

Delivered in partnership with

*The***AHSN***Network*



# Innovation Collaborative.

Developing virtual wards to  
manage long term conditions  
across the **Midlands**.



**REGIONAL INNOVATION SERIES**  
SUPPORTING DIGITAL TRANSFORMATION

# At a glance

## Project overview



- NHSX funding has supported the rapid expansion of remote monitoring technologies for heart failure, COPD and COVID-19 patients across Leicester, Leicestershire and Rutland.
- Using a new web-based platform, clinical teams can collect and analyse data that helps them remotely monitor patients' health, including through COVID virtual wards.
- The technology also supports clinical assessments via video calls and allows clinicians to message patients directly with further advice and support.

## Implementation highlights



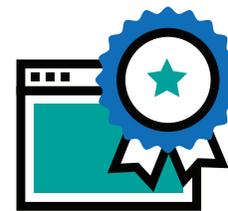
- Over 1,000 patients have been supported across four care pathways since the technology was first implemented in April 2020.
- Robust governance with clear clinical leadership has helped to drive implementation, with ongoing clinical and patient feedback helping to shape and improve the project.
- The project team established 'digital champions' made up of clinicians who acted as the collective voice of frontline staff and helped to guide the project.

## Impact and benefits



- There has been a 50% reduction in readmissions for COVID-19 patients discharged with remote monitoring.
- Qualitative feedback from health professionals suggests there have been further clinical benefits in terms of identifying undiagnosed conditions.
- The technology is also reducing pressure on hospital services, with 288 hospital days saved in just four months.

## Conclusions and next steps



- Good communication between clinician and patient is key to building trust and engagement – the project team is now working to improve consistency of patient communications.
- Work is also underway to broaden the offer by ensuring digital services meet a wider range of needs and help patients to manage their condition effectively after they are discharged.
- The profile and success of this project is helping to position technology at the heart of future plans to improve other care pathways across the region.

## Key numbers

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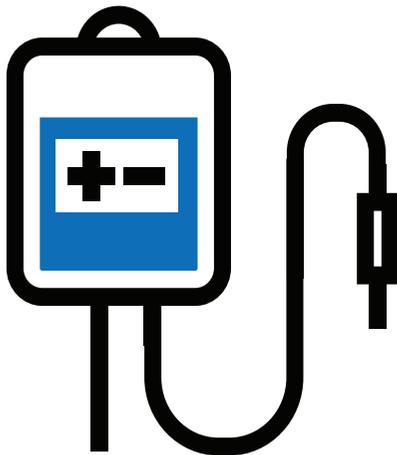
# 1,000+

Patients have been supported across the **four pathways** including

# 725+

Patients with **heart failure** and **COPD**

(1 April 2020 - 20 May 2021)



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In all

# 288

**hospital bed** days were saved between January and end of April 2021.

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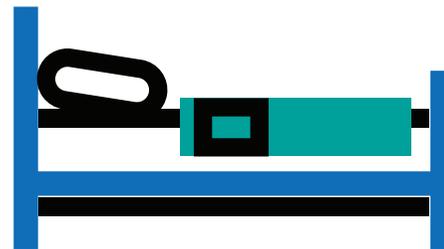
# 218

COVID-19 patients have been discharged with **remote monitoring** at home, with only ten people being readmitted to hospital during their 14-day monitoring period. This equates to a

# 50%

reduction in readmissions rate among patients supported by COVID **virtual ward**.

(2 November 2020 - 20 May 2021)





## Overview

Across Leicester, Leicestershire and Rutland the COVID-19 pandemic has helped to drive forward a rapid expansion of remote monitoring schemes which is allowing clinical teams to keep track of patients with chronic conditions safely and in the comfort of their own home.

Inspired by efforts to establish 'virtual wards' for heart and lung patients after the pandemic began, the region is upscaling and extending the use of technology across four care pathways:

- 1 Phase 1** - Heart failure and COPD patients (first established spring 2020)
- 2 Phase 2** - Digital rehabilitation for heart failure and COPD patients (summer 2020)
- 3 Phase 3** - COVID-19 virtual wards for supporting hospital discharges or 'step down' (autumn 2020)
- 4 Phase 4** - Virtual ward for supported hospital discharges extended to include patients on weaning doses of oxygen. (January 2021)

It forms part of a wider plan to improve digital health services for people with long term conditions, aiming to reduce the pressure on hospital services and improve outcomes by detecting and addressing signs of deteriorating health earlier among recently discharged and chronically ill patients.

