Welcome to the NHS Virtual Wards Conference!

27th February 2025
15Hatfields Conference Centre,
Chadwick Court, London, SE1 8DJ

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Chair Opening Address

Dr Gurnak Singh Dosanjh
GP
LLR ICB

Panel Discussion

Francesca Markland
Senior Programme Manager, Remote Monitoring & Virtual Wards
NHSE London Region Digital Transformation Team

Pippa Macey
Operational Manager UCR and Virtual Ward
Sutton Health and Care

Dr. Matea Deliu
Academic GP, Clinical Lead Primary Care Digital Delivery, Clinical Safety Officer
NHS South East London ICB

Heather Young
Virtual Ward Program Manager
Nottingham University Hospitals

Dan Stendall RN(A)
Head of Nursing System Urgent and Emergency Care LLR – UEC Winter Director Triumvirate, University Hospital Leicester LLR (UHL)

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Case Study

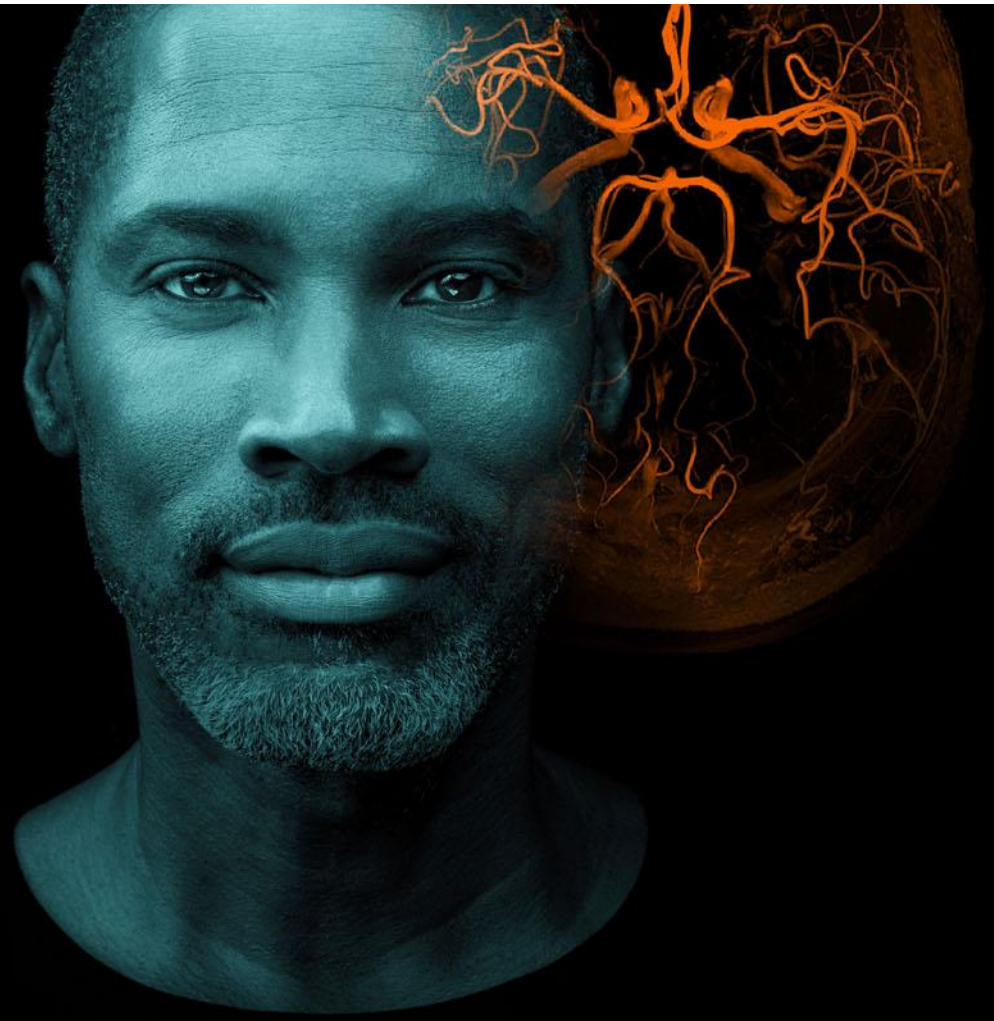
SIEMENS Healthineers

Case Study

James Mobberley
Point of Care Southern Sales Manager
Siemens Healthineers

The epoc NXS portable blood analyser and its use in Virtual Wards

James Mobberley
Siemens Healthineers



Laboratory testing can be a challenge for Virtual Wards

- Remote vital sign monitoring is well established and essential to the functioning of virtual wards but access to lab testing is not always so easy
- Blood tests are often essential to diagnose, screen and monitor patients' health
- Point of Care testing can enable diagnosis, monitoring and screening without the complexity of sending samples to the laboratory

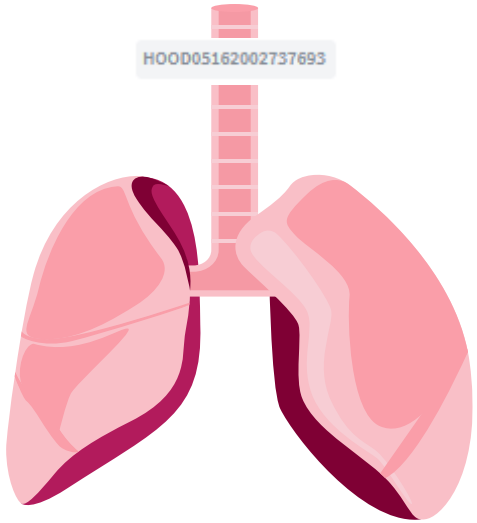
Approximately 70% of clinical decisions are influenced by the use of *in vitro* diagnostics (Lab tests)*

* Source BIVDA Website https://www.bivda.org.uk/Discover-Explore/The-Value-of-IVDs

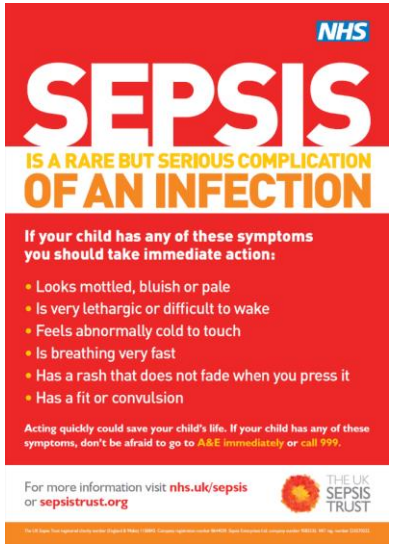
Who might need a blood tests?
A few examples

Renal Disease
Acute Kidney injury or chronic kidney disease may require eGFR to be monitored

Respiratory Disease
Patients may require blood gas analysis to titrate oxygen



Sepsis
Trusts may advocate lactate testing as part of their sepsis pathway



* Source of Sepsis poster: https://sepsistrust.org

How are blood tests organised for virtual wards?

SIEMENS Healthineers

- Visit patient to take bloods
- Transport bloods to laboratory
- Wait for results
- Review results
- Take appropriate action

- Visit patient to take bloods
- Deliver accurate results (<1 minute) at the patient's side
- Take appropriate action

epoc Blood Gas Analysis System

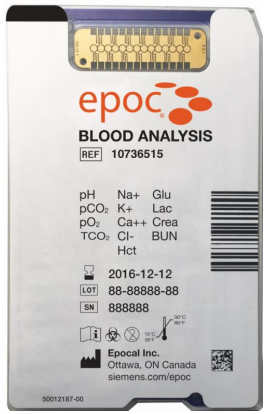
The epoc Blood Gas Analysis System is a portable blood analyser composed of THREE items:

Host

Communicates via Bluetooth with epoc Reader. Host calculates analytical values sent from Reader. Similar in size to a handheld PDA.

Reader

Battery-powered device with internal barcode scanner. The Reader accepts test cards, measures electrical signals from test card sensors, and transmits test results via Bluetooth to epoc Host.

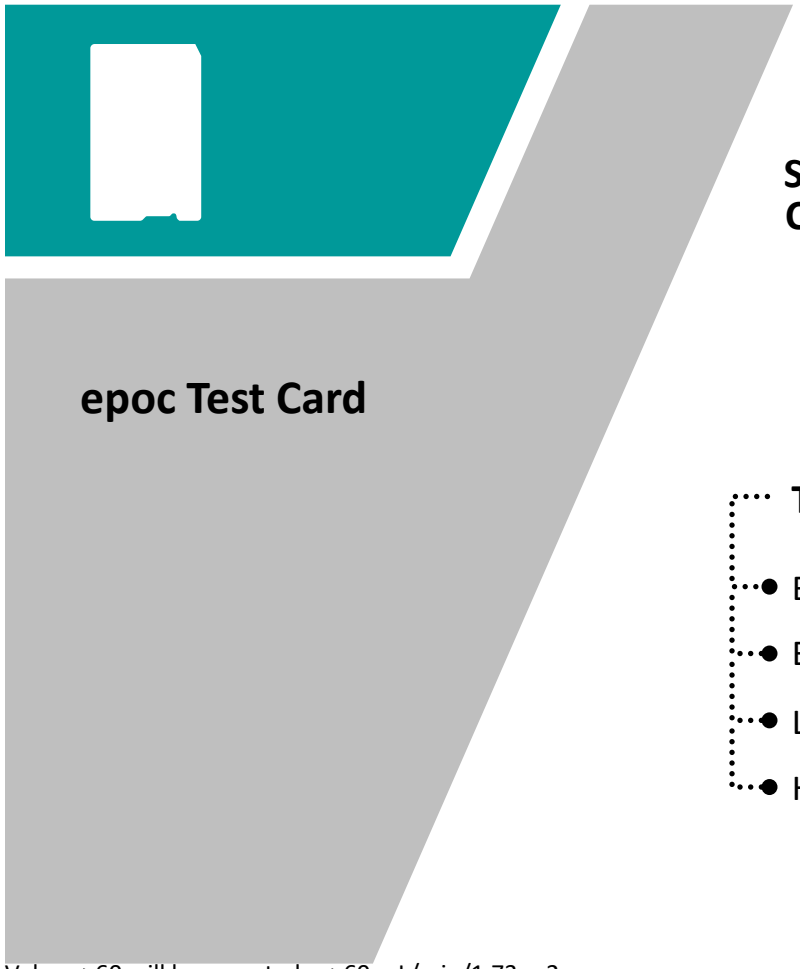


Test Card

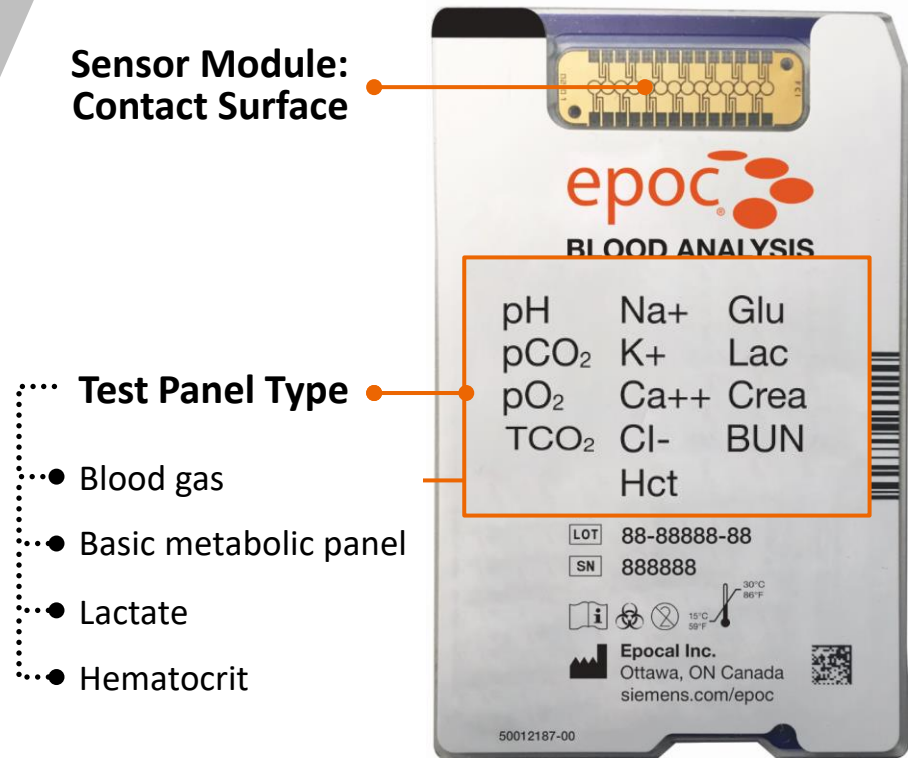
Single-use, room temperature-stable, credit card-sized card with port for blood sample entry. It contains an array of sensors and calibration fluid in a sealed reservoir.

epoc BGEM Test Card

Accurate results for a full panel of critical tests in less than 1 minute after sample introduction at the patient's side



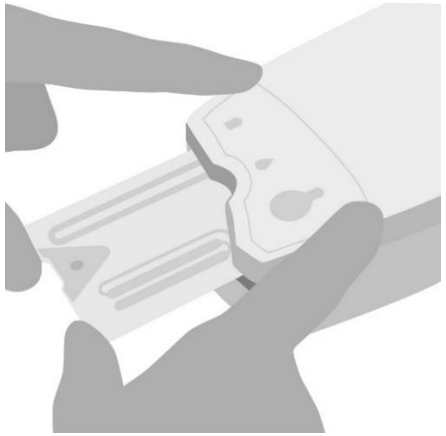
Test Card: Top



13 critical tests on a single card		
Blood Gas		
pH	pCO_2	pO_2
Basic metabolic panel		
Na^+	K^+	Ca^{++}
Cl^-	Glu	Crea
BUN	TCO_2	
Lactate		
Lac		
Hematocrit		
Hct		
Additional calculated values		
AGap	AGapK	$cHCO_3^-$
$cTCO_2$	BE(ecf)	BE(b)
cSO_2	cHgb	eGFRmdr†
eGFRmdr-a†	eGFRckd‡	eGFRckd-a‡
eGFRswz §	BUN/Crea	Urea/Crea

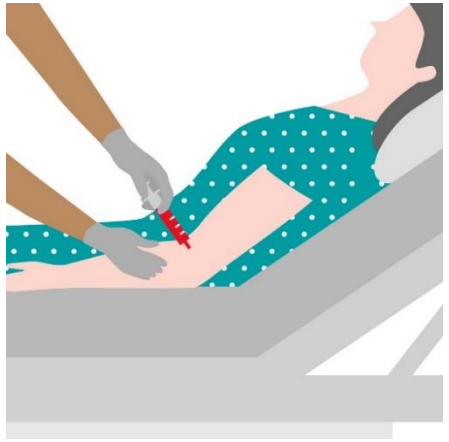
Values >60 will be reported as>60 mL/min/1.73 m2
†IDMS-traceable MDRD type
‡CKD-EPI equation
§Bedside Schwartz equation

Workflow

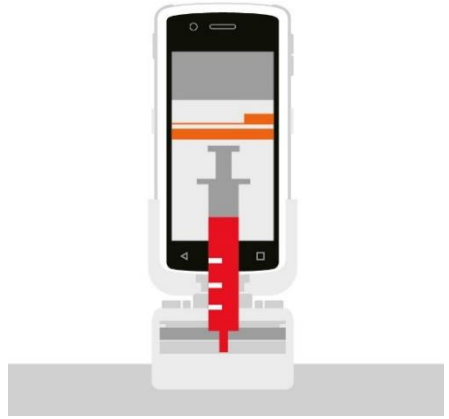


Insert test card

Scan patient



Draw sample



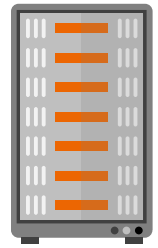
Inject sample

Wireless reporting

Review results

Deliver therapy

POC Informatics



Point of Care Ecosystem Enabled

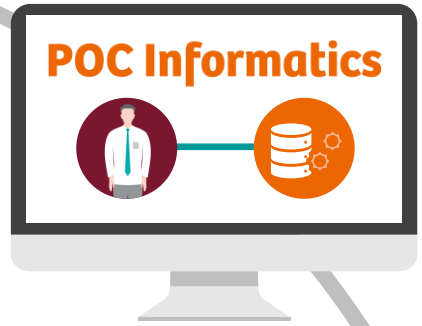
Middleware/Data Management

Transmitting results to Patient record

Third Party exchange box in the hospital IT Network

Third-party Transmission box. Carried alongside epoc. GPRS

Decrypts data and forwards to Trust Integration Engine - Middleware



epoc® Based in a Virtual ward

Acute Trust

Virtual wards in action case Study 1 : Wye Valley NHS Trust

SIEMENS Healthineers

01 Hereford Virtual Ward Team

02 Community based covering huge rural area

03 Several epocs utilised across two sites

04 Connected to Data Management system

05 Fully established since June 2023

Virtual wards in action case Study 2 : Liverpool Heart and Chest Hospital

SIEMENS Healthineers

NHS
Liverpool Heart and Chest Hospital
NHS Foundation Trust

01 Liverpool Heart and Chest team

02 Community based covering Merseyside region

03 Several epocs utilised across the site

04 Fully established since March 2024

Thank you for your attention.

