Welcome to The NHS Virtual Wards Conference North 2023

11th July 2023
08:00am – 16:00pm
Etc venues, Manchester

Slido

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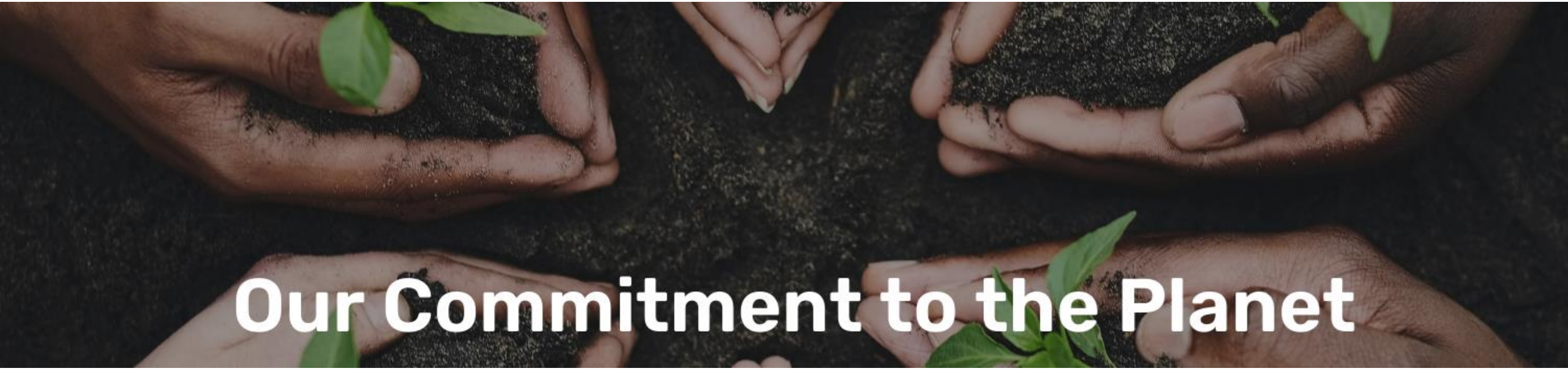
SCAN ME

Current Trees Planted to date: 10,444



For Each Delegate Attending Our In-Person Event Today, we will be planting 1 tree with our Key Sustainability Partner

PLAY IT GREEN

Chair Opening Address

Douglas Hamandishe

Chief Digital Officer/Broadcaster and Presenter - **Context Heath and Centric Health Media**

Speaking Now…

Dr Baribefe Olufemi Vite
Doctor - **East Suffolk North Essex Foundation Trust (ESNEFT)**

Hannah Chapman
Nurse Operational and Clinical Lead - **East Suffolk North Essex Foundation Trust (ESNEFT)**

East Suffolk and North Essex NHS Foundation Trust

ESNEFT General Surgery Virtual Wards

ESNEFT Virtual Wards

East Suffolk and North Essex NHS Foundation Trust

Provide acute clinical care at home for a short duration (up to 14 days) as an alternative to care in hospital

Goals:

- Improve patient outcomes and experience, enabling shorter stays in hospitals, reduction in deconditioning and reduced risk of infection
- Safe and efficient management of bed capacity to support the urgent and emergency care capacity demand – in accordance with 23/24 bed modelling assumptions
- The maintenance of elective care programmes and recovery of waiting times
- ESNEFT has partnered with:
  - Huma: a 'hospital at home' technology provider,
  - Bionical: a provider of virtual nursing teams,
  to deliver virtual wards across the Trust.

Capacity Milestones – Q3 & Q4

East Suffolk and North Essex NHS Foundation Trust

ESNEFT Virtual ward capacity is a crucial part of the trust's bed modelling assumptions. As well as the shorter term national target for trusts to consistently reach 80% occupancy of available virtual ward capacity by December 2023.

Site	Current capacity (No of patients)	Planned September'23 capacity (No of patients)	Planned December'23 capacity (No of patients)
General Surgical VW Colchester and NEE	8	12	15
General Surgical VW Ipswich and ES	10	12	15
Total	**18**	**24**	**30**

Model of care:

East Suffolk and North Essex NHS Foundation Trust

The ESNEFT Model of Care is intended to deliver virtual ward care in the most resilient and efficient way by building on existing services where possible ‘One Team’ approach with ‘Time Matters’ at the heart of the patient model.

The various components are as follows:

- Clinical Teams
- Core Assessment Team
- Central Monitoring Hub
- Community Teams
- Medical Support

Model of care:

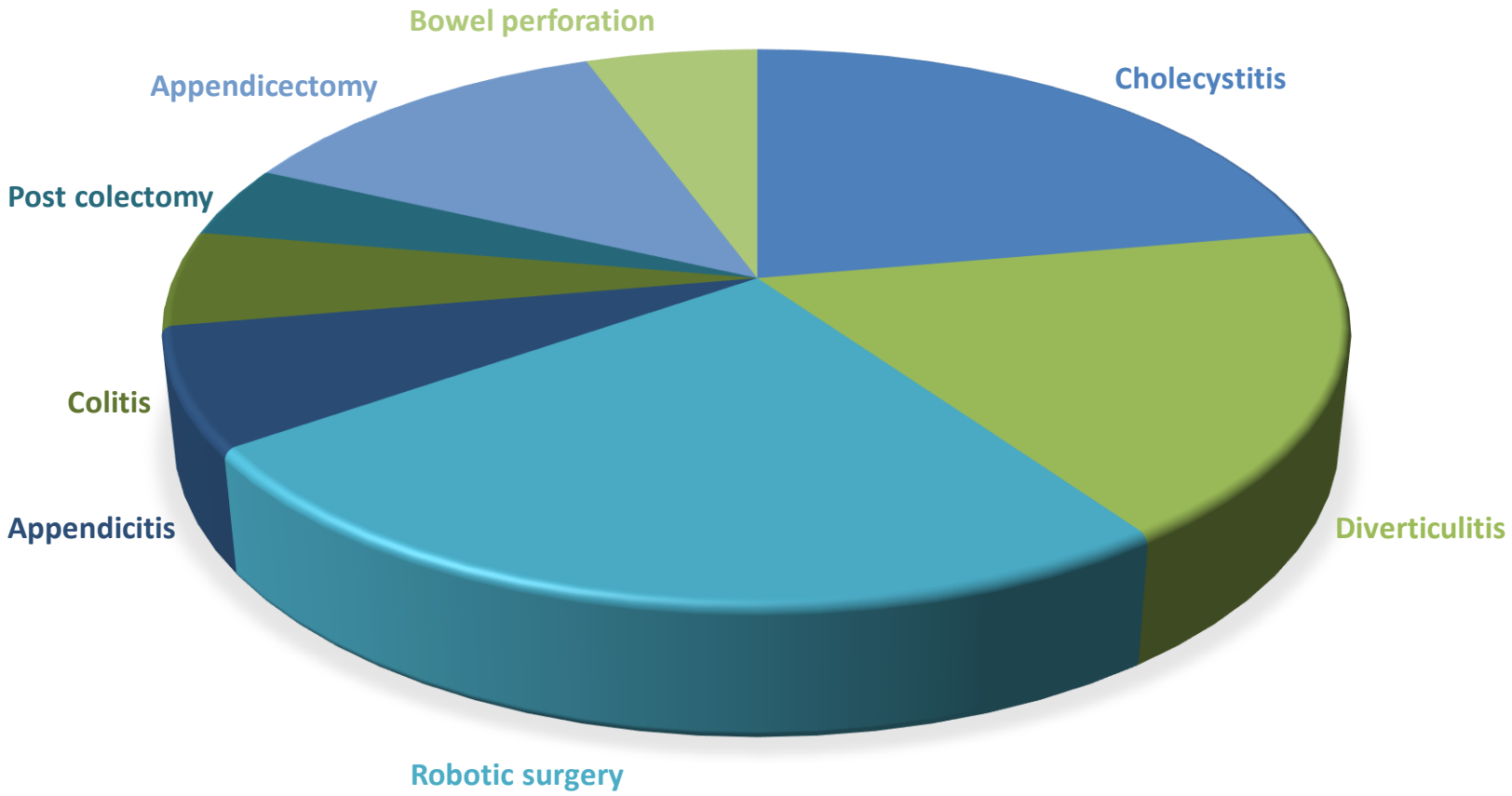
East Suffolk and North Essex NHS Foundation Trust