# 15-20k

people live with COPD or heart failure across the region

(Source: estimates based on British Heart Foundation and British Lung Foundation data)

# 4,000+

patients treated for COVID-19 who have been discharged from the acute trust to date

(Source: University Hospitals of Leicester NHS Trust)



# 31.6%

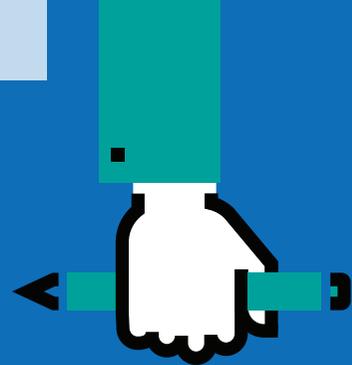
of non-intensive care hospital beds were occupied by patients with COVID-19 at peak across the region

(Source: University Hospitals of Leicester NHS Trust)

## ABOUT THIS SERIES

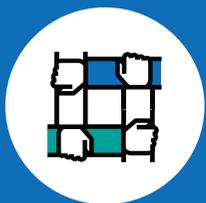
Health and care teams across England are increasingly using new technology to enable more care to be provided at home in response to the COVID-19 pandemic, supported by additional funding from NHSX. NHSX is also working with the AHSN Network to deliver the Innovation Collaborative to enable regional teams to accelerate deployment, and share learning and best practice.

The **Regional Innovation Series** takes an in-depth look at some of the exciting projects underway across the country. It explores the challenges and opportunities presented by new technologies and looks at their impact on people, processes, cultures and the practical tools available to patients, service users and frontline professionals.

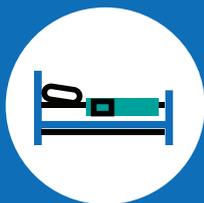


# Project aims and ambitions

At the start of the remote monitoring project, we aimed to achieve the following:



**Protect clinically vulnerable patients** by reducing the need for community clinics and home visits.



**Reduce unplanned hospital admissions involving people with long term conditions**, including those recovering from an admission with COVID-19.



**Provide patients with better information and support** to help them manage their condition and wider health and wellbeing.



**Provide a viable blueprint to expand the use of digital technologies** across the region and other care pathways in the future.

# Who is involved

Three Sustainability and Transformation Partnerships (STPs) are working in partnership across the Midlands to develop, scale and evaluate the use of technology to support patients with long term conditions.

The Leicester, Leicestershire and Rutland project includes the following organisations:

Leicester City Clinical Commissioning Group  
West Leicestershire Clinical Commissioning Group  
East Leicestershire and Rutland Clinical Commissioning Group



East Midlands  
**Academic Health  
Science Network**  
Igniting Innovation



**University Hospitals of Leicester**  
NHS Trust



**Leicestershire Partnership**  
NHS Trust



# What digital technologies are being used?

Across all four pathways, the technology is set up to help patients self-manage their condition at home while giving them support and reassurance that the monitoring equipment will ensure their clinical teams can act swiftly if their health deteriorates.

Patients capture relevant clinical data using monitoring equipment provided by their clinical team according to an agreed management plan. They then upload their patient data using a computer, tablet or smartphone which connects to a web-based remote monitoring platform called CliniTouch Vie.

This data allows health professionals to spot long-term trends in a patient's condition and identify signs of deterioration earlier and before they require hospital admission. The technology enables patients to have an assessment via video call with their health professionals if required and