Please drop by the Siemens Healthineers stand, should you have any follow-up questions.

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Refreshments & Networking

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Chair Morning Reflection

Dr Gurnak Singh Dosanjh
GP
LLR ICB

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Case Study

access
freedom to do more

Case Study

Deborah Snook
Integrated Care Consultant
Access Group

Umesh Gadhvi
Chief Digital Information Officer
North East London NHS Foundation Trust

David Pike
Assistant Director of Healthcare Informatics – Clinical Systems
North East London NHS Foundation Trust

NELFT NHS
NHS Foundation Trust

Acute Respiratory Infection (ARI) Virtual Ward Pilot

Transforming our respiratory services

Feb 2025

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Today's agenda

NELFT NHS
NHS Foundation Trust

1. **Why transform respiratory services?**
   Respiratory disease background and the impact we can make

2. **What is the ARI virtual ward pilot?**
   Background, objectives, scope, and overview of the pilot

3. **What has the pilot achieved?**
   Summary of the measurable benefits the pilot has delivered for patients, staff, and the wider system

4. **What comes next?**
   Next steps for the pilot and key opportunity areas

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Respiratory disease in the UK

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NHS Foundation Trust

One in Five people are affected[1]

3rd biggest cause of death[1]

3x Hospital admission rates rising **three times faster** than admissions generally[1]

£ Lung disease costs the NHS £11 billion per year[1]

The most prevalent respiratory diseases include COPD, asthma, influenza, and pneumonia.

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Why transform respiratory services?

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A significant portion of respiratory disease admissions are avoidable

A closer look at COPD (Chronic obstructive pulmonary disease)

- COPD is a chronic condition that requires lifelong management
- **1 in 8 emergency admissions** are due to COPD exacerbations - the second most common cause [2]
- **30 to 50 percent of these admissions are avoidable** [3]
- The NHS spends **£1.9 billion** spent on COPD annually [1]
- **COPD admissions double** in the winter months, significantly contributing to winter pressures

COPD in BHR boroughs

NELFT NHS
NHS Foundation Trust

~10,000 registered COPD patients

~ 600 COPD admissions per year[4]
(4,700 bed days)

29.1% readmission rate[4]

Nearly all these admissions would be eligible for the ARI virtual ward

What is the virtual ward pilot?

NELFT NHS
NHS Foundation Trust

NELFT launched the Acute Respiratory Infection (ARI) Virtual Ward (VW) in November 2023 to address the growing demand for specialised respiratory care within the community and recruitment challenges with high reliance on locum staff.

For the patient …

Comfort of home
Patients that meet criteria can continue to be cared for in the comfort of their own home with family, carers, and friends

Improved care
Patients are empowered to monitor their own health with instant feedback and exceptionally fast access to clinicians

Improved quality of life
Patients more likely to improve faster and less likely to get hospital acquired pneumonia

Reduced anxiety
The pilot has shown to significantly reduce anxiety – a key driver of readmissions, especially with frequent fliers

For the Trust …

Real-time control
The virtual ward team have real-time dashboards to monitor and manage care in the virtual ward

Increased efficiency
The pilot has demonstrated a reduction in readmission rates and average length of stay in hospital.

Increased acute capacity
More time can be spent for those in need as healthier respiratory patients can be transferred home to the virtual ward

Innovation exemplar
A shining example of how virtual wards can help address rising demands while improving outcomes and saving costs

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What has made the virtual ward a success?

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NHS Foundation Trust

Improved outcomes, patient experience, staff recruitment, and increased efficiency through…

People

Successful Training Programme accelerating recruitment

- Robust, 3 month training programme to develop required skills for the role
- Significant acceleration of recruitment (a key challenge) by providing development posts (Band 6 to 7)

Respiratory specialists

- Care provided to virtual ward patients by respiratory specialists. In ward setting, patients are often seen by generalist.
- Virtual ward staff members have access to respiratory consultant MDT daily

Process

Patient-centred design

- A cohort of 6 patient leads supported the development of the service to ensure that the design was patient-centred

Streamlined referral and hospital discharge

- Use of integrated solutions to remove manual and cumbersome processes

Joined up Care with attractive alternatives to ED

- A holistic approach that centres the patient and joins up health and care
- Provides patients with a trusted option to manage their health and well-being that keeps them from showing up at ED

Technology

User-friendly remote monitoring

- Patients (or their carers) take observations at home via a WHZAN Blue Box remote monitoring system that captures required vitals to produce a NEWS2 score
- This is an intuitive device that does not require interaction with any menus and provides audio and visual feedback when observations are successfully taken

Integrated solution: Access Intelligent Care Platform

- The Access Group and NELFT Collaboration and enabled an integrated pathway that creates a seamless transition from ward to home
- Real-time dashboards through that enable advanced control centre capability to monitor and manage VW patients

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What is the staffing model?

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NHS Foundation Trust

Opportunity to scale team further and improve staff to patient ratio while improving outcomes

Capacity to support 25 virtual ward beds
(9.85 WTE)

Consultant respiratory
0.25 WTE

Supports 1-hour daily MDT

VW Clinical Lead
1 WTE, Band 8B

Senior clinician with operational and clinical oversight. Supports daily board rounds, MDTs, and the development of team, training materials and clinical decision making

Respiratory specialists
5.2 WTE, Band 7
1 WTE, Band 6
1 WTE, Band 5
.8 WTE, Band 4

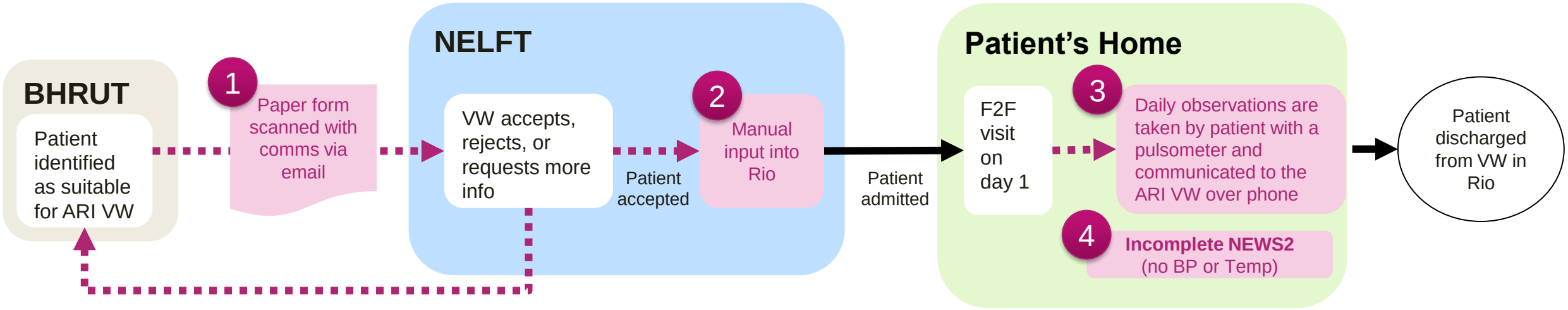
Assessing patients for ARI VW, admission, patient management and discharge. 1 inpatient specialist for each site (2 total) and 5 community specialists

Band 6 to 7 development role that has accelerated recruitment

Administrator
.6 WTE, Band 3

Administrative tasks including communication with GPs and scheduling

What was the process at pilot launch?



~5 face-to-face visits per admission (8 day ALOS)

Manual process

1. Referral requests sent via scanned paper forms
2. Accepted patients need their info to be rekeyed into Rio
3. Onus on patient to accurately capture and communicate observations.
4. No blood pressure or temperature readings in initial pathway; therefore determining a NEWS2 score was not possible

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How has the process improved?

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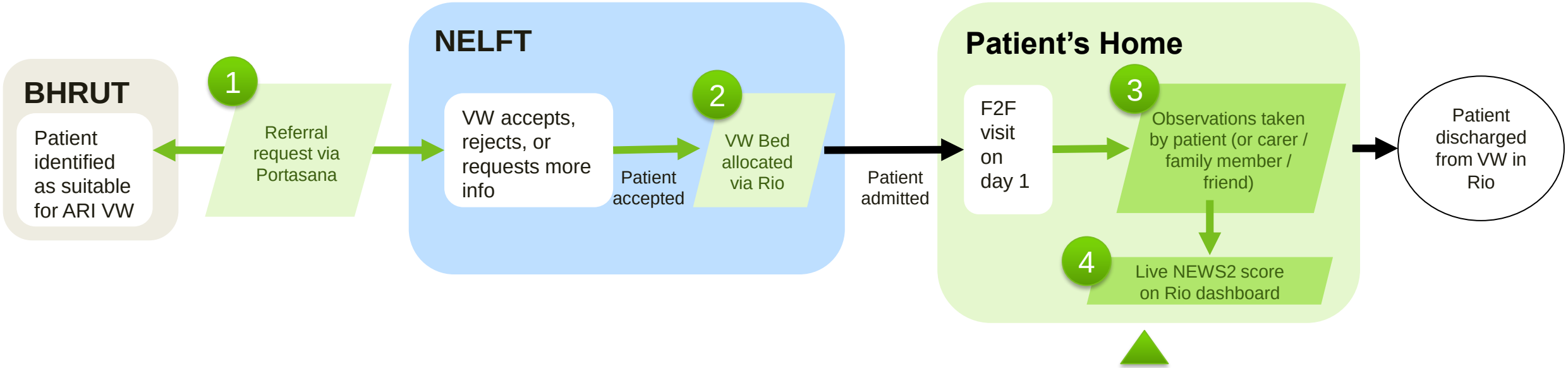
NHS Foundation Trust



Automated process

~2 face-to-face visits per admission (7 day ALOS)

1. Streamlined request process with additional quality control via Portsana
2. Accepted patients can be easily allocated a bed in Rio with no need for rekeying information
3. Observations taken via a user-friendly remote monitoring device (WHZAN blue box) that requires no interaction with a menu. User receives reassuring feedback that measurements were taken successfully
4. NEWS2 score automatically uploaded to Rio dashboard that is monitored by virtual ward control centre.

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How is virtual ward different for the patient?

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NHS Foundation Trust

BHRUT

Inpatient setting

“I don’t get any sleep”

“I don’t like the food and I don’t have much choice”

“I’m not supported by my family.”

“I’m uncomfortable, noisy, and I don’t have any privacy.”

“It’s hard to go to the bathroom”

“I’m around other sick people which makes me anxious.”

“I feel isolated”

Patient’s Home

Virtual Ward

“Instant feedback from my monitor gives me confidence.” – patients tend to take many more readings than required the first few days after admission. These then taper down to two readings per day from day 4.

“I sleep better at home, am more comfortable, and have my regular support from carers, family and friends.” – patients get healthy faster in the virtual ward and have much less anxiety about their condition.

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Patient feedback survey

NELFT NHS
NHS Foundation Trust

"The Team was brilliant, Loved their service."

86% of respondents said the **virtual ward completely or significantly reduced their anxiety** related to their condition

57% of respondents said they would have **attended A&E if the virtual ward was not available**

97% of respondents said they would **recommend the virtual ward to others** with similar conditions

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What has staff feedback been?

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NHS Foundation Trust

Recruitment and retention

This is a key challenge for the region – but the ARI VW robust training programme has turned this into a strength.

“I’m happy and more relaxed than I have been in a long time. I was going to leave the Trust, but now I’m having a good time.”

“I’ve enjoy my role. We provide holistic care to that keeps our patients at home. For example, there’s a patient who frequently calls, and without the virtual ward service, he would have gone into A&E.”

“I like the challenge of doing something new and I’m actively learning.”

Examples of patient impact

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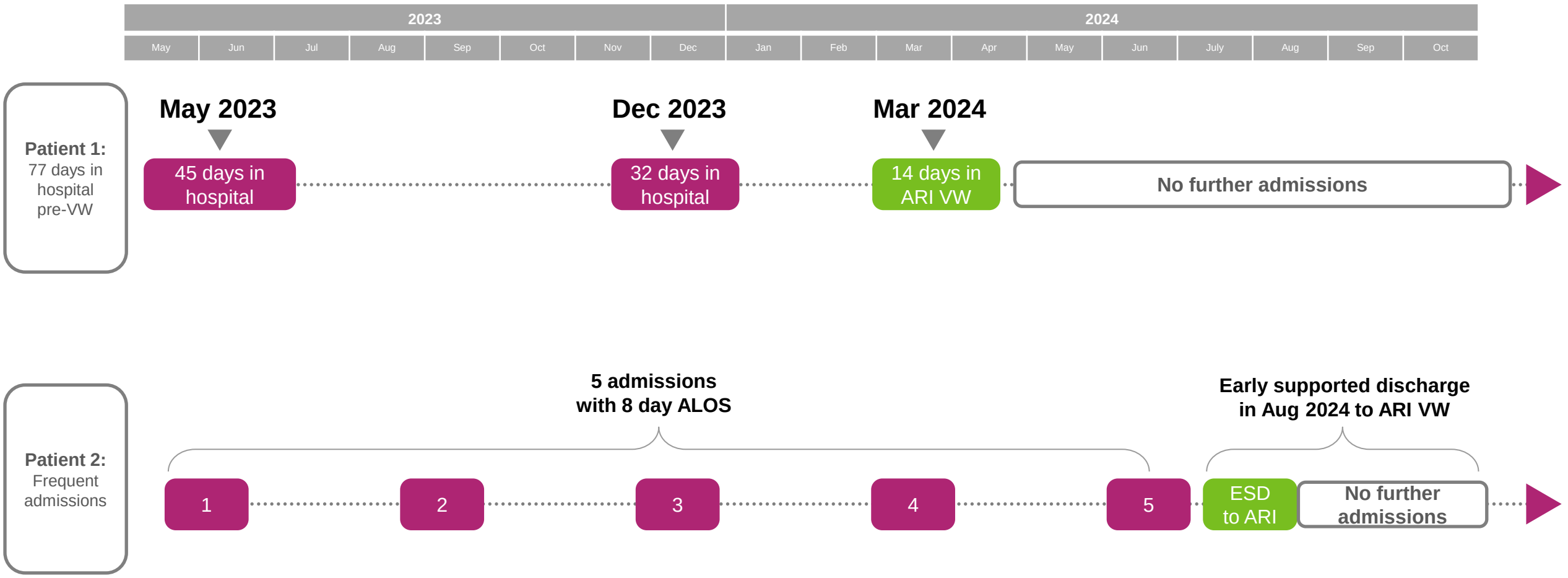
NHS Foundation Trust



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How has the ARI VW pilot evolved?