East Suffolk and North Essex NHS Foundation Trust

How things are going…

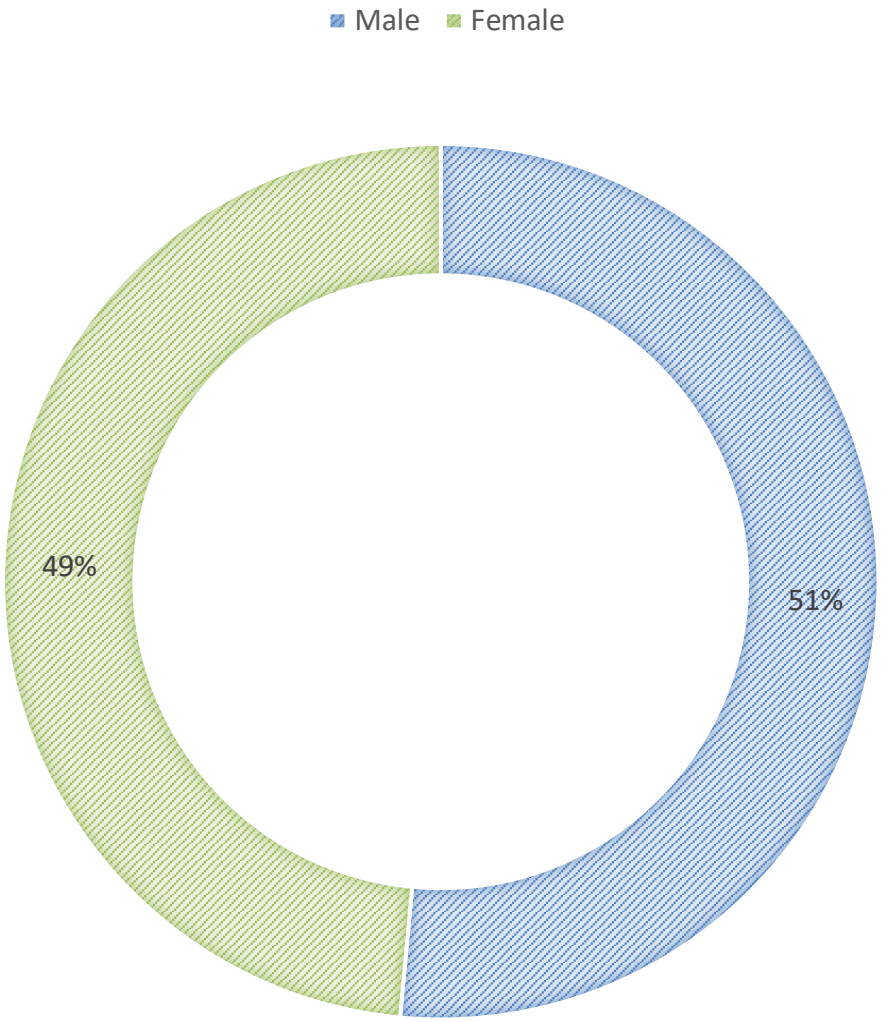
Reason for Admission – Jan’23 to July’23