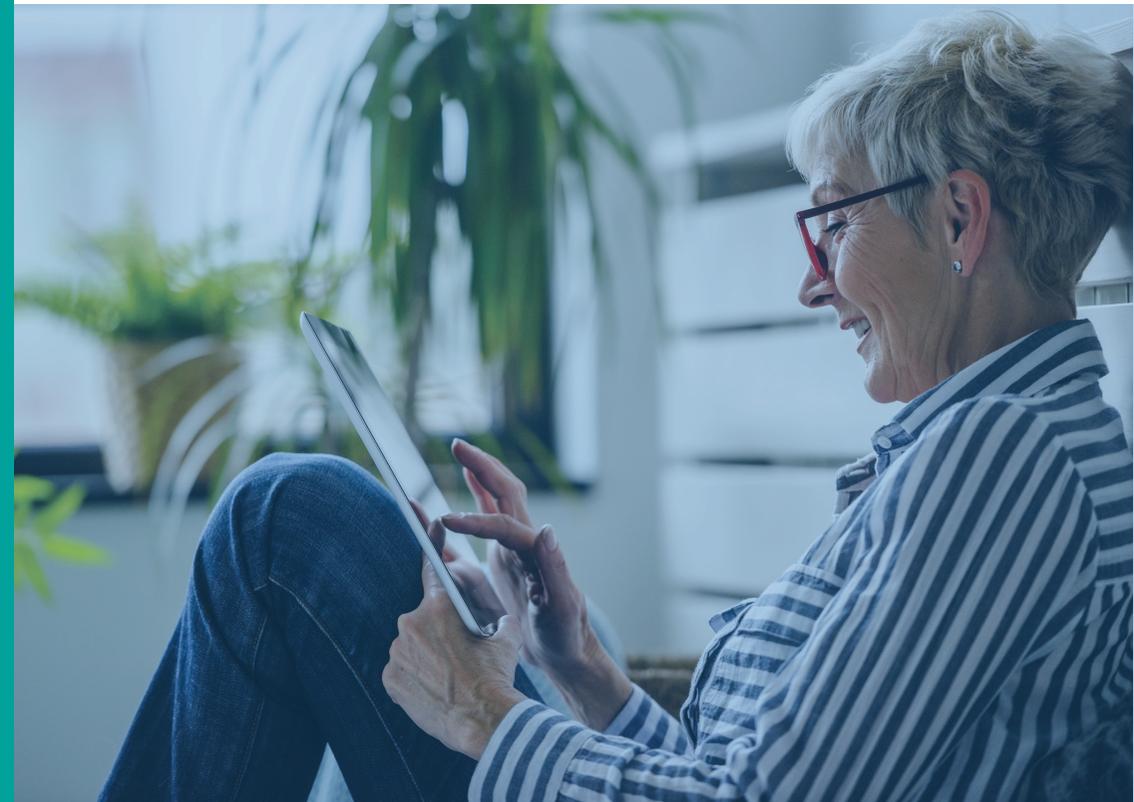
clinicians can send direct messages to their patients. The remote monitoring service is offered to all suitable COVID-19, COPD, heart failure and pulmonary rehabilitation patients and a tablet is provided to any patient who needs one – which they can keep for as long as they need to use the service.

Any changes to a patient's care and condition are documented in Electronic Patient Records (TPP SystemOne). Work is underway to assess interoperability across a wider range of systems.



“Our approach is to always put the patient at the heart of this process. We haven't thought about organisational boundaries but have instead tried to walk in the patient's shoes as they move along the care pathway so we fully understand their perspective. As a result, I hope we've created a model that genuinely supports their needs.”

Zoe Harris, Cardio-Respiratory Service Lead,  
Leicestershire Partnership NHS Trust



# The impact on processes and practices

The model has been built around the needs of the patient, ensuring firstly that they receive the support they need to use the technology, and secondly that this enhances their control over their condition and enriches the dialogue they have with their clinical team.



## Set up

Patients are given **personalised support to set up and use the technologies**, including a patient user guide, a demo session as part of their hospital discharge, telephone and video calls and even socially-distanced, face-to-face training at home if more help is needed.



## Alert

Parameters for individual patients based on their baseline data informs an algorithm in the system which **automatically flags patients who may be at risk or who are deteriorating** using a red, amber, green health status.



## Monitor

A management plan is discussed and agreed with the patient and they submit answers to a **set of questions and take vital measurements relating to their condition**. They upload this data which feeds through in real-time to the platform's central dashboard.



## Intervene

A **multidisciplinary team**, made up of clinicians, nurses and physiotherapists, then work together to diagnose and treat the problem and prevent an unplanned hospital admission wherever possible.