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NHS Foundation Trust

ARI VW launches
- 5 bed capacity
- 2 FTEs in development posts
- Strict admission criteria (Green only)
- COPD admissions only

Manual VW processes

Nov ‘23

Integrated remote monitoring
- Integration with WHZAN Blue Box remote monitoring
- Widened admission criteria (all RAG statuses, including oxygen weaning in community)
- C. 10 admissions per month

Mar ‘24

Expanded and improved service
- 15 bed capacity covering BHR boroughs
- 5 FTEs, including 2 locum staff
- Implemented daily meetings and twice-weekly MDTs with consultant support, greatly improving the coordination and quality of care
- Admissions per month tripled to 30

Apr ‘24

Extended service hours and community admissions
- Service hours extended from 8am to 8pm on weekdays, 9am to 5pm on weekends and holidays
- Opened GP and Community Treatment Team referral path
- Targeting of frequent fliers to maximise impact

Jun ‘24

Expanding capacity and admission criteria
- 25 bed capacity
- Expanded admission to Asthma, Interstitial Lung Disease (ILD), and Bronchiectasis

Sep ‘24

What have the benefits been so far?

NELFT NHS
NHS Foundation Trust

383 ARI VW admissions as of 13th Feb
(~2670 bed days)

Circa 30% reduction of readmissions in the patient cohort referred to virtual ward

45% of VW admissions are admission avoidance resulting in ~80 fewer non elective hospital attendances

55% of VW are early supported discharge reducing average length of stay by 1 - 2 days*

A significant amount of saved hospital bed days through reduced readmissions, admission avoidance, and early supported discharge
- estimated reduction of circa 400-500 bed days will be confirmed by audit to obtain an accurate value

- This represents a marked efficiency benefit in terms of ward attendance volume and flow which has the potential to significantly impact Trust bed pressures, corridor care and ability to step down from ITU

*Inpatient ALOS for COPD is ~5 days vs national expectation of 4 days (excluding outlier long stayers; **£350 cost per bed day

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What are the projected benefits?

The Virtual Ward Pilot has completed, we are now in the process of negotiating re-funding for future years

- Aspirations are to expand the bed base to 25 beds, we have clinical capacity to undertake this
- The eligible patient cohort for virtual ward is being widened for other respiratory conditions

Acute Hospital projected benefits

- Continue to see the effect on increased flow through specialist medicine beds
- The affects of the increased bed flow will continue to support step downs from ITU and step ups from MRU and the front door
- Less of a need for corridor care

As a cautious indicative extrapolation of pilot outputs

Year One

- Consolidate on 25 beds and an expanded patient cohort in the first 6 months and then seek to increase to 30 beds by 12 months
- Then pause and review for further opportunities
- In parallel repeat success with heart failure

Key drivers / dependencies for expansion

- Clinical support for scheme
- Working through clinical decision making / safety protocols
- Hospital nursing team capacity / skills to support
- Divisional / exec level engagement re impacts for flow and beds

What's next?

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NHS Foundation Trust

Scale ARI VW to meet demand and maximise patient benefits

We expect demand for the ARI virtual ward to be c. 30 beds when admission channels and criteria are fully open:

- 20 beds for Acute Hospitals as Step Downs and AA from A&E (approximately 50% of respiratory ward capacity)
- 10 beds for Primary Care across BHR

Providing holistic care

- The ARI VW also identified a need for social service support for patients, particularly those living alone. Collaborative efforts with local reablement services have been initiated, but will require ongoing support and coordination.
- Urgent need for psychological support within the VW as many users struggle with anxiety, depression, and other challenges.

Heart Failure

- Heart failure is a high impact area where existing technology meet virtual ward requirements
- With the addition of a heart specialist, the service could easily be extended with existing infrastructure

1 **Scale up**

2 **Joined up care**

3 **Expansion to heart failure**

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Case Study

doccla

Case Study

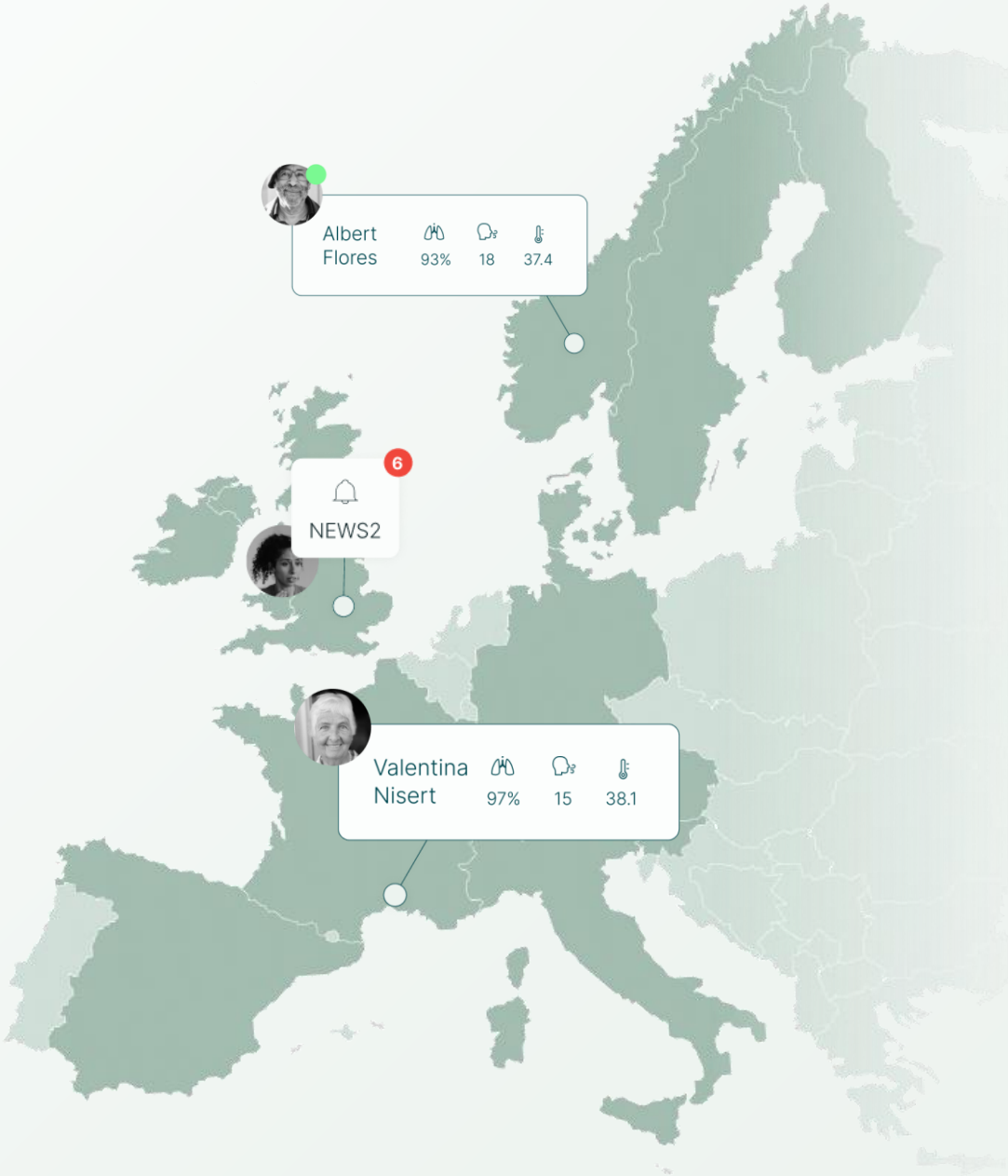
Matthew Parkes
Head of Clinical
Doccla

Alistair Robins
Senior Partnership Manager
Doccla

Regulated by CareQuality Commission

doccla

Rethinking Virtual Care – The Role of Passive Monitoring in the Future of Healthcare



PRESENTED BY

Matt Parkes - Head of Clinical

Ali Bobbins - Senior Partnership Manager

ISO 27001 Certified · CE · GDPR

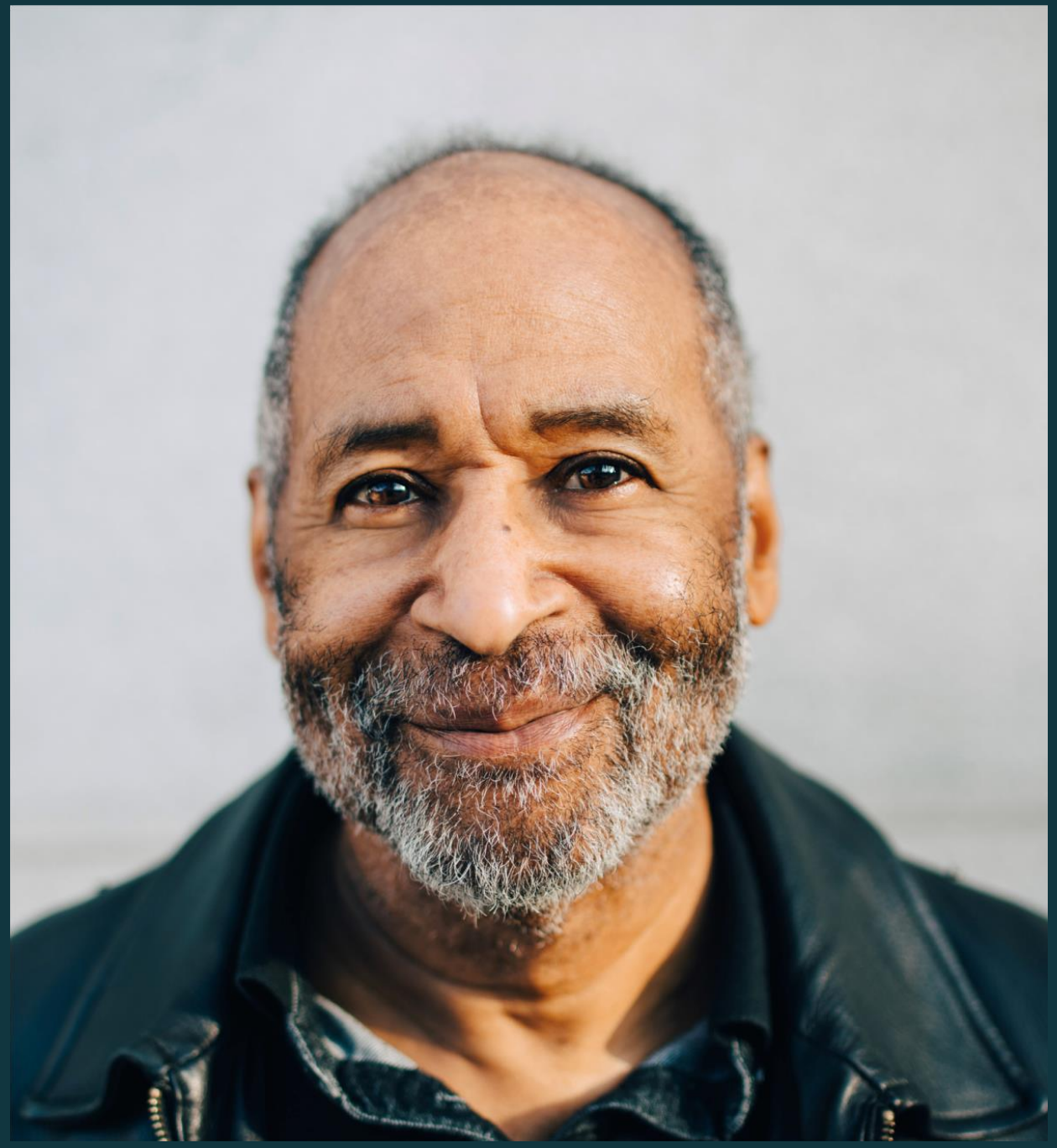
The Evolution of Virtual Care & Its Challenges

Virtual care transforms healthcare, reducing hospital pressures

BUT challenges persist:

- Patient burden - compliance/manual input
- Digital exclusion - Frail still struggle
- Clinician overload - Data gaps, false alerts

We need a new approach: Passive Monitoring



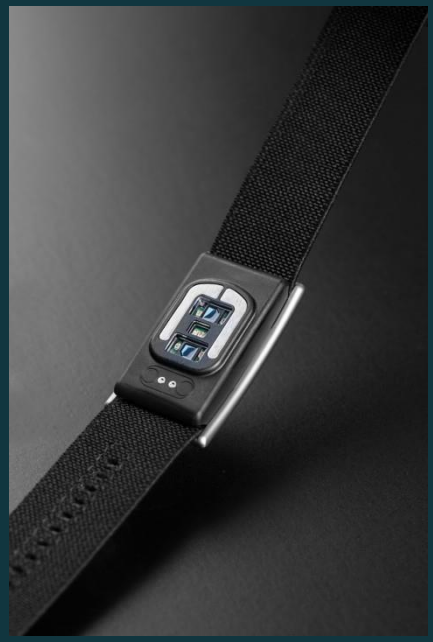
What is Passive Monitoring?

Passive Monitoring = Hands-Free, Automated Health Tracking

No Patient Input Required

Continuous Background Data Collection

Reduces Patient & Clinician Burden



Doccla's Research – The Need for Innovation

Insights from Doccla's study (Melissa Angell) on safe, person-centred virtual care

- → Virtual wards improve patient outcomes
- → BUT some patients struggle with engagement (frailty, tech literacy)
- → Hybrid care models enhance adoption & safety
- → Patients 75+ biggest risk of digital exclusion

Can Passive Monitoring addresses these barriers?

Why you should read this article:

- To enhance your understanding of virtual wards, how they can benefit older people and some of the barriers to their use in this population
- To recognise the importance of providing person-centred care and ensuring patient safety on virtual wards
- To contribute towards revalidation as part of your 35 hours of CPD (UK readers)
- To contribute towards your professional development and local registration renewal requirements (non-UK readers)

Delivering safe, person-centred care for acutely unwell older people on virtual wards

Melissa Angell

Citation
Angell M (2025) Delivering safe, person-centred care for acutely unwell older people on virtual wards. Nursing Older People. doi: 10.7748/nop.2025.e1482

Peer review
This article has been subject to external double-blind peer review and checked for plagiarism using automated software

Correspondence
hello@doccla.com

Conflict of interest
None declared

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Abstract
A virtual ward can provide hospital-level care for older people in their usual place of residence during an episode of acute illness. Care on a virtual ward may be delivered through a mix of in-person home visits, telephone or video calls and remote monitoring. This model of care can prevent unnecessary inpatient admissions, which in turn can prevent the development of associated complications in this patient population, such as deconditioning, delirium and hospital-acquired infections. However, there are barriers to the use of virtual wards in the care of older people. This article provides an overview of technology-enabled virtual wards and discusses some of the barriers to their use in older people's care as well as ways in which these can be addressed. The author also considers how nurses can help ensure that the care provided to an older person admitted to a virtual ward is person-centred and safe.

Author details
Melissa Angell, clinical lead nurse, Doccla UK Ltd, London, England

Keywords
communication, community, frailty, nurse-patient relations, older people, patients, patient safety, patient-centred care, professional, professional issues, technology, telehealth

Aims and intended learning outcomes

The aim of this article is to develop nurses' understanding of technology-enabled virtual wards and how these can be used to deliver safe, person-centred care to older people. After reading this article and completing the time out activities, you should be able to:

Introduction

Virtual wards have been described as a safe and efficient alternative to inpatient hospital care, supporting patients to receive the acute care, monitoring and treatment they require in their usual place of residence, rather than in hospital. Virtual wards have been shown to prevent avoidable inpatient admissions and

How Passive Monitoring Works

Doccla’s Passive Monitoring Ecosystem

Step 1: Wearable sensor collects real-time vitals

Step 2: Data syncs automatically with Doccla’s platform

Step 3: Device sends vital sign information every 15 minutes (customisable)

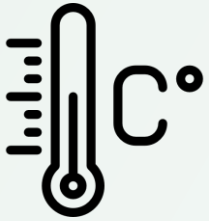
Step 4: Minimal disruption to patient → Better clinical insights

Works even when offline – data syncs when reconnected

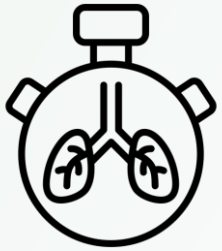
What can it measure?