East Suffolk and North Essex NHS Foundation Trust



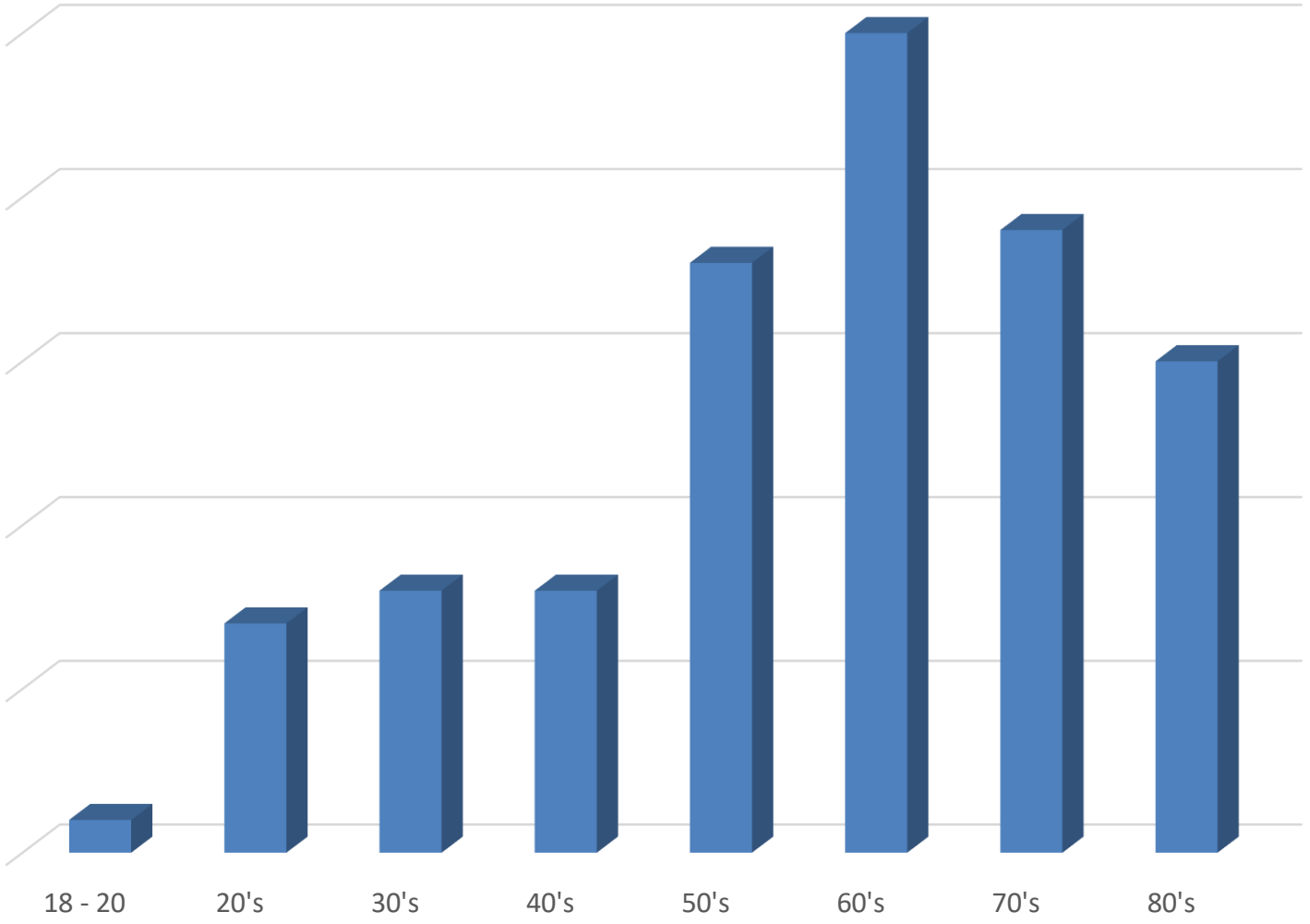
Sex Distribution – Jan’23 to July’23

East Suffolk and North Essex NHS Foundation Trust



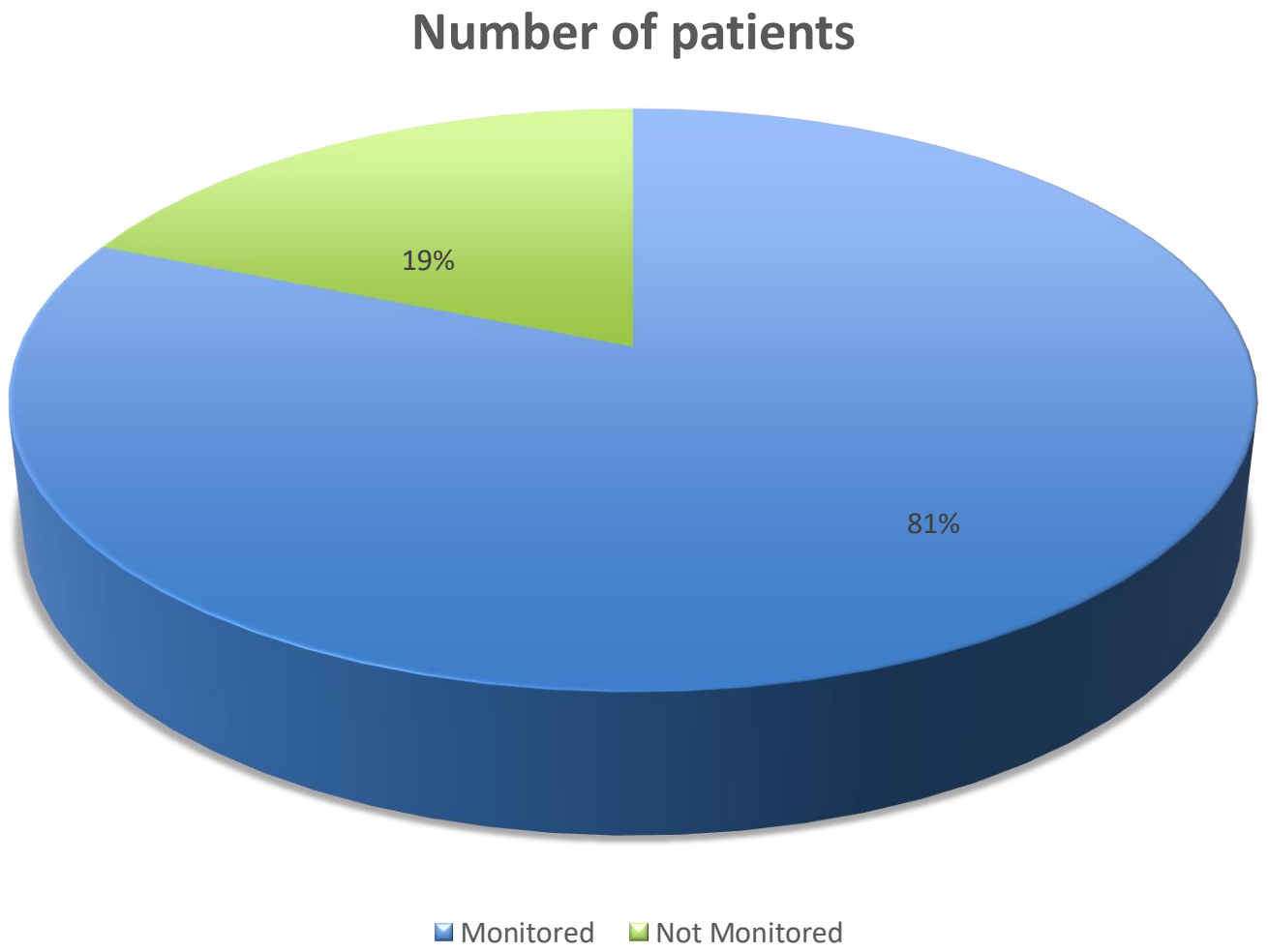
Age Distribution:

East Suffolk and North Essex NHS Foundation Trust



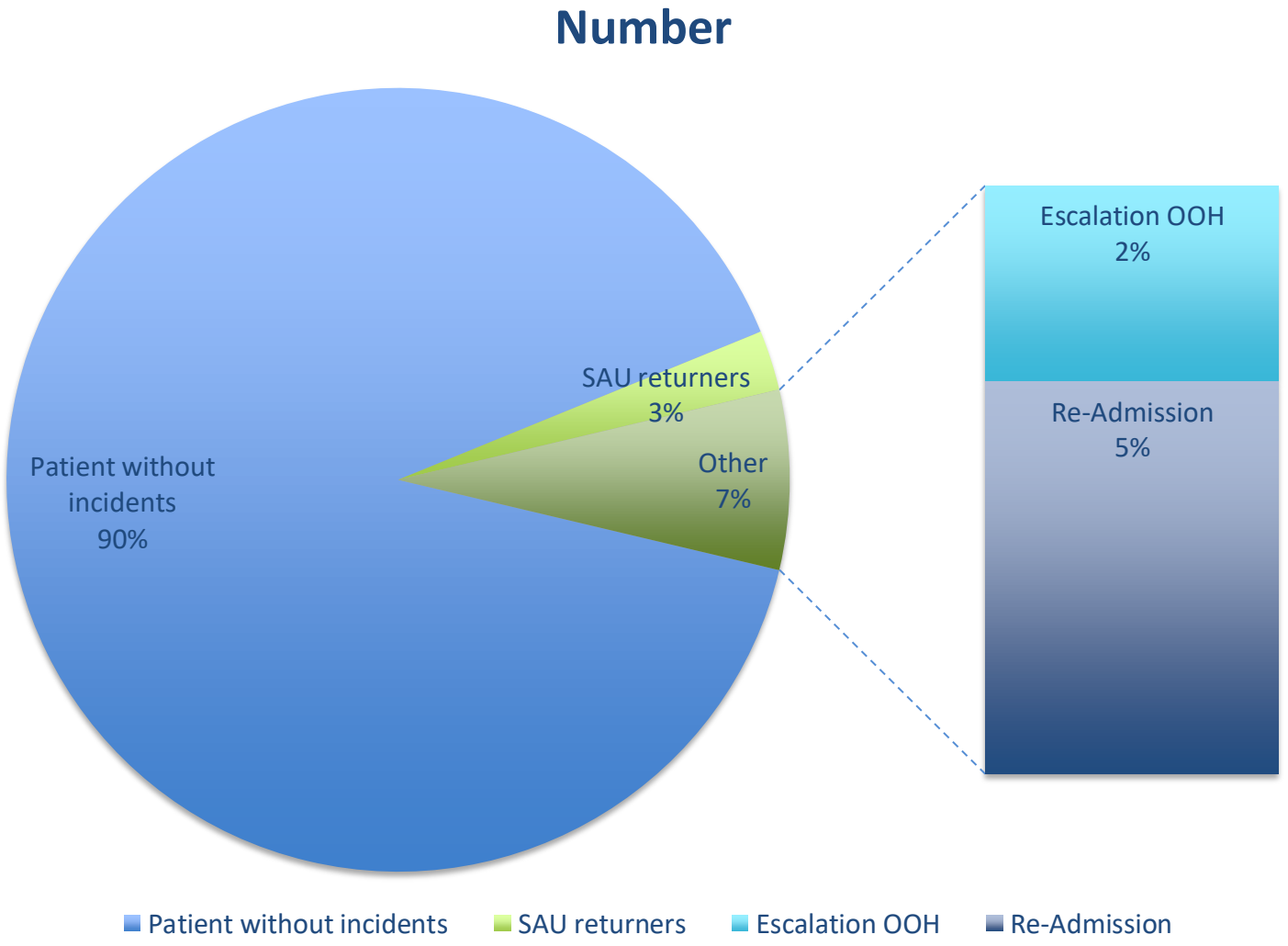
Technology enabled:

East Suffolk and North Essex NHS Foundation Trust



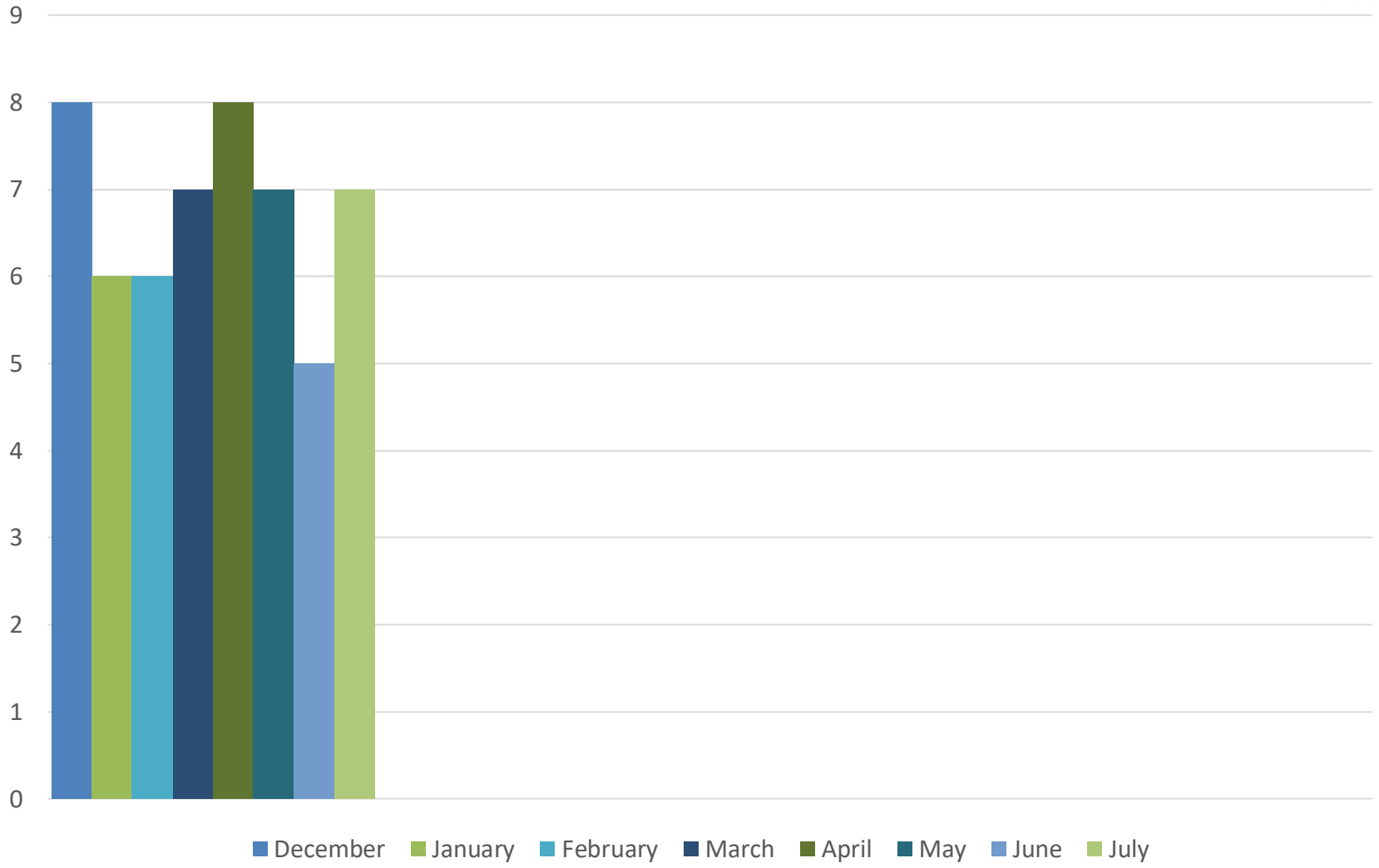
Patient Outcomes:

East Suffolk and North Essex NHS Foundation Trust



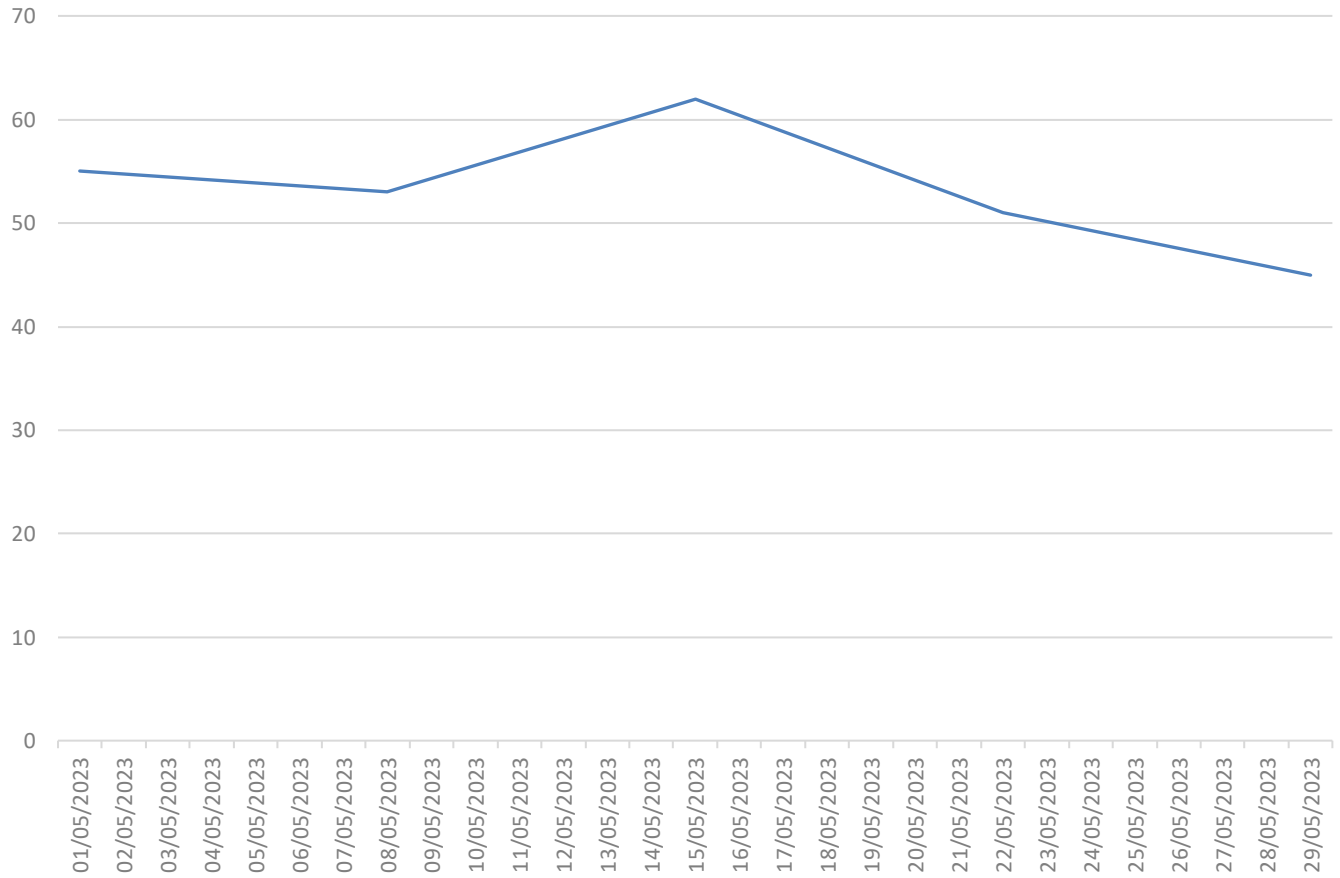
Average LOS:

East Suffolk and North Essex NHS Foundation Trust



Capacity utilised:

East Suffolk and North Essex NHS Foundation Trust



East Suffolk and North Essex NHS Foundation Trust

Real life patient experiences…

Case study 1:

East Suffolk and North Essex NHS Foundation Trust

- 52 year old Female
- Admitted to the virtual ward after <24 hours in hospital after being admitted for symptoms consistent with Biliary colic.
- Completed a course of antibiotics on the virtual ward and observations were monitored as well as pain. Dietary advice was given on the virtual ward with regards to low fat diet as well as pain management advice to help manage pain symptoms and avoid readmission. Once pain was under control and observations were stable, she was discharged from the virtual ward.
- Length of stay on the virtual ward = 7 days

Case study 2:

East Suffolk and North Essex NHS Foundation Trust

- 58 year old Female

- Admitted with PR bleeding, diarrhoea and abdominal pain. CT showed pancolitis.

- Discharged to virtual ward after 2 days in hospital. Observations were monitored. During one day where her symptoms were especially severe, she required escalation to surgical registrar on call. We reviewed the observations and continued management at home. She was prescribed anti emetics on the virtual ward to provide relief for her nausea which was effective. Gradually her symptoms improved

- Time spent on virtual ward = 13 days

Case study 3:

East Suffolk and North Essex NHS Foundation Trust

- 39 year old Male
- Admitted to the virtual ward for post operative monitoring of his observations after undergoing a robotic completion protectomy.
- He was admitted onto the virtual ward day 3 post surgery. Observations on the virtual ward remained stable. Reviewed in SAU whilst on the virtual ward to assess discharge from protectomy wound and had some fluid drained from the area. Back on the virtual ward observations were monitored and once they were stable he was discharged from the virtual ward.
- Length of stay on the virtual ward = 7 days

Case study 4:

East Suffolk and North Essex NHS Foundation Trust

- 56 year old Female
- Admitted to the virtual ward after <24 hours in hospital after being admitted with LIF and Left groin pain. CT scan showed sigmoid colitis.
- Referred to virtual ward with oral antibiotics to monitor for evidence of worsening colitis via observations and daily review. Patient was commenced on liquid diet for 48 hours. Observations on the virtual ward remained stable and clinical condition gradually improved. Once eating and drinking normally, patient was discharged from the virtual ward.
- Length of stay on the virtual ward = 7 days

Case study 5:

East Suffolk and North Essex NHS Foundation Trust

- 26 year old Male
- Referred to general surgery with pain around stoma site. Underwent a washout of infected haematoma and closure of partial dehiscence of wound site.
- Admitted to the virtual ward after 6 days in hospital. Observations monitored via Huma platform for evidence of worsening infection and patient was able to upload pictures of wound for review. Whilst on virtual ward, attended SAU for bloods which were chased on virtual ward and a wound review. Once wound was assessed to be healing satisfactorily he was discharged from the virtual ward.
- Length of stay on virtual ward = 8 days

Case study 6:

East Suffolk and North Essex NHS Foundation Trust

- 31 year old Female

- Admitted to hospital with acute appendicitis. Underwent appendectomy. Transferred to the Virtual Ward 2 days post surgery. Observations on the virtual ward remained stable (initially BP was rather low but improved with advice re fluid intake). Developed evidence of post op wound infection on the virtual ward, assessed via video call and picture uploads. Able to prescribe antibiotics for wound infection, laxatives to help with bowels and further analgesia on the virtual ward. Also reassurance and advice was given to prevent readmission. Post op recovery continued to progress well and she was subsequently discharged from the virtual ward.