“The pandemic has made us think thoroughly about how we can co-ordinate different teams to improve the way we work with patients, carers and clinical teams. Our main aim is to give our patients the best possible care and reassurance, even more so in these challenging times, and a digital approach can help us achieve that. It also means we can be smart about how we use our resources so that we're able to cope with a bigger case load of potentially deteriorating patients more efficiently.”

**Irene Valero-Sanchez, Consultant Respiratory Physician and Clinical Lead for Integrated Care, University Hospitals of Leicester**



# Key actions and insights

We asked the core project team to highlight the key actions that helped them make progress on implementation and adoption by patients and practitioners. Here are their three reflections on the process.

## Working across boundaries through clear governance structures

"A particular challenge for us was working across different STPs to define accountability and quickly develop a robust but straightforward governance and operational framework that we could then apply and adapt quickly and easily to future complex services. Working as a system rather than a single provider made this happen.

"Within this framework, we were able to bring together the right experts to predict potential issues and manage them head on, such as how we calculate and weight patient data calculations to a defined RAG status for the dashboard or the incorporation of data protection principles.

"We took the time to get these governance principles right and the solid foundations we laid in the very early days are now yielding success. This is demonstrated by the speed in which we've implemented successive projects, sometimes in just as little as one week. We're now in the position where we can expand our care offering at real speed."

**Nisha Patel, Senior Elective Care Services Manager, Leicester, Leicestershire and Rutland CCGs**

## Active listening to put the end user at the heart of the process

"We've never shied away from listening to our clinical team's feedback, who act as our 'critical friends'. For us it's the natural thing to do, as we are all invested in the project's success – and their clinical insights have helped to create a service that really does embody the care principles that we set out to achieve and reflect in this new pathway putting the patient at the centre of all our decision making.

"Throughout the project we've made a conscious point of using the 'You said, we did' model in regular meetings, forums and training sessions to demonstrate that feedback is listened to and incorporated throughout the project stages.

"Within any project there's a lot for colleagues to take on board and adapt to, but our active listening approach has also supported the emergence of 'champions' who've supported colleagues to culturally and practically adopt the various pathway processes."

**Zoe Harris, Cardio-Respiratory Service Lead, Leicestershire Partnership NHS Trust**

## Creating 'front of house' champions for technology

"We realised that creating new, dedicated roles or adapting existing administrative roles within our hospital wards to support the virtual ward process was, and continues to prove to be, critical to the success of the patient onboarding process.

"The unpredictable nature of the pandemic meant we needed a group of colleagues, with the capacity protected within their roles, to talk to patients about the positive impact remote monitoring could have on their physical health and emotional well-being while providing the context and rationale of using technology in this way.

"These colleagues work closely with front-line practitioners and as 'digital champions' they are on hand to offer the opportunity to any patient who wants to be cared for in this way while providing vital administrative support."

**Irene Valero-Sanchez, Consultant Respiratory Physician and Clinical Lead for Integrated Care, University Hospitals of Leicester**



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## It's given reassurance and support during recovery

### Mr Patel's Story

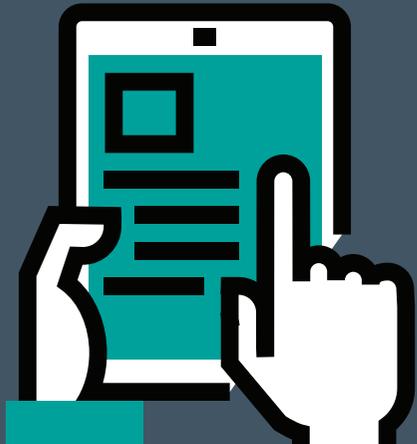
After spending a month in hospital with COVID-19, Mr Patel was able to recover at home using oxygen therapy thanks to the virtual ward app.

Three times a day he would measure his pulse and temperature and send the information via the app for the community team to review.

Using the app and having regular telephone contact with staff gave Mr Patel and his family the reassurance and support they needed during his recovery.

With this help, Mr Patel was able to come off oxygen five days after coming home. His progress was monitored for a month through the virtual ward to ensure he was fully recovered.