Oxygen Saturation

ECG (coming soon)



Core Temperature*



Respiration Rate

Activity (Steps)

Blood Pressure
(coming soon)

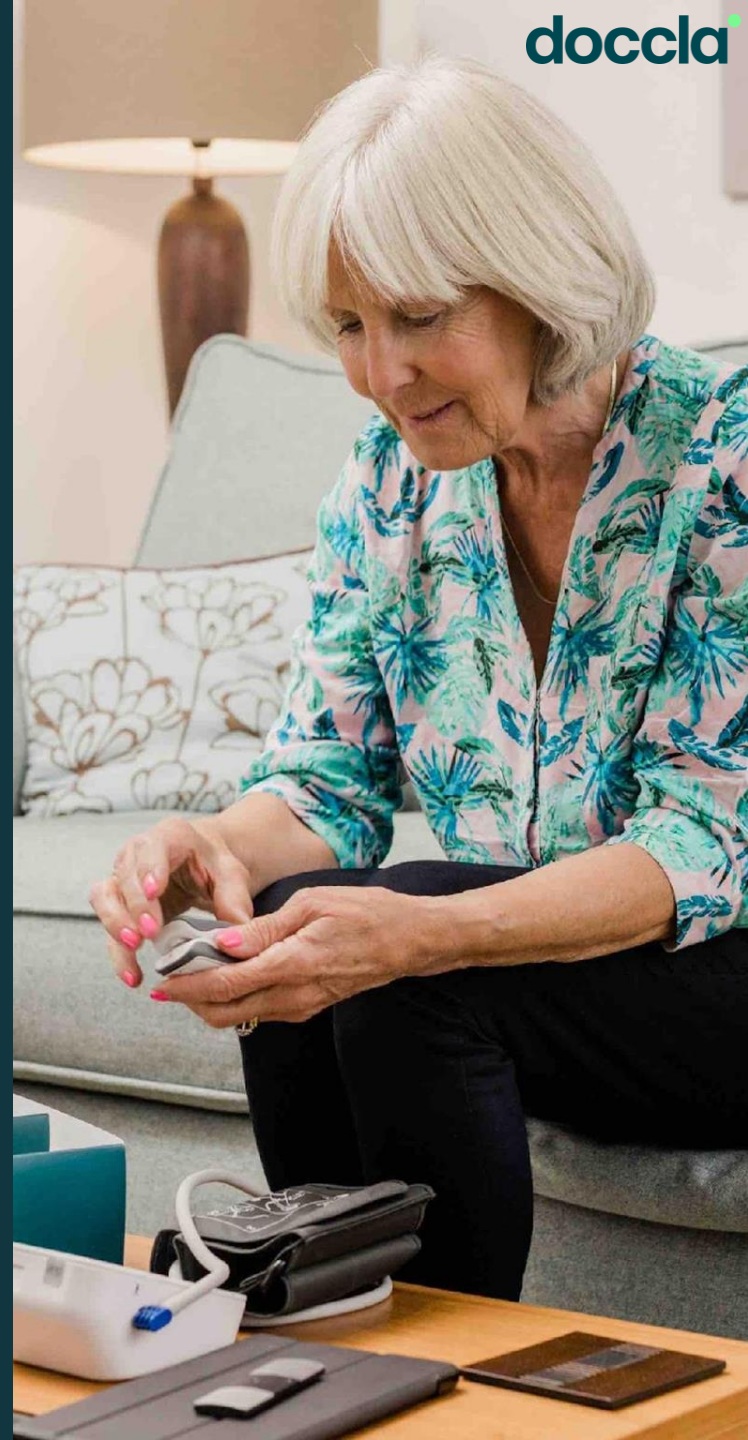
Why is it the Future of Virtual Care?

For Patients:

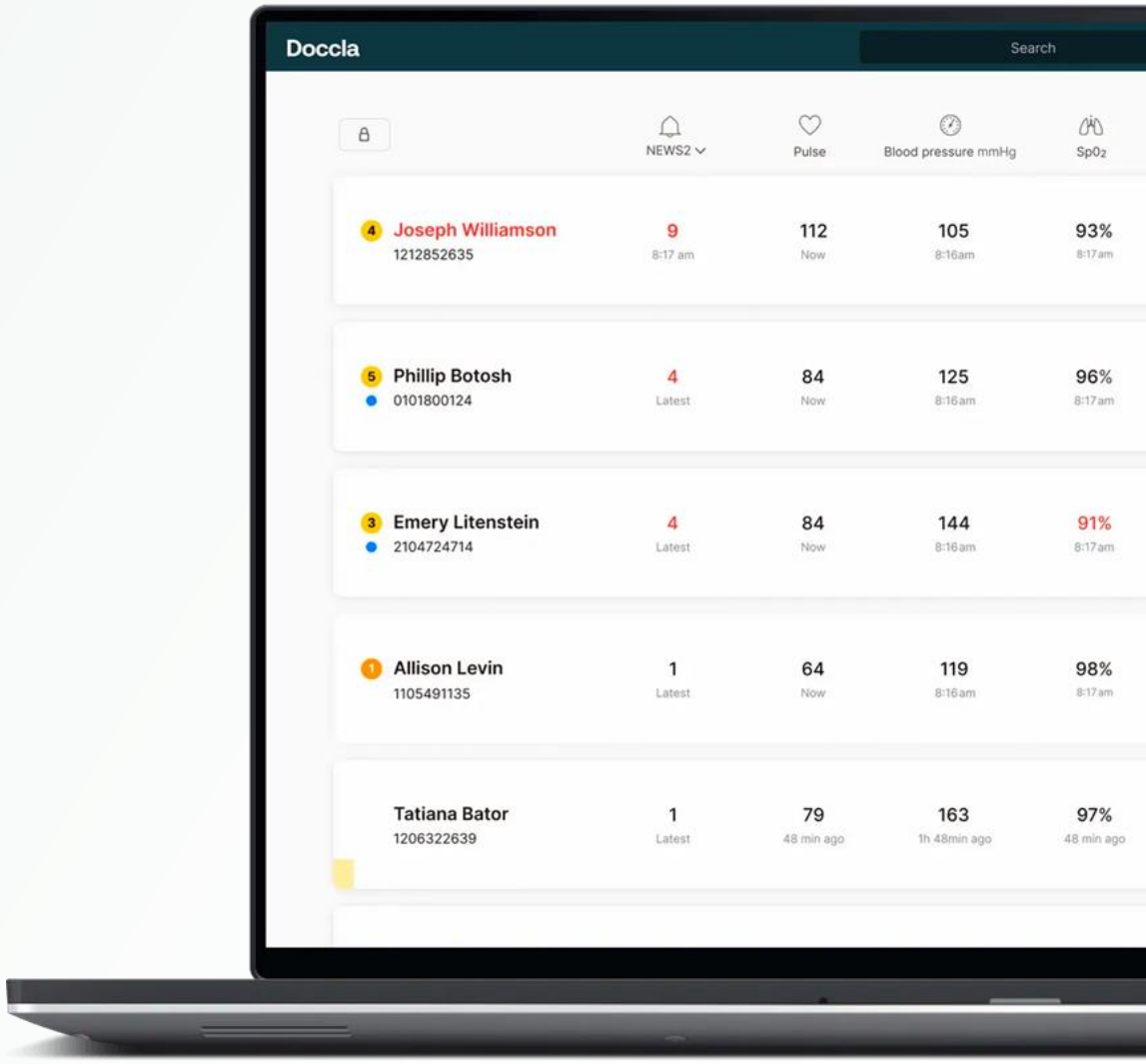
- ➔ Inclusive & Accessible – No need for tech literacy
- ➔ Early detection of deterioration
- ➔ Reduces stress & manual effort

For Clinicians:

- ➔ Continuous, reliable data – No missed readings
- ➔ Fewer unnecessary alerts – Improved triage
- ➔ Less admin, more patient care time



Live Demo - See Passive Monitoring in Action



Regulated by Care Quality Commission

doccla

Any Questions?

HELLO@DOCCLA.COM

184 SHEPHERDS BUSH RD
LONDON W6 7NL. UK

NYBROGATAN 34
102 45 STOCKHOLM. SWEDEN

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Fireside Interview

Dr Tahreema N Matin
Associate Medical Director & Consultant Radiologist
Workforce, Training & Education Directorate, NHS England

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SCAN ME

CONVENZIS

Case Study

evondos®

Case Study

Clare Burgess
Chief Executive
Kyndi Ltd

Successful Implementation of the Evondos Medication Adherence System by Kyndi

Revolutionizing Medication Management in Hospital and Social Care

Presented by
Clare Burgess, CEO Kyndi

Introduction

- Kyndi's mission and positioning in Hospital and Social Care.
- Kyndi's end to end management of the service has been pivotal in its success

The Challenge

- Increasingly Pharmacists in Medway were refusing to fill dosset boxes or placing prohibitive charges on this.
- There was a limited amount of medication that they could hold.
- Cost of medication care calls are increasing
- Cost of hospital admissions due to non-adherence are increasing

Solution Overview

- As a Local Authority Trading Company who are also based within the Health setting Kyndi are able to provide a bridge between Health & Social Care funding.
- We are able to procure in an agile way enabling us to source products that fit the challenges that both sectors are being faced with quickly.
- Kyndi can fund new products in order to prove concept and then using our position in the market can present for funding to the Integrated care System
- This drives further roll-out

Kyndi
ease of mind

- **Locked medicine container**
- **Storage for 2 - 4 weeks** of medications.
- **Alarm** at any attempt of forced entry is sent to monitoring circle or monitoring centre.
- **Automatically identifies the correct medication**
- **Timing for medication** is read via imprinted data on the sachets.
- Medication is dispensed via a pouch system so no timely filling of dosset boxes.
- **Automatic reminders also for non-pill medicines**
- **Visibility on status and alarm notifications to that staff for missed medication**

Embedded Camera to allow client interractions

- The system also allows the Monitoring circle to call in and contact the service user to ensure medication is taken as well as providing social interaction.
- This could be family and friends or the ARC or other health professionals

Kyndi
ease of mind

Implementation Strategy

- Identified the need for a new medication dispensing system
- Kyndi funded initial stage of project
- End to end management of the system has given control over all elements; Raising awareness/change of pharmacy/installation of equipment and medication pouches/monitoring and trouble shooting service/ collating & distributing successes.

Kyndi
ease of mind

Success Metrics

- Medication Adherence across the user group so far has increased from around 40% to an average of 90%
- This has led to improved independence, better mental health and better physical wellbeing
- Reduced hospital admissions, fewer Care calls and reduction in costs for both Health and Social sectors

Case Study
For Peter C

- This is Peter’s story which demonstrates how his improved medication adherence has led to an increase in his independence and consequently improved his mental health.


Kyndi

Future Plans

- Expansion of Evondos project to a minimum of 30 users by the end of quarter 2 (2025/26)
- Embed the service within Medway Acute Trust as Business as Usual to support medication adherance

Kyndi
ease of mind

Conclusion

- Annualised Social care call savings of £72,000 across 5 clients
- Health savings from prevention of re-admissions, ambulance calls and treatment of £52,000 across 5 clients
- Improved independence and mental health of all users.

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Lunch & Networking

Chair Afternoon Reflection

Dr Gurnak Singh Dosanjh
GP
LLR ICB

Case Study

livework

Case Study

Ben Reason
Founder and Design Director
Livework Studio

Diarmaid Crean
Multi-Award Winning NHS CIO

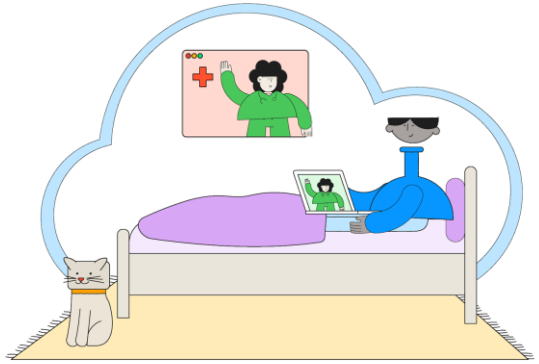
Claire Beard
Virtual Ward Manager
Norfolk & Norwich NHS Foundation Trust

livework

Ambition: To scale to a **500 bed Virtual Hospital** in Medway and Swale.

Medway & Swale
1/10 staff ratio
558 beds

+



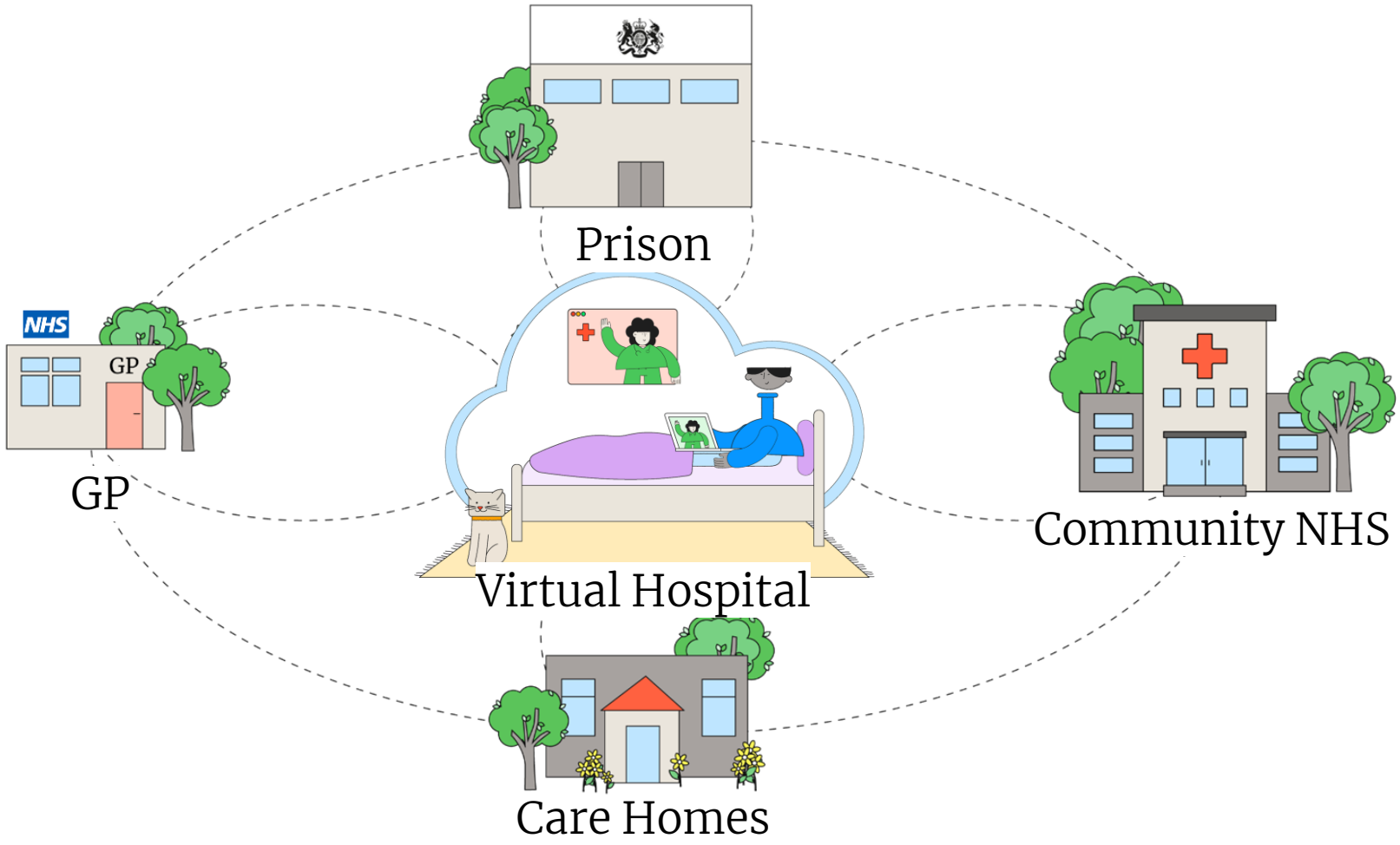
Medway & Swale
1/20 staff ratio
500 beds

To deliver:

Emergency Care	Elective Care	Hospital Risk	Patient experience
Relieve pressure and overload	Free space to reduce waiting times	Reduce infections and deconditioning	71% of people prefer to be care for at home

livework

Ambition:
To scale to a **500 bed Virtual Hospital** in Medway and Swale.