- Length of stay = 11 days

What our patients have said:

East Suffolk and North Essex NHS Foundation Trust

"I found the personnel very polite and helpful. I was not computer literate so I found it a little stressful at times. I think that it would be beneficial if patient or career whomsoever is to send information to the virtual ward, should go through procedure twice, to make sure that the person is confident on what they are doing. This applies to elder persons like myself in particular. "

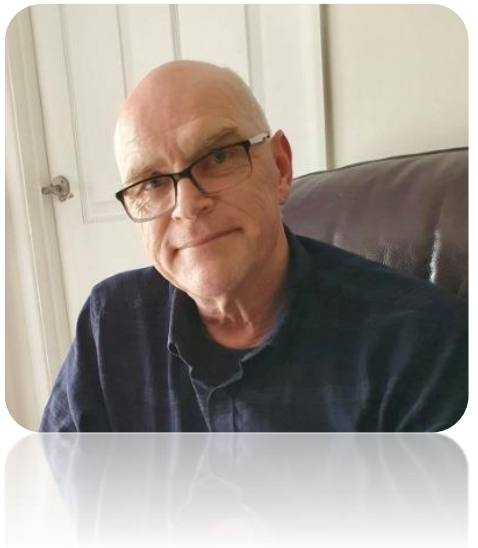
"The care and support from the Virtual ward was excellent and quite comforting to know somebody was checking on you."

"The care and attention to allow me to recover at home with this service was amazing. The messages after reporting daily ops gave assurance and confidence if my health deteriorated 24/7 and a Daily Doctor call allowed any questions worry and advice to be discussed"

Patient story:

East Suffolk and North Essex NHS Foundation Trust

Hairdresser Andrew Wash had emergency surgery for a twisted bowel over the Easter weekend. Being able to recover at home on a virtual ward, helped him to feel better more quickly and be supported by his family.



Andrew Wash

And just a few weeks later he was back on his feet in his hairdressing salon in Wickham Market, near Woodbridge.

Andrew, 60, said: “I felt much better once I was at home.
“When you’re in hospital you still feel like a patient. When you get home, you know you’ve come through it and can start to do your own thing.”

Andrew spent around five days in hospital following the surgery so that clinicians could be sure his bowel was working properly again.

He felt well in himself so once the clinical team was satisfied with his progress it was suggested that he could be looked after at home on a virtual ward.

He said: “By this time I was really just lying in bed having my blood pressure taken, everything else was fine.”

Andrew was looked after on the virtual ward for around ten days, monitoring his own oxygen levels, temperature and blood pressure.

He said: “I felt very comfortable being at home and being able to record any symptoms.
“It was very easy to do and you can’t forget because the app reminds you. “They (the virtual ward team) downloaded the app for me while I was in hospital, which was helpful, but it was all very self-explanatory.”

Challenges:

East Suffolk and North Essex NHS Foundation Trust

- Lack of initial vital clinical buy-in on virtual wards
- Lack of awareness and understanding about what virtual wards actually mean
- The use of virtual wards to “safety net” clinicians and give them the confidence to discharge low-risk patients back into the community vs the need for patients to have a definite reason to reside in hospital
- Demand for further clarity around where virtual wards sit within the existing East Suffolk and North East Essex healthcare system, and in particular how they fit with community nursing services.
- Health inequalities related to virtual wards- Exclusion of those who are unable to access or use virtual ward because they lack the digital means or skills to do so or cannot access the internet

Next steps…

East Suffolk and North Essex NHS Foundation Trust

- Establish diagnostic pathways to facilitate timely investigations once patients are ‘discharged’
- Focus on early supportive discharge of elective colorectal robotic surgery patients
- Increasing occupancy and capacity
- Education and training
- Work with digital teams and suppliers to ensure we meet the highest standards for accessibility and usability
- Use data to optimise and improve delivery to improve outcomes
- Establishing clinician confidence – generate evidence by means of audit and feedback to show the positive effect of ESNEFT Virtual wards

Panel Discussion - Overcoming the Challenges of Virtual Ward Implementation

Greg Edwards
Chief Medical Officer - **Doccla**

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

Becs Winterborn
Clinical Lead Bristol, North Somerset, South Gloucestershire NHS@Home, Clinical Lead NHSE SW NHS@Home, Consultant Vascular Surgeon, Certified Coach and Trainer - **North Bristol NHS Trust**

Emil Pohl
Transformation Project Lead - **Whittington Health**

Up Next…

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Tech Solutions

boxxe's modern hospital

The Virtual Ward conference North 2023

Making Tech Human™

Contents

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Tech Solutions

Making Tech Human™

Current challenges

Capacity & resource management

Emergency department crowding

Discharge planning & transitions of care

Workflow & process inefficiencies

Care coordination & communication

A patient's care is like a game of Tetris where you must fit the right pieces in the right places.

And the key to winning Tetris?

Capacity & resource management

Increased focus on patient experience

The NHS is placing an increasing emphasis on improving the patient experience, including making it easier for patients to access care, reducing waiting times, and improving the quality of care.

Capacity & resource management

- What does now look like?
- How could we make it better?

Emergency department crowding

Use of technology

The NHS is using technology to improve patient flow and reduce bottlenecks. This includes the use of electronic medical records, appointment scheduling systems, and telemedicine.

