works, i.e. that it is offered by their GP practice using a third party supplier, via a mix of channels to reach a wider audience. This is especially important to reassure patients who might have concerns about digital fraud.
- **Throughout the onboarding process** - by setting out clearly the rationale behind the service, by reassuring patients around potential concerns around data and privacy.
- **Following the registration process** - by following up with patients who have registered but not yet completed an assessment to manage their review journey preferences.
- **During an assessment** - with clinicians communicating efficiently and empathetically with patients so their engagement is maximised.
- **After an assessment** - so patients are clear where to seek help from if needed.

Striking the right tone and balance of too much versus not enough information can be challenging. Testing messages and communication materials with patient representatives could help achieve the right balance.

Technological considerations

Interoperability between remote monitoring solutions and patient administration systems should be a key consideration when procuring such solutions. Integration between provider systems (such as EMIS) and specialist applications is key to delivering efficiencies.

Clinicians working with and patients using remote monitoring solutions should have regular opportunities to give feedback on their overall experiences, as well as their features and functionalities. Feedback mechanisms should be designed to encourage ongoing engagement from both groups.

Some pre-assessment closed-ended questions should be complemented by free text boxes, so patients get the opportunity to describe their conditions or symptoms in greater detail.

Ensuring the successful implementation of remote monitoring solution to treat LTCs

When staffing remote monitoring services aimed at patients with LTCs, the following staff should be prioritised whenever possible:

- **Salaried staff**, to avoid over-reliance on locum staff whose understanding of the service and how to treat patients remotely might be more limited.
- **Clinical staff used to carry out face to face LTCs annual reviews** as part of their day-to-day role (i.e. nurses instead of GPs).

Appropriate communication strategies need to be put in place to ensure primary care staff are aware of remote monitoring programmes and that information is effectively disseminated to all GP practice staff to avoid any confusion or work duplication.

Hub led model, with a centralised team should be considered as they have some benefits including reducing workloads for GP practices. However, it is important for patients to be clear about who they are assessed by (i.e. healthcare professionals but not from the GP practices).

The use of evidence-based project management tools specifically developed to support the effective and efficient implementation of technology in health can help identify barriers to implementation and delivery and should be considered when setting up remote monitoring programmes. The implementation of health and social care interventions involving technologies including remote monitoring solutions are typically complex. In addition,

at a time when the NHS faces multiple pressures, implementing a new service can be especially challenging. Building on Greenhalgh et al's non adoption, abandonment, scale-up, spread, and sustainability (NASSS) framework and a complexity assessment tool (CAT)¹⁷, the NASSS-CAT tools¹⁸ comprise of range practical tools for understanding, guiding, monitoring, and researching technology projects in health care or social care settings. They can therefore help support implementation and evaluation of remote monitoring programmes.

¹⁷ Greenhalgh T, Maylor H, Shaw S, Wherton J, Papoutsi C, Betton V, Nelissen N, Gremyr A, Rushforth A, Koshkouei M, Taylor J, The NASSS-CAT Tools for Understanding, Guiding, Monitoring, and Researching Technology Implementation Projects in Health and Social Care: Protocol for an Evaluation Study in Real-World Settings, JMIR Res Protoc 2020;9(5):e16861

¹⁸ The NASSS-CAT tools are available here: https://www.phc.ox.ac.uk/research/resources/copy_of_nasss-cat-tools