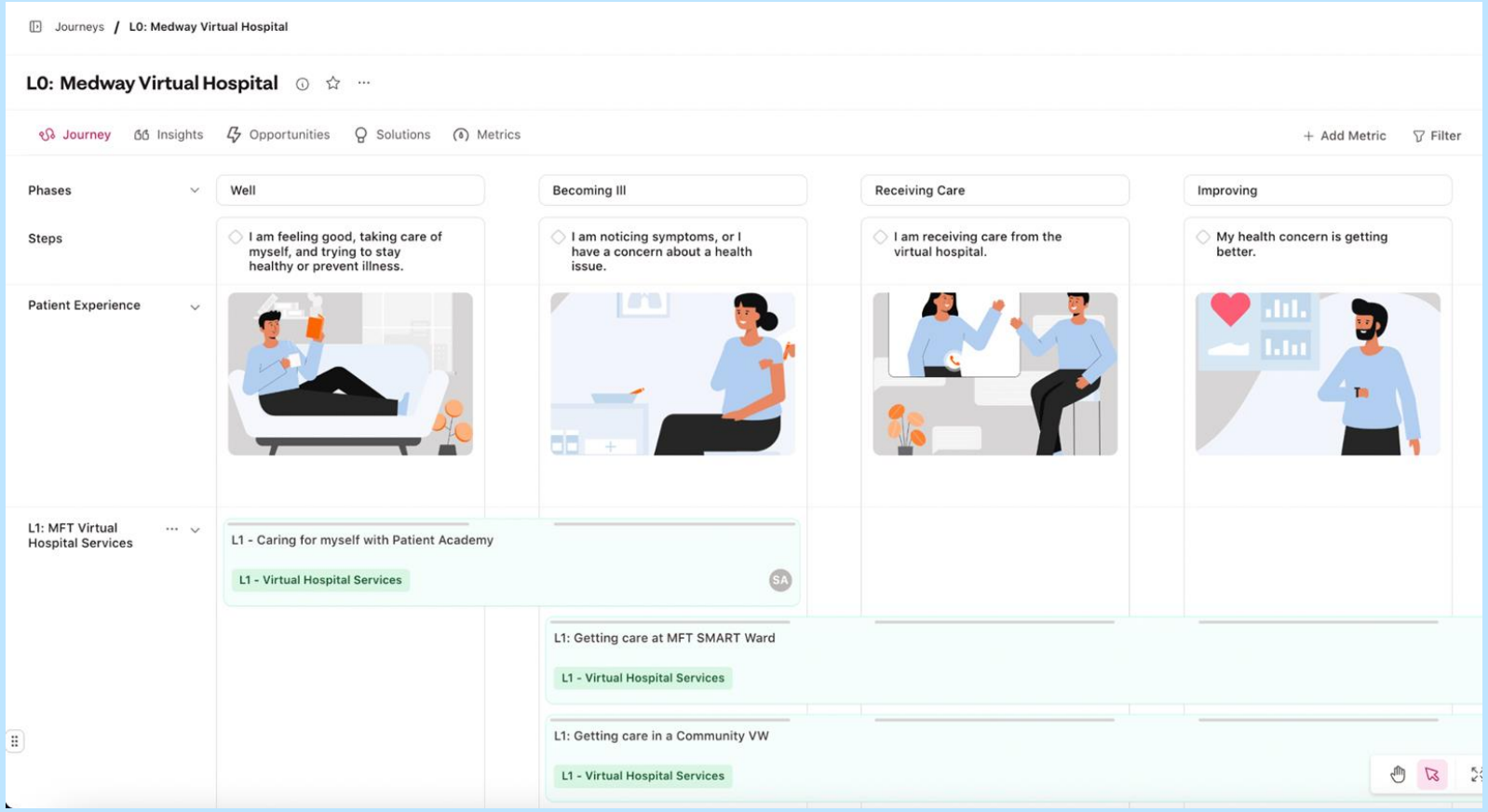


To deliver:

GP	Prisons	Care Homes	Community
Enable Direct Referral services	Save £630k / yr on bed watch & escort	Avoid admissions saves £5k per episode	Potential £1m savings from proactive care

livework

"This requires **quality clinically assured service design** to deliver on potential"



livework

Scan the QR code to learn more about our work with Medway and **come and see us in the networking area** to learn more about the **dynamic SOP** and the **clinical pathways framework** we're creating...

liveworkstudio.com

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SCAN ME

Fireside Interview

Neil Roberts
Managing Director
SEHTA

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SCAN ME

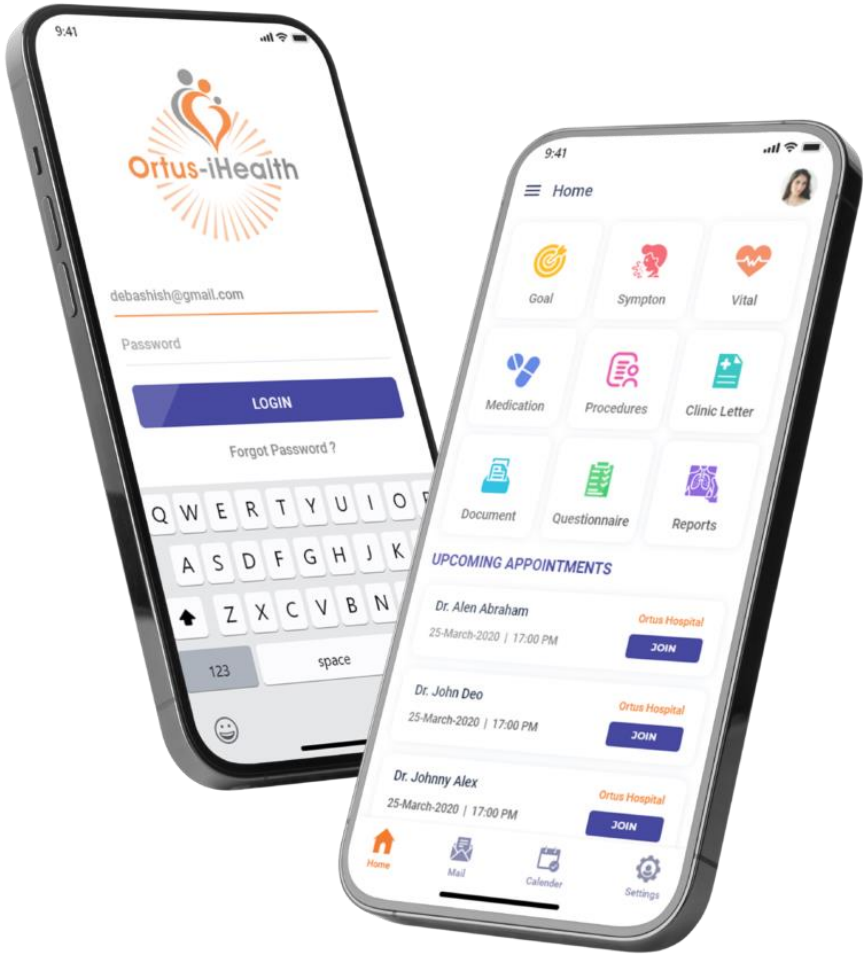
CONVENZIS

Case Study

Ortus-iHealth

Case Study

Dr. Debashish Das
Consultant Cardiologist Barts NHS Trust
CEO & Founder Ortus-iHealth



Comprehensive Remote Patient Care – Addressing the Full Acuity Spectrum

"Moving Beyond Hospital at Home with Integrated Long-Term Remote Monitoring and Early Intervention."

Debashish Das
Consultant Cardiologist St Barts Hospital
Clinical Director Cardiology Whipps Cross Hospital
CEO Ortus-iHealth

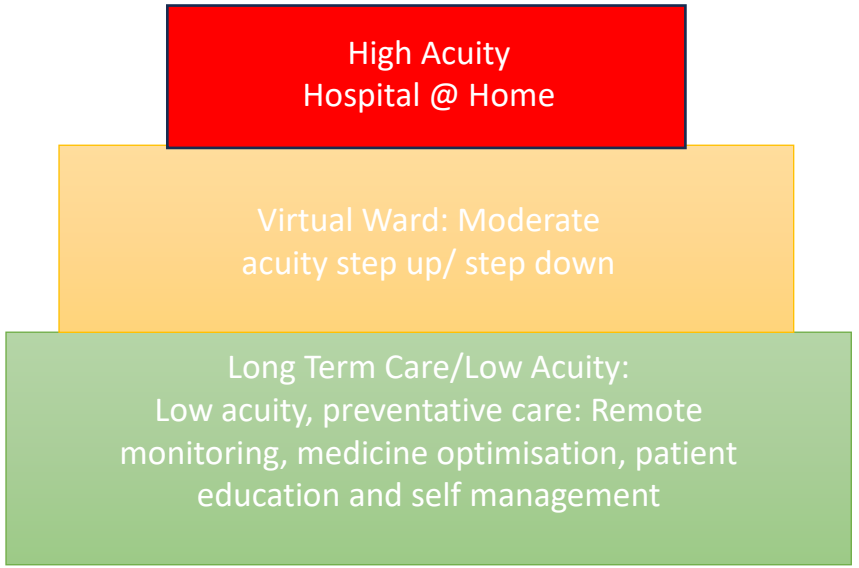
Introduction to the Acuity Pyramid in Remote Care

Ortus-iHealth

Overview of the Acuity Pyramid

- **Bottom Level**: Low-acuity patients, requiring preventive or chronic care management.
- **Middle Level**: Moderate-acuity patients, typically managed with early interventions and regular monitoring, VW models.
- **Top Level**: High-acuity patients needing intensive care, often addressed by HaH models.

Remote Care Acuity Pyramid



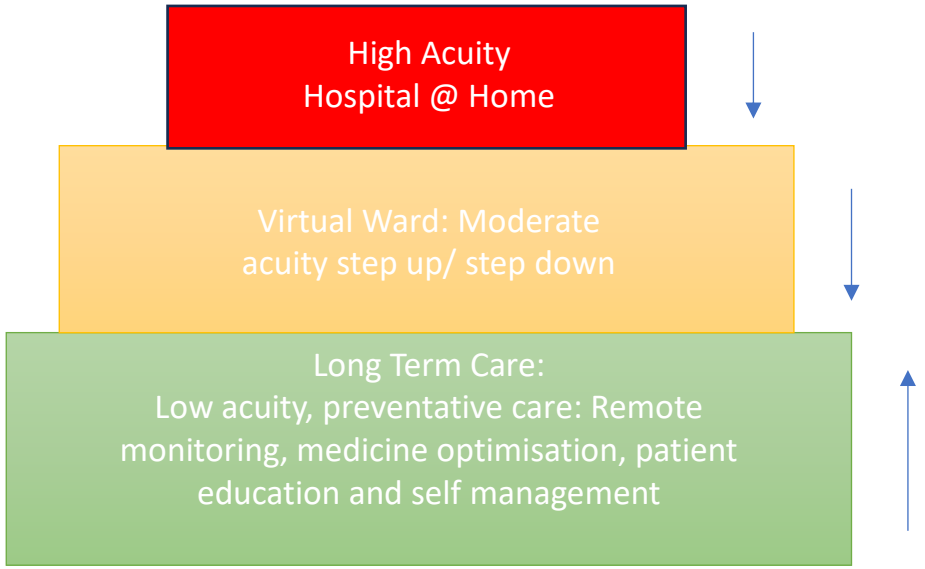
Objective: Build a comprehensive system that manages all levels of the pyramid, not just the high-acuity top.

Defining Hospital at Home and Virtual Wards

- **Hospital at Home (HaH)**
  - Provides acute-level care in a patient's home as an alternative to hospital admission.
  - Often includes IV medications, daily monitoring, and hands-on care by healthcare providers
- **Virtual Wards (VW)**
  - Monitors patients remotely after discharge, enabling early detection of deterioration.
  - Aimed at managing patients who may still require hospital-level observation but can be safely managed outside the hospital environment.
- **Key Difference**: HaH is designed to avoid hospitalisation, whereas VW focuses on reducing re-admissions and preventing clinical decline.

Long-Term or Low Acuity Remote Patient Monitoring (LTRPM)

- **Definition**: Ongoing, non-acute monitoring of patients, typically those with chronic conditions, or those on an elective care pathway to prevent disease progression and detect early signs of deterioration.
- **Features**: Includes wearable devices, patient-reported outcomes (PROMs), digital rehabilitation, and education.
- **Benefits**: Enables proactive rather than reactive care, reducing high-acuity incidents over time.



Defining Hospital at Home and Virtual Wards

Aspect	Hospital at Home (HaH)	Virtual Ward (VW)	Long-Term RPM (LTRPM)
Target Population	High-acuity	Post-acute/medium-acuity	Chronic/low to medium-acuity
Objective	Substitute hospitalization	Prevent re-admissions	Prevent disease escalation
Duration	Short-term, episodic care	Transition phase (1–3 weeks)	Continuous, long-term
Care Modalities	IVs, daily visits, urgent interventions	Monitoring, episodic visits	Digital monitoring, patient education, and coaching
Technology Requirements	Low/medium (telehealth)	Medium/high (remote monitoring, alarms)	High (wearables, tracking, AI risk scoring)

Current NHS Focus on “Virtual Wards" or is it "H@H?”

- **Interchangeable Terminology:** often confusion and overlap in the use of *Hospital at Home* and *Virtual Ward* labels.
    - **Example**: Some services labelled as Virtual Wards are essentially delivering in-home acute care that resembles Hospital at Home rather than monitoring or step-down care.
    - **Lack of Standardization**: This interchangeable nomenclature can lead to inconsistency in service delivery and confusion for both clinicians and patients.
- **Challenges of Overlapping Models**:
    - **No Clear Delineation**: The lack of clear definitions and structured roles means workforce requirements, service delivery expectations, and clinical guidelines are often blurred.
    - **Impact on Patient Pathways**: Patients may not receive the appropriate level of care or transition between models effectively due to this lack of differentiation.
- **Need for Clarity**: Establishing distinct definitions for each model would enhance coordination, streamline patient pathways, and help allocate resources appropriately.

Workforce Requirements for Each Model

Hospital at Home (HaH) – High Acuity

- **Staffing Needs**:
  - **Clinical Team**: Skilled nurses, therapists, and sometimes doctors for regular in-home visits.
  - **Specialized Roles**: IV therapy, wound care, respiratory therapists, and potentially palliative care support for certain high-acuity cases.

- **Skills Required**:
  - **Acute and Intensive Care Skills**: Staff need to be experienced in acute care and comfortable working independently outside of a hospital setting.
  - **On-Call Availability**: In some cases, 24/7 on-call clinicians may be required for urgent interventions.

- **Key Workforce Challenge**: Recruiting and retaining enough skilled clinicians to meet the demand for high-intensity home care.