Emergency department crowding

- In-person consultation
- On-site video triage
- At-home video consultation

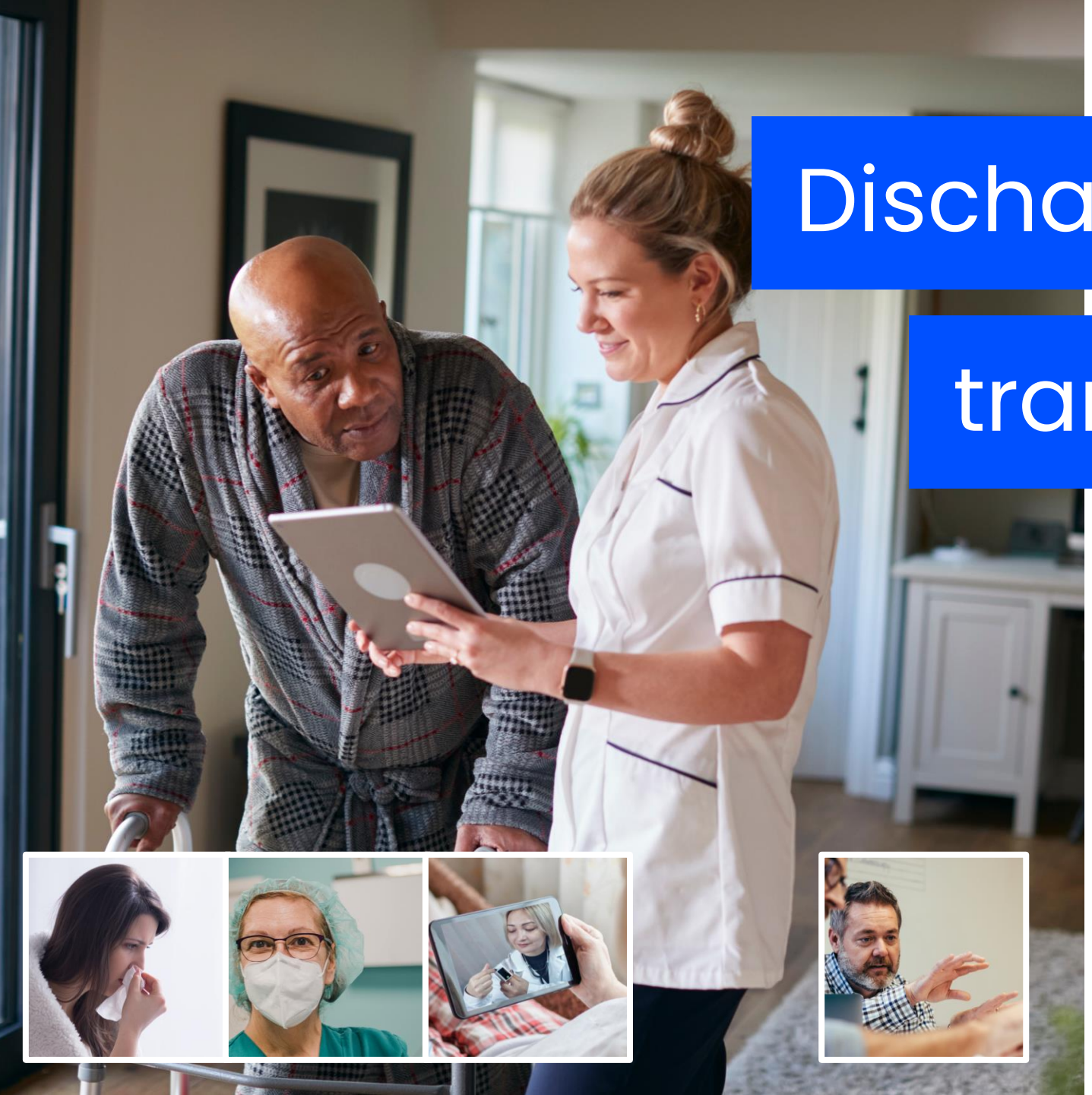
Care coordination & communication

Integration of care

The NHS is working to better coordinate care across different settings and providers, with the goal of improving patient flow and reducing the need for hospitalization.

Care coordination & communication

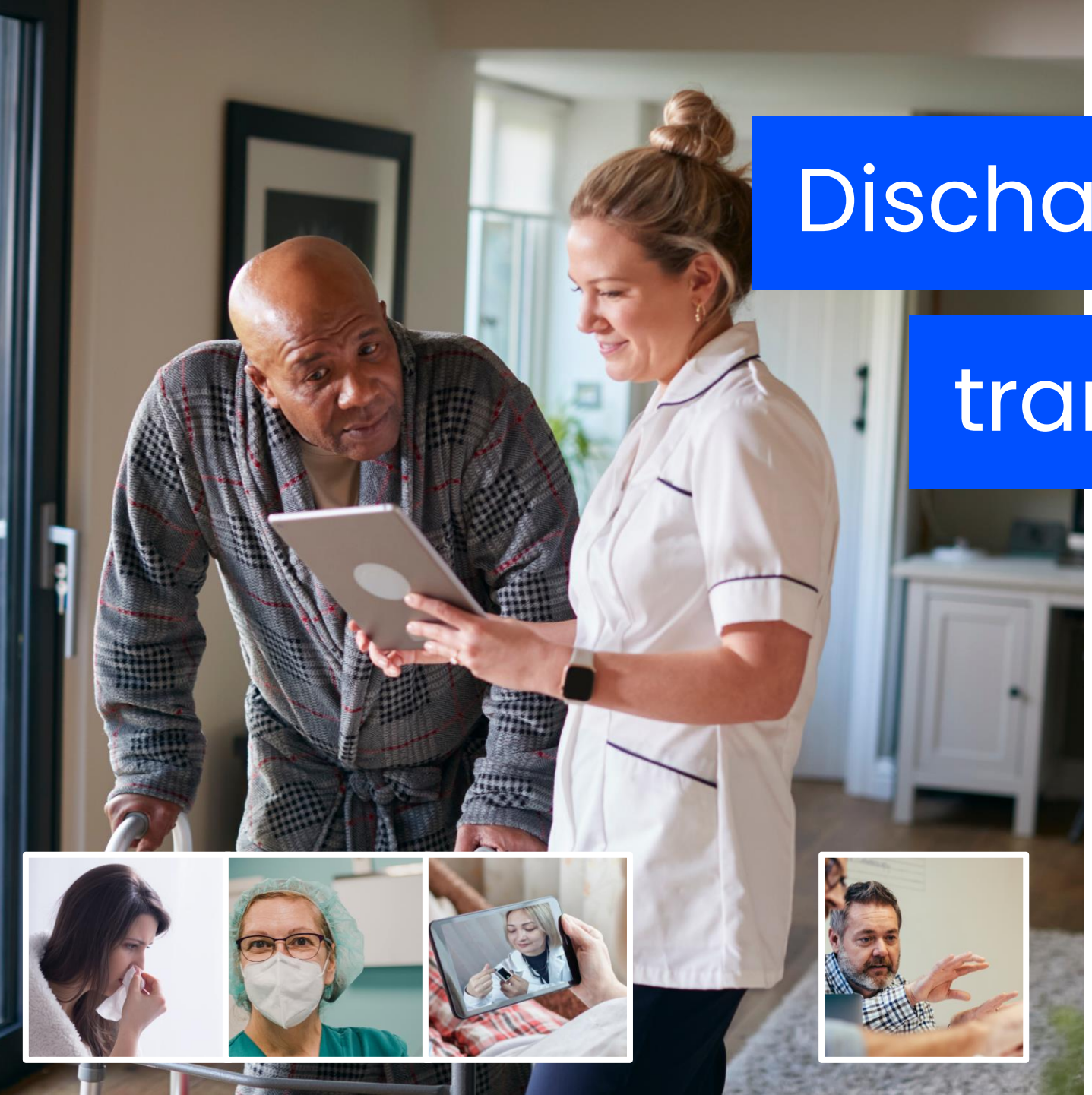
- Patient experience
- Virtual wards



Discharge planning & transitions of care

Population health management

The NHS is focusing on preventative care and population health management, with the goal of improving the health of the population and reducing demand on the healthcare system.



Discharge planning & transitions of care

- On-site assessment
- Digital Assessment

Workflow & process inefficiencies

Collaboration and partnerships

The NHS is forming collaborations and partnerships with other organisations, including community-based organisations and private providers, in order to improve patient flow and better meet the needs of patients.

Workflow & process inefficiencies

- Automation
- Virtual Assistants

Over 30 years of expertise

Working across the UK public sector in hardware, software, & IT solutions.