”



“

## Without it, we would have felt isolated and adrift

### Bob and Sandy's Story

Sandy's husband Bob is receiving care from a heart failure nurse and started using the digital pathway last summer.

Sandy describes the technology as a "comfort blanket", giving them reassurance that Bob's nurse is checking his observations and will call them if needed.

On one occasion, this data meant Bob's nurse spotted a problem and was able to organise an admission to hospital for immediate treatment.

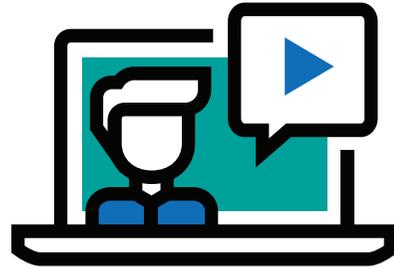
Sally says: "I feel really fortunate to have the technology during the pandemic. Without it we would have felt totally isolated and adrift. It has kept us calm in a difficult time and has been supportive to me in my role as a carer."

”



## How is the technology working in practice?

We asked a selection of health professionals working within these virtual wards to describe the real-world impact of the technology on their patients and their own working practices. Here are their personal experiences.



“ They know someone is keeping an eye on them ”



**Daisy Savage**, a rehabilitation technical instructor, talks about how the technology is reducing demand on other services by lowering hospital readmission rates and giving patients' confidence that their health is being safely monitored from home.

“ You can identify patients about to have an exacerbation or flare up ”



**Mani Moodley**, a respiratory specialist physiotherapist, describes how the technology is improving different aspects of patient care, from helping to identify patients with undiagnosed high blood pressure to allowing observations to be performed remotely via video consultation.

“ It's become embedded as a normal way of delivering care ”



**Joanne Szymkowiak**, a heart failure specialist nurse, and **Tanzeem Adam**, a heart failure and respiratory rehabilitation team leader, reflect on how the technology has changed their ways of working and why it is now an established way of delivering care.

# Key lessons and next steps

Looking ahead, how might this project help to shape the future direction of health services in the region?

We asked members of the project team to outline the four key lessons that are shaping their priorities for the future.



## 1. Engaging patients on their terms

Using digital platforms has strengthened the connection with our patients, and we have always been clear that the technology should enhance the patient-clinician relationship, rather than replace it.

We know there is more we can do to improve how clinical teams explain the technology and the support available to them, doing so on their terms, without prejudging their capacity to embrace technology. This is particularly important for older patients, many of whom are increasingly confident using digital services.



## 2. Diversifying our offer to attract wider uptake

It is important that technology helps to close the health gap rather than widen it, and that means thinking creatively about how to ensure the digital services and support we're offering fully represent the communities we serve.

Leicester, Leicestershire and Rutland has a diverse population, and we're already exploring how we can develop the technology to take account of different individual needs as a way of improving accessibility and reducing health inequalities.

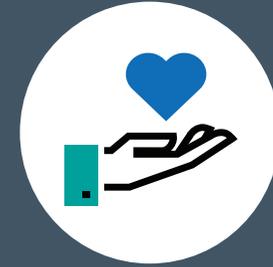


## 3. Extending digital support beyond discharge

Our goal is to embed digital solutions at the centre of how we enable our patients to manage their own health 'digitally by default'.

This includes thinking about how patients can access digital support after discharge to help them self-manage their condition.

We're hoping to develop new solutions, including Facebook groups and new apps, that can help them maintain good habits and hence stay healthier for longer.



## 4. Acting as a stepping stone for wider service change

The progress we've made to date is now unlocking conversations about how similar technology can enhance other care pathways.

As the integrated care system takes shape, further opportunities will emerge and we hope the learnings from our work can be applied at a system level in the future.

We will continue to deliver our current virtual ward models and look to widen our digital offer into other cardiorespiratory pathways.



## For more information about this project supported by NHSX:

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## To find out more about the Innovation Collaborative:

Existing members can access the Innovation Collaborative Digital Health workspace on the FutureNHS platform by visiting [future.nhs.uk/innovationcollaborative](https://future.nhs.uk/innovationcollaborative).

Please e-mail [InnovationCollaborative-manager@future.nhs.uk](mailto:InnovationCollaborative-manager@future.nhs.uk) to request to join.



## Acknowledgments

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