Workforce Requirements for Each Model

Virtual Ward (Step Up/Step Down) – Moderate Acuity

- **Staffing Needs**:
  - **Remote Monitoring**: Nurses and clinicians trained in remote monitoring, capable of interpreting data from wearables or patient-reported outcomes.
  - **Coordination Roles**: Virtual care coordinators to handle patient monitoring, identify those needing escalation, and arrange telehealth follow-ups.
  - **Interdisciplinary Team**: Depending on patient needs, may include input from physiotherapists, social workers, and pharmacists.
- **Skills Required**:
  - **Monitoring and Early Detection Skills**: Clinicians need to assess and respond quickly to changes in patient status using remote data.
  - **Telehealth and Communication Skills**: Proficiency with telehealth tools and effective patient communication to manage transitional care.

- **Key Workforce Challenge**: Training and scaling a team skilled in remote monitoring and patient engagement.

Workforce Requirements for Each Model

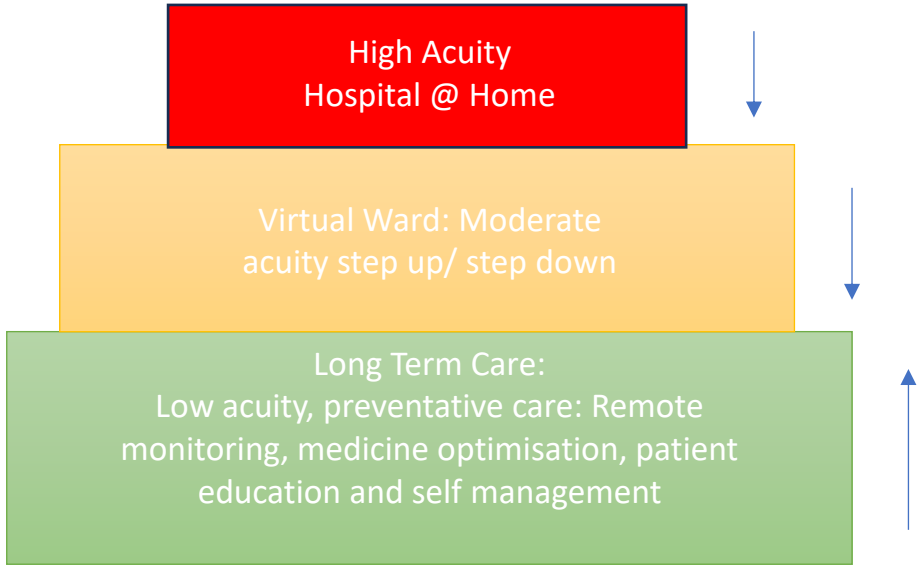
LTC Remote Monitoring – Low Acuity

- **Staffing Needs**:
  - **Minimal In-Person Staff**: Primarily remote support from nurse practitioners, care coordinators, and chronic disease managers.
  - **Data Analysis and Patient Support**: Roles focusing on analysing long-term data trends and providing patient education or lifestyle support.
- **Skills Required**:
  - **Preventive Care and Chronic Disease Management**: Knowledge in managing chronic diseases and preventive care strategies.
  - **Patient Education and Engagement**: Ability to guide patients on self-management and foster long-term adherence to care plans.

- **Key Workforce Challenge**: Ensuring consistent follow-up and engagement with patients over a longer duration without direct supervision.

The Value of Covering the Entire Acuity Pyramid

- **HaH and VW**: Addressing only the top of the pyramid limits impact to short-term, high-acuity cases.
- **LTRPM**: Adds value across all acuity levels, supporting long-term health outcomes and reducing demand on acute services.
- **Evidence**: Studies show that preventive and early intervention (bottom and middle of the pyramid) lead to:
  - A 20-30% reduction in hospitalizations in chronic disease patients.
  - Improved quality of life, with reduced morbidity in long-term conditions like heart failure, diabetes, and COPD.



Benefits of Tackling the Entire Acuity Pyramid

Ortus-iHealth

1. Improved Patient Outcomes

Proactive care reduces emergency admissions – example: Liverpool HF remote monitoring

2. Cost Savings

Long-term RPM has been shown to reduce total healthcare costs by 10-15% per patient by lowering the frequency and severity of high-acuity events (Evidence: Digital Medicine Studies, 2020).

3. Patient Satisfaction

1. Patients experience continuity of care, feel empowered through digital tools, and report higher satisfaction scores.

Building a Digital offering

Ortus-iHealth

- **Unified Platform**: Combining HaH, VW, and LTRPM into one system that covers all acuity levels.

- **Interoperability**: Integration with EHRs, PROMs, and risk assessment tools, patient education and self help - allows for holistic and continuous care.

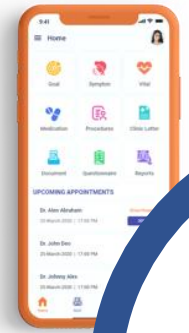
- **Scalable Care**: Flexibility to move patients up or down the acuity pyramid as their condition changes, optimizing resource use.

Platform Overview

Ortus-iHealth

Access

Web, apps and smart devices
Any time, any place, anywhere

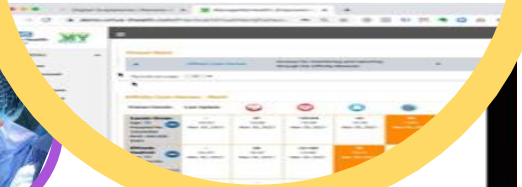


Clinics & Consultations

Clinic and VClinic modelling, delivery, automation, appointment and Consults

Track, Discharge & Share Outcome Data

Clinic, Population, PAS & EPHR



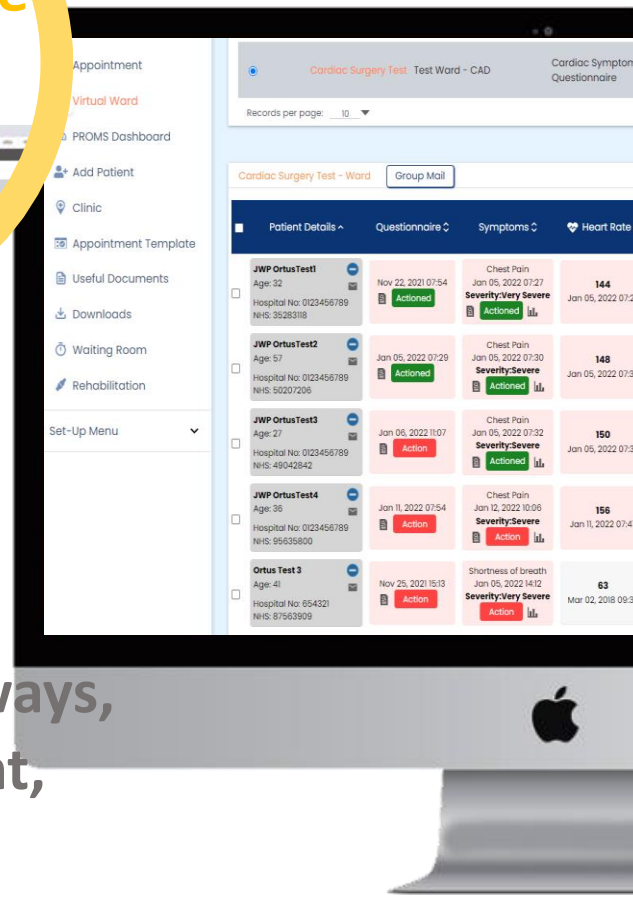
Assessment

Pre & Post Clinic PROMs, PREMs, Quality assessments & eConsent

RemoteMonitoring

Pre & Post Treatment

Pathway dashboards, need based prioritization & early discharge



Removes barriers and delivers flexible access & pathways, remote monitoring, a dashboards, content, consent, engagement & clinics

Building your Digital Pathways

Ortus-iHealth

Patients in the Community

Build Your Service Pathways

- Is this H@H, VW or LTC –RPM?
- Cadence of intervention/review
- What Data do we want
  - What Observations? Vitals, Bloods, Wounds?
  - Symptoms tracking - Questionnaires
- What are the signs of deterioration?
- Asynchronous messaging
- Health education & Rehab
- PROMS/PREMS
- Medication updates & advice

The Patient receives automated and timed contact:

1. Prompts and reminders for taking measures
2. Health education info
3. Review notifications
4. Medication updates

Ward round questionnaires
Symptoms & Vitals monitoring .
Ongoing review
on the dashboard.
The option to provide feedback as appropriate

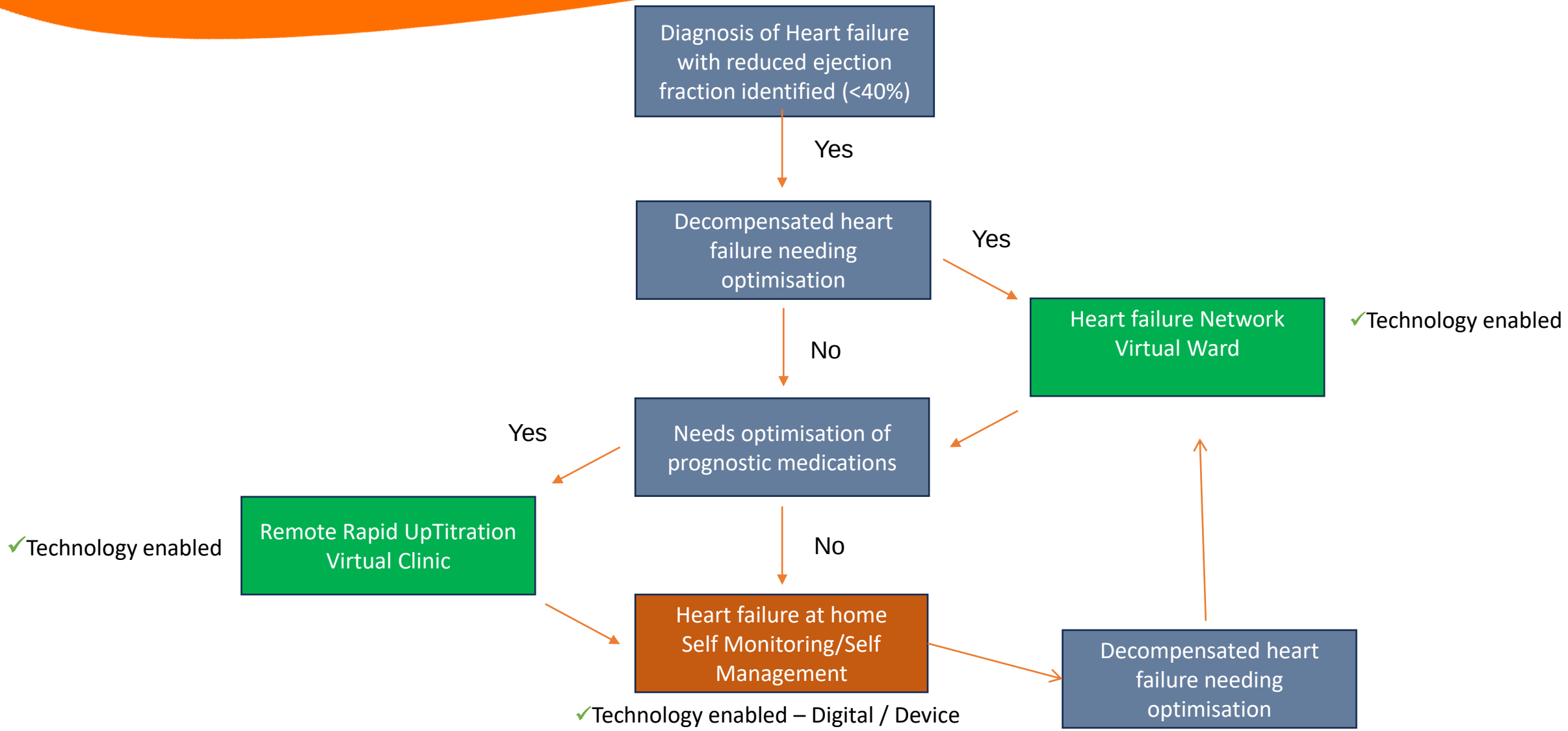
Patients can communicate back with care provider through asynchronous Messaging and using device

Medications & messages can be reviewed. Care adjusted and escalations managed

Connecting Systems and Platforms

Send to Cerner

Barts Case Example: Heart Failure Entire Acuity Pyramid



Heart Failure VW & Rapid Up-titration & LTC

Ortus-iHealth

Acute Heat Failure admission

Patient is assessed and becomes in-patient

Managed at home with Oral diuretics/ IV Diuretics SDEC

- **Early discharge**
  - Up titration at home
- **Chronic disease/medication management**
- **Remote monitoring** for patient-inputted vitals, symptoms, observations
- **Reviews** according to NICE guidelines
- **Asynchronous messaging** /appointments

Patient discharged to Virtual Ward and sent home with BP Cuff and scales

2 Weeks | 1 Month | 4 Months | 12 Months

VW Stay | Rapid Up titration | Long Term Remote Monitoring

Experience with Virtual Asynchronous Ward versus Traditional Hospital Pathway Rapid Up-Titration to 4 Pillars of Medication in Newly Diagnosed HF-rEF patients

Ortus-iHealth

39 newly diagnosed HF patients

4 week follow-up

HF-rEF Rapid Up-Titration

VIRTUAL ASYNCHRONOUS

27

Virtual group

Daily BP, HR & Symptom Questionnaires via app.
Blood test midway & end

Monitored by cardiologist
2x 20 minute call
Asynchronous patient review

100% all max tolerated4 pillars
67% Maximum Up-Titration

- **0%** HF re-admission after 30 days
- **18.2** average improvement in LV ejection fraction at 3 month ECG
- **75%** reduction in clinician time spent on phone (40 versus 160 mins)
- **100%** patients felt safe, app easy to use
- **100%** patient satisfaction with virtual asynchronous clinic

TRADITIONAL HOSPITAL PATHWAY

12

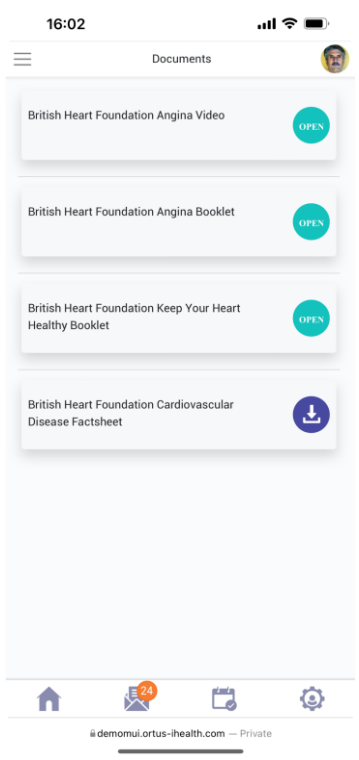
Control group

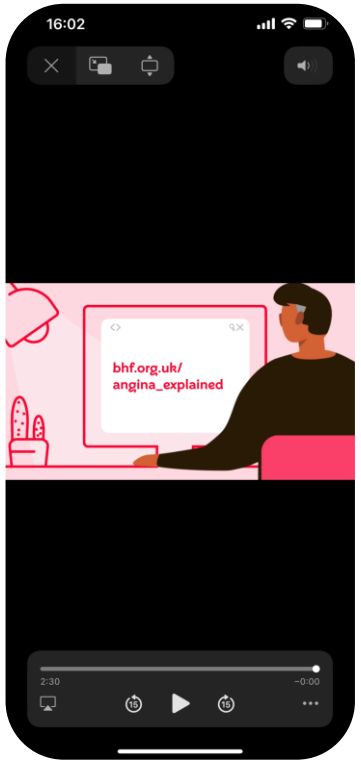
OP 20 minute calls/f2f with patient

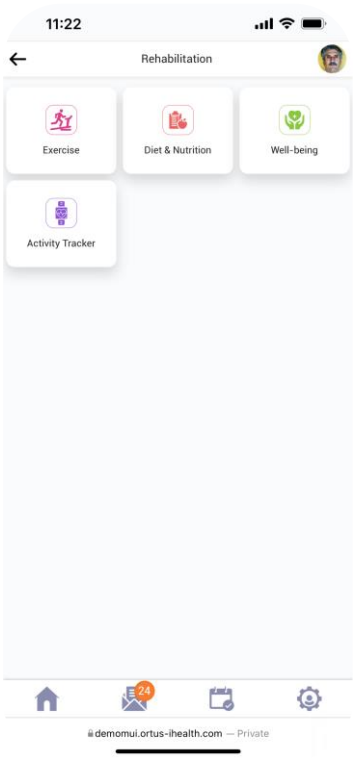
0% Maximum Up-Titration

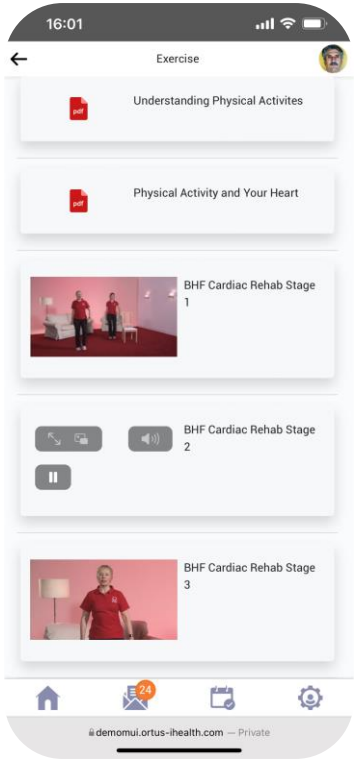
Conclusion: The virtual asynchronous clinic is a promising resource-efficient solution in achieving safe and rapid optimisation of prognostic heart failure medications demonstrating high levels of patient satisfaction in the process

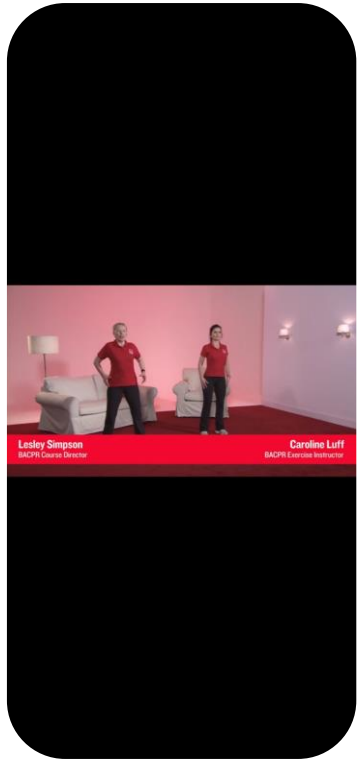
Patient Support and Self-Management











Supplement with Digital Education/Care Plans

Digital Rehab Support

Low Risk NSTEMI VW

Background: The case for change

In the UK, Non-ST Elevation Acute Coronary Syndrome (NSTEACS) is the most common type of acute coronary syndrome (ACS), accounting for approximately 100,000 cases per year.

The management of NSTEACS places a significant burden on the healthcare system requiring significant cost and resources, including hospital admissions, diagnostic tests, and invasive procedures

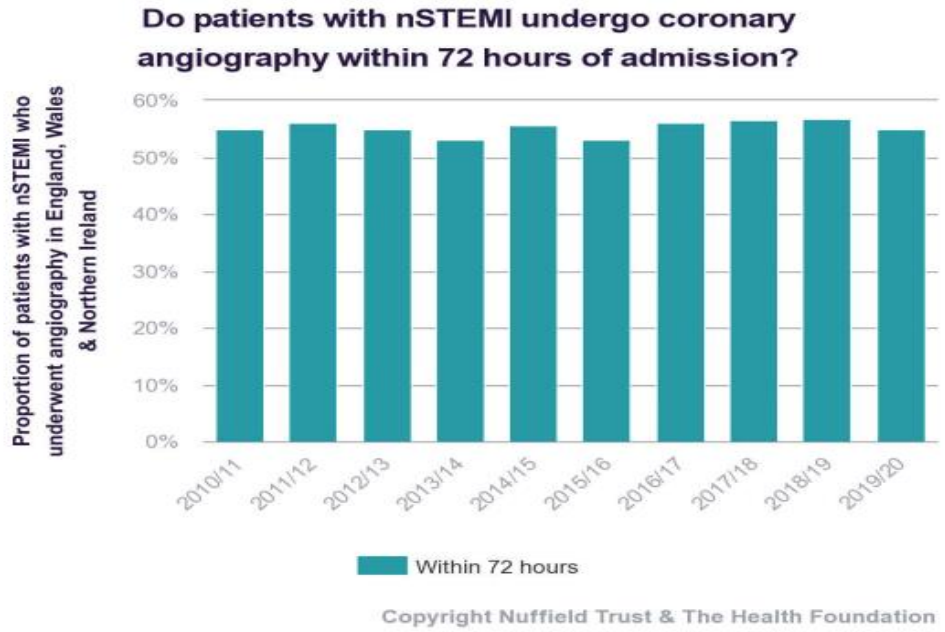
Timely treatment with angiography is critical in avoiding adverse outcomes with National and international guidelines recommending treatment within 72-96hrs of admission for higher-risk patients

There is considerable variation in the time from admission to angiography for NSTEACS patients and many hospitals are failing to meet the targets.

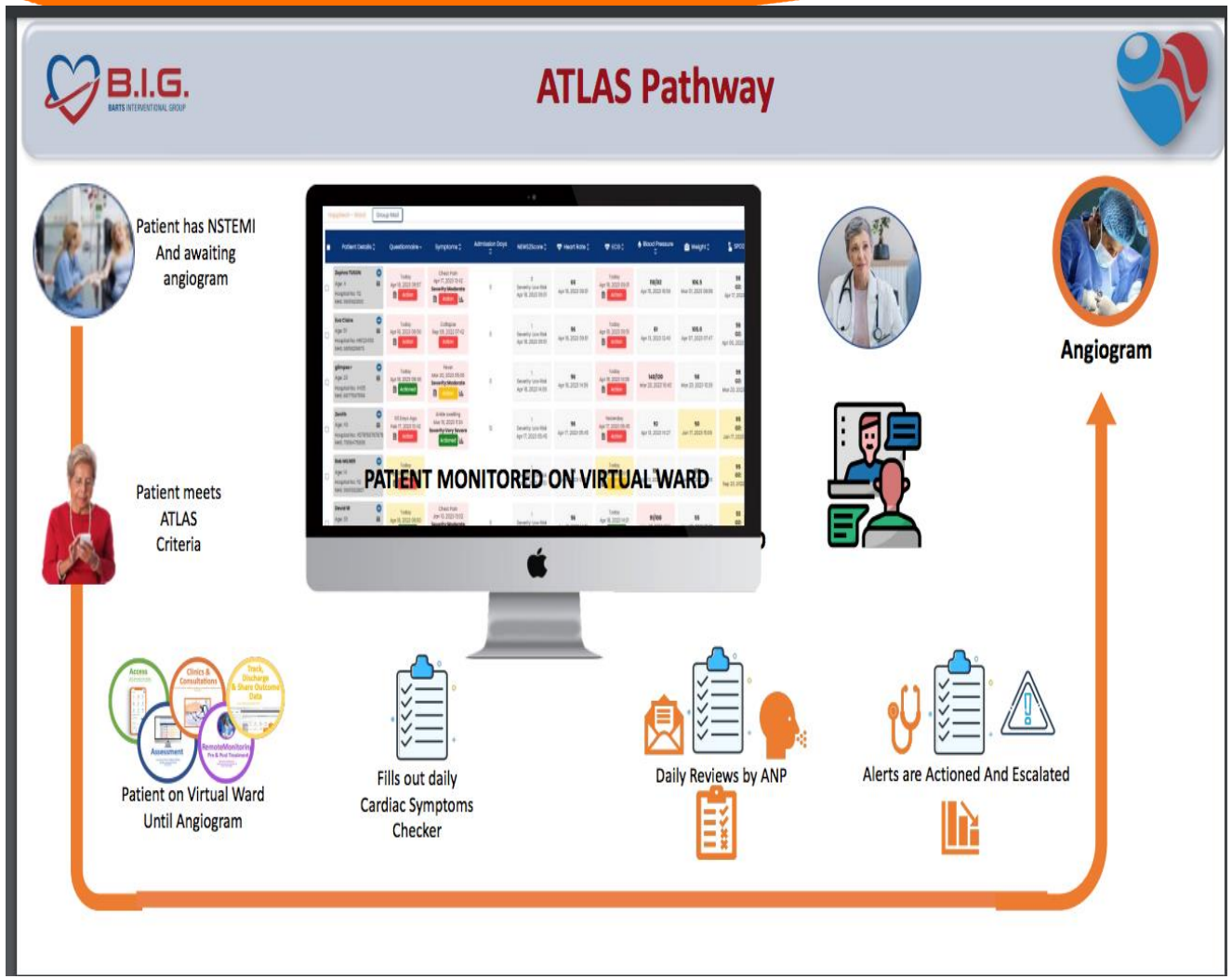
Low risk NSTEMI

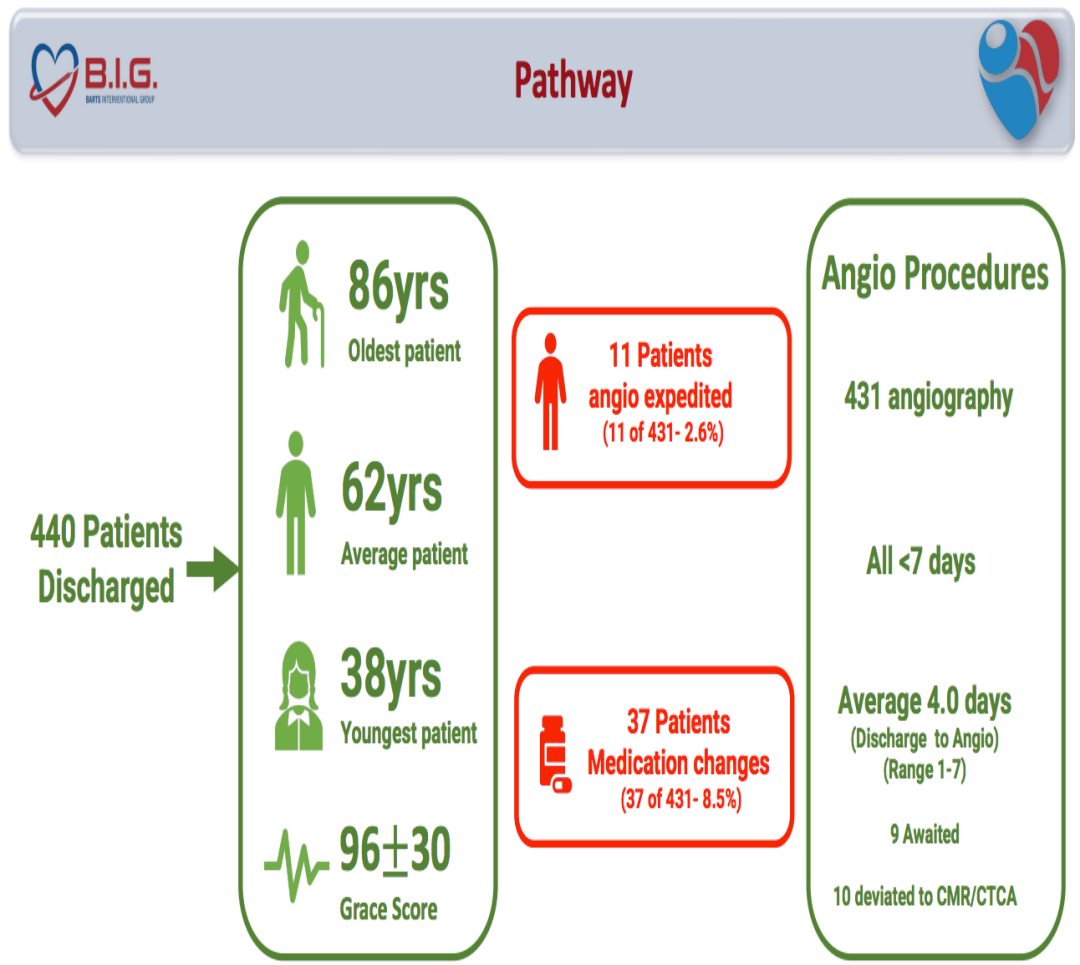
Background: The case for change

- In 2021/22, only 55% were treated within 72 hours (BCIS target of 75%)
- Long in-patient waits for angiography (often 5-10 days) with difficulty in prioritizing higher risk patients (1st come 1st served)
  - Poor Patient experience
  - Low satisfaction
- In lower-risk patients the benefit-to-risk ratio of early invasive procedures is less clear
- Opportunity to risk assess NSTEMIs
  - Providing early/expedited procedures in the high and very high risk
  - Early discharge with OP angiography in the low risk
  - Reducing waiting times



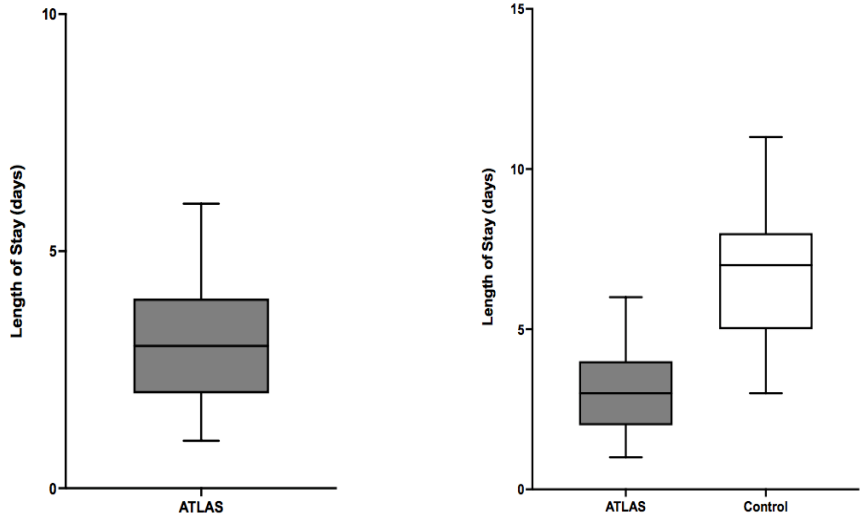
Low risk NSTEMI





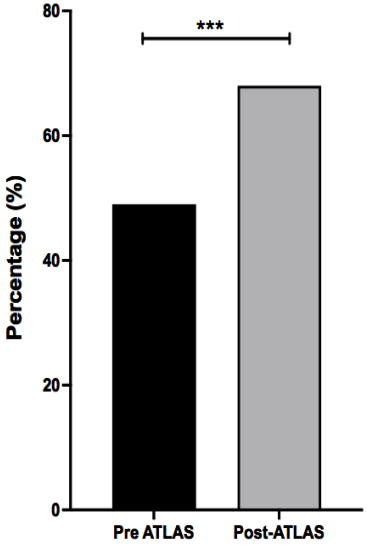
Low Risk NSTEMI VW

Improved Efficiencies: Decreased Wait For Angiography



Lower wait for high risk patients

- Key aim of pathway was to increase the proportion of patients treated within 72hrs
- NICE/GIRFT recommendation
- Pre-Pathway
  - 49% of patients were treated within 72hours
- Post Pathway
  - Increased to 67%



Low Risk NSTEMI VW

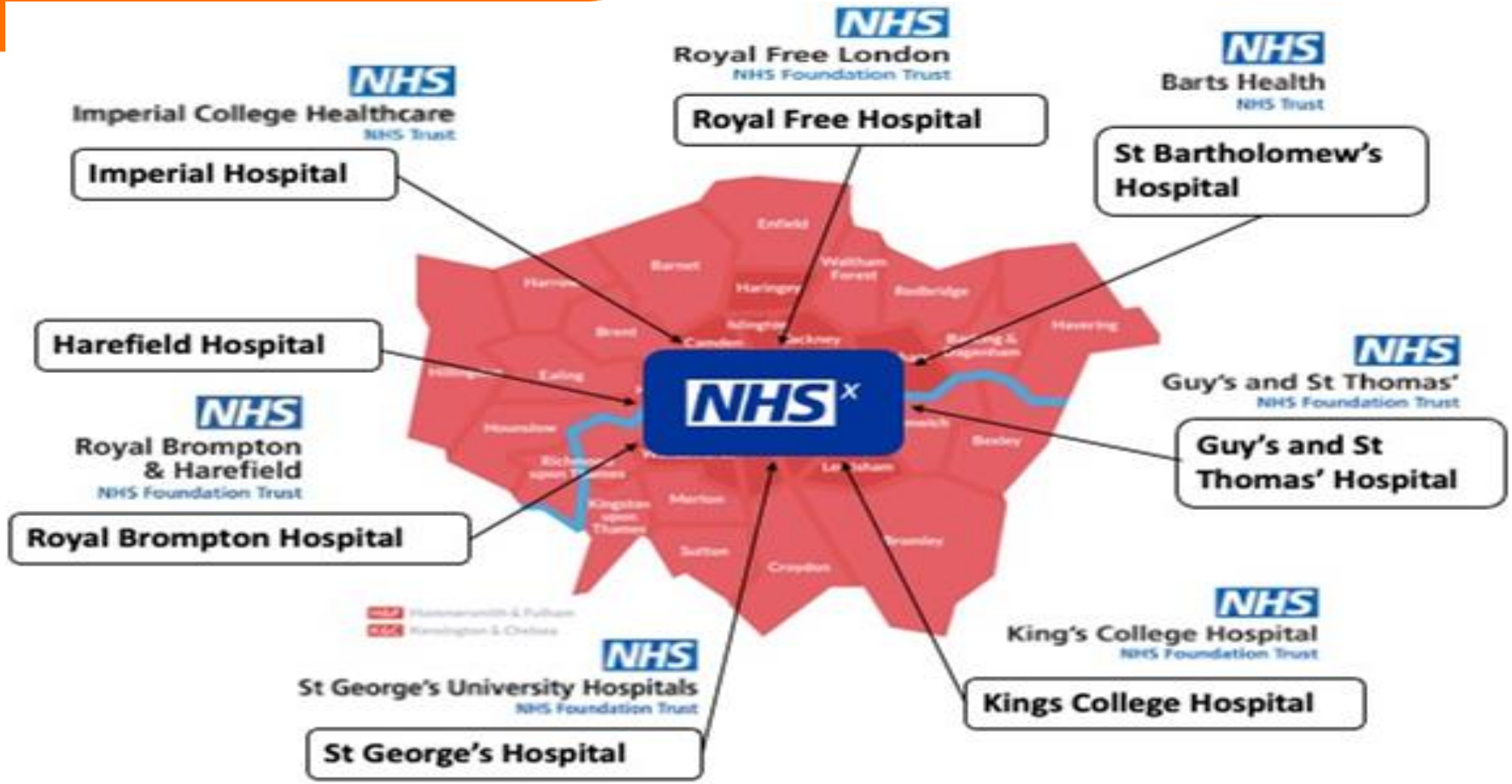
Improved Efficiencies: Cancellations

- NSTE-ACS listed in urgent slots
- Potential for on-the day cancellations if emergencies
- Cancellation rate in IHTs over time-period: **29.1%**
- **0.4%** rate in ATLAS pts
- Predictability to plan lists

Improved Efficiencies: Decreased Wait For Angiogr

London Cardiac Surgical Patients

NHS London Clinical Networks



Pan London

- Currently 1,800 patients are on the Elective Cardiac Surgery waiting list, as part of a total of 7,000 patients who receive surgery annually.
- Waiting times are steadily increasing with the large majority of patients facing P2 clearance times in excess of 12 weeks
- There are substantial and increasing risks of morbidity and mortality whilst waiting for cardiac operations.
- An end-to-end Elective Cardiac Surgery pathway transformation was needed to enable *operationally* efficient and *clinically* safe, effective, high quality care

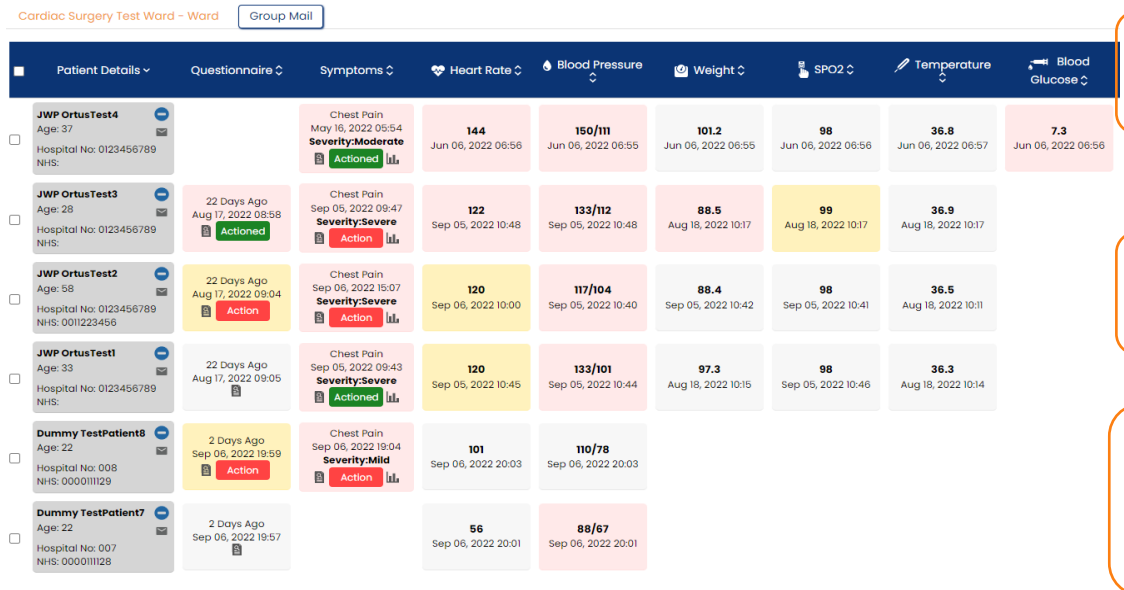
Elective List Remote Care Pathway

Multiple RM lists

Acute Admission – if safe to discharge with early date?

Virtual Ward: Deteriorating patients/ Early supported discharge

Elective Wait Remote monitoring:
Twice weekly symptoms reporting, Patient education, digital cardiac rehab



1. Observations Tracking

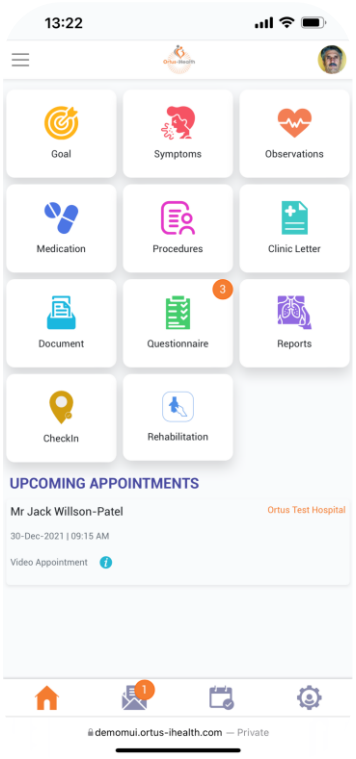
2.Symptoms Monitori

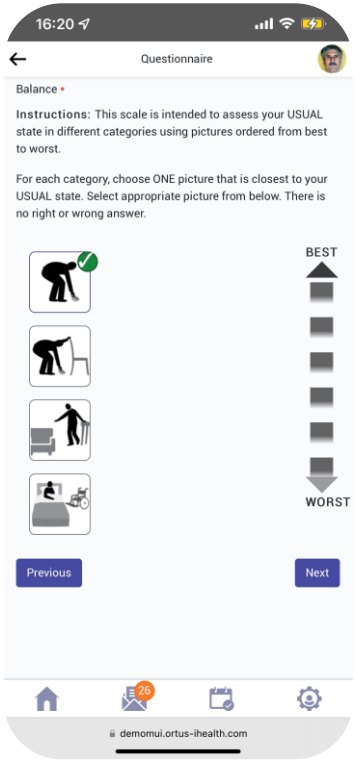
3. Deteriorating patient questionnaire

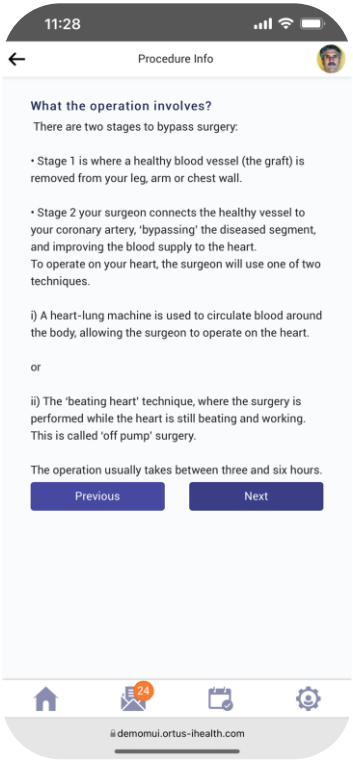
4. Templated Individual and Group Messaging

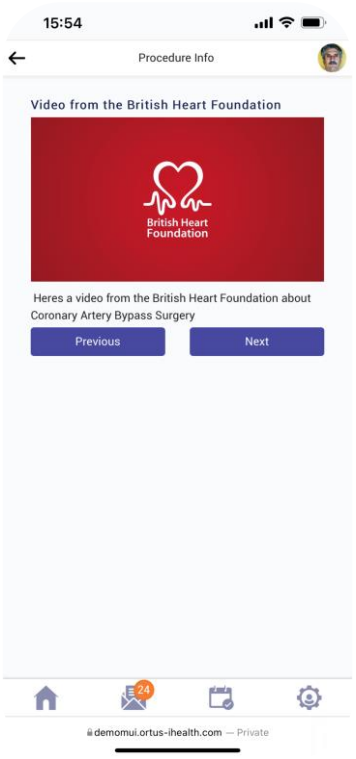
5. Prioritise Patients and Take Action

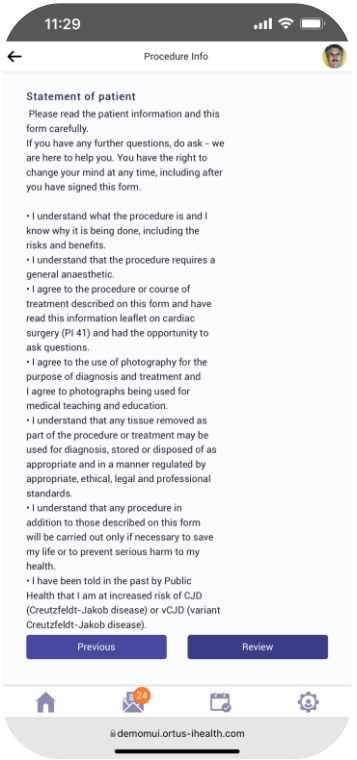
Digitally Enhanced Pathways

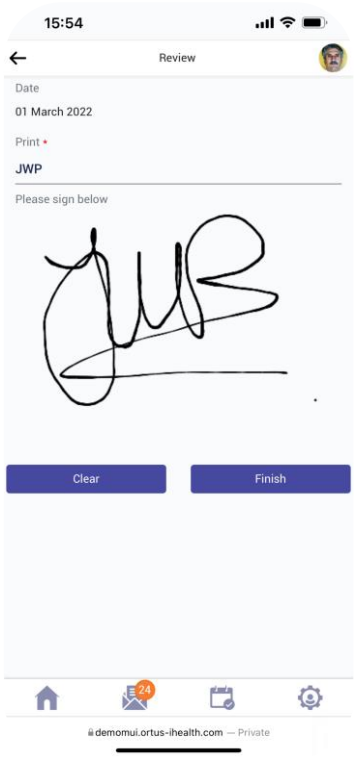












Questionnaires

Automated Care plans

Configurable and sharable E-Consent

Data from Oct 2023

Clinic Name	Go-Live Date	Total Patients Onboarded	Total Patients Activated	% Activation	Total Questionnaires	Red Flagging Questionnaires	Total Patients Escalated
Barts Health NHS Trust	16-Sep-22	1295	1125	87%	5726	700	183
Guys & St Thomas Trust - Brompton	22-Sep-22	719	623	87%	5980	403	146
Guys & St Thomas Trust - Harefield	07-Sep-22	1005	880	88%	6265	506	83
Guys & St Thomas Trust – St Thomas'	07-Oct-22	302	246	81%	1025	107	4
Imperial College NHS Trust	28-Dec-22	273	239	88%	1450	159	16
Kings College Hospital	23-Nov-22	320	267	83%	1141	136	1
St Georges University Hospitals	18-Apr-23	228	192	84%	499	84	1
Pan-London		**4142**	**3572**	**85%**	**22086**	**2095**	**432**

- 3 year of programme
- >8000 patients put through
- 2500 patient monitored at a time
- Harm reduction
- Unplanned admission avoidance

NHS England

Cardiac Surgery Think Tank Recommendations

Cardiac Transformation Programme and Specialised Elective Recovery

Remote monitoring and managing harm - Adoption of remote monitoring for patients on cardiac surgery waiting lists and development of a tailored approach to ongoing monitoring and harm reviews.

Barts Surgical RM Data

- 1432 patients enrolled (Sept 2022 –Dec 2023) remotely monitored – Til July 2024
- 72% Males, 18% Female, 71% engaged with the RM program
- 120 patients escalated as deteriorating and surgery brought forward
- Unplanned admissions 0.98% RPM vs 5.71% not P<0.05
- Mortality remotely monitored 0.59% RPM vs 1.9% P<0.05

- Cost Effectiveness:
- Bed days saved: 1200 days saving - £1mm
- Cost per live saved: £15K
- cost per QUALY £1.5K - **highly cost-effective**, well below the £20,000–£30,000 **per QUALY NICE Threshold**

Building a Connected Remote Care Continuum for All Acuity Levels

Ortus-iHealth

A Vision for Integrated Patient-Centered Care

- **Creating a Seamless Care Journey**: A cohesive, joined-up system is essential to bridge acute care and chronic disease management, supporting patients throughout their journey—from stable phases to acute episodes and back.

- **A Fully Integrated Remote Care System**: With an interconnected approach, patients can transition seamlessly between Long-Term Condition (LTC) management, moderate monitoring, and high-acuity care as their needs evolve. This continuum ensures that patients receive the right level of support at the right time.

- **Benefits of a Unified Remote Care Continuum**:
    - **Enhanced Patient Support**: Patients remain connected to each level of care, improving their safety, experience, and overall outcomes.
    - **Empowered Clinicians**: Integrated workflows allow clinicians across all settings—LTC, Virtual Wards, and Hospital at Home—to collaborate effectively, enhancing care continuity.
    - **Effective Resource Management**: A connected system enables the healthcare network to optimize resources, prevent unnecessary hospitalizations, and support proactive, long-term health management.

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Panel Discussion

Francesca Markland
Senior Programme Manager, Remote Monitoring & Virtual Wards
NHSE London Region Digital Transformation Team

Dr. Matea Deliu
Academic GP, Clinical Lead Primary Care Digital Delivery, Clinical Safety Officer
NHS South East London ICB

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Food, Drinks & Networking