We understand your world immersing ourselves in your institution to drive informed solutions.

We simplify every challenge, even when they feel impossible to overcome.

We deliver sustainable, impactful solutions as an aspiring B Corp.

We collaborate with you every step of the way.

We care about your patients; their care is what matters most.

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Tech Solutions

We don't focus on hardware and software, we focus on **you**.

We strive to make life better with tech.

Tech support is becoming more connected every day, but human connections are where game changing solutions are discovered.

That's why **people** are at the heart of everything we do.

Making Tech Human™

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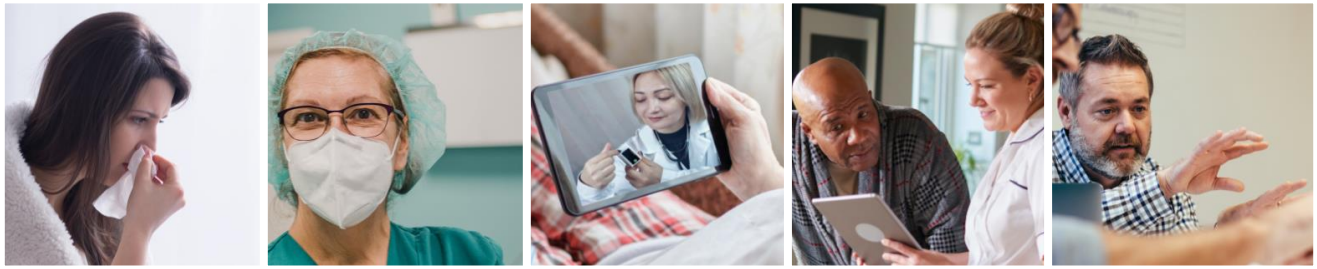
Thank you.



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Q&A Panel

Morning Break & Networking

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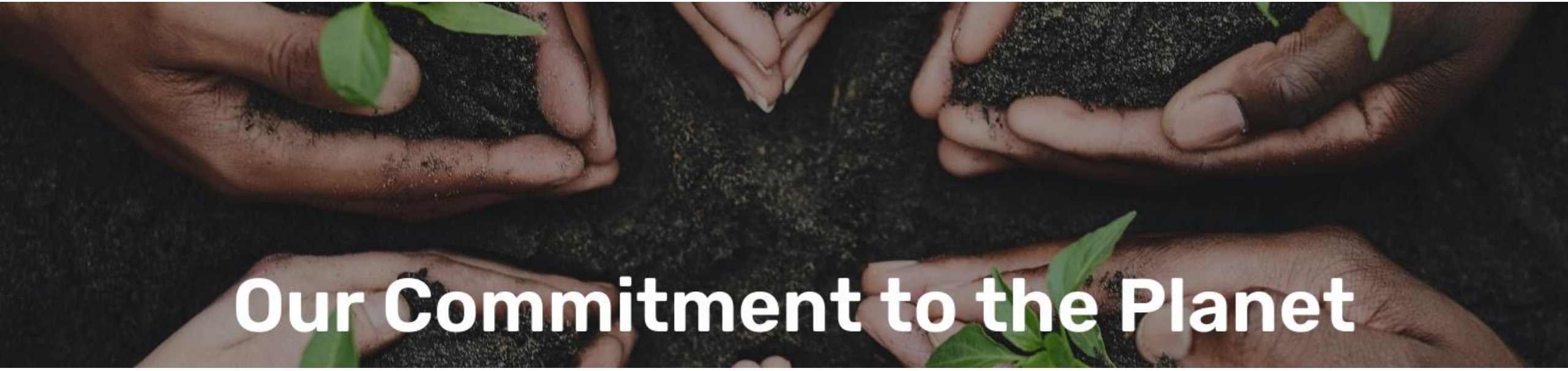

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Chair Morning Reflection

Douglas Hamandishe

Chief Digital Officer/Broadcaster and Presenter - **Context Heath and Centric Health Media**

Up Next…

Ortus-iHealth

Speaking Now…

Dr Daniel Jones

Clinical Senior Lecturer (Barts CVCTU) and Honorary Consultant Cardiologist (Barts Heart Centre) -
Barts Health NHS Trust

Risk Stratification and Virtual Ward Assisted Outpatient Angiography for Low Risk NSTEMI Patients: The Atlas Pathway

A case study of helping patients wait at home.

Presented by:

Dr Dan Jones

Consultant Cardiologist Barts Health NHS Trust

The Convenzis Outpatient Transformation Conference North 2023

Background

- 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 such as coronary angiography.
- Timely treatment is critical in avoiding adverse outcomes, including further cardiovascular events and death with national and international guidelines recommending treatment within 72-96hrs of admission for higher-risk patients.

Background

- There is considerable variation in the time from admission to angiography for NSTEACS patients and many hospitals are failing to meet the targets.
- In 2021/22, only 55% were treated within 72 hours (British Cardiovascular Intervention Society target of 75%), and 68% within 96 hours of admission [National Cardiac Audit Programme 2023 Report].
- The conventional arrangement involves patients being monitored for several days in the hospital, adding to the ongoing pressure on the NHS.

Ortus-iHealth

NHS
Barts Health
NHS Trust

Current pathway - NSTE-ACS in the UK for DGH with angiogram only facilities

A&E

MAU

CARDIOLOGY

ANGIO

DISTRICT GENERAL HOSPITAL

Cardiology consult

IHT

PCI

Tertiary Centre

Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6

Ortus-iHealth

NHS Barts Health NHS Trust

Current pathway - NSTE-ACS in the UK for DGH with angiogram only facilities

NSTEMI/unstable angina: early management

NICE National Institute for Health and Care Excellence

Initial antiplatelet therapy - Offer a 300-mg loading dose of aspirin and continue aspirin indefinitely unless contraindicated
Initial antithrombin therapy - Offer fondaparinux unless high bleeding risk or immediate angiography. Think about choice and dose of antithrombin if high bleeding risk (advancing age, bleeding complications, renal impairment, low body weight). Consider unfractionated heparin with dose adjusted to clotting function if creatinine above 265 micromoles/litre

Use established risk scoring system, such as GRACE, to predict 6-month mortality and risk of cardiovascular events. Include in the risk assessment clinical history, physical examination, resting 12-lead ECG and blood tests (troponin I or T, creatinine, glucose, haemoglobin). Balance possible benefits of treatment against bleeding risk.

Low risk
(predicted 6-month mortality ≤ 3%)

Consider conservative management without angiography but be aware that some younger people may benefit from early angiography

Offer ticagrelor with aspirin unless high bleeding risk
Consider clopidogrel with aspirin, or aspirin alone, for high bleeding risk
Consider ischaemia testing before discharge

Consider angiography (with follow-on PCI if indicated) if ischaemia develops or shown on testing

Intermediate or higher risk
(predicted 6-month mortality > 3%)

Offer immediate angiography if clinical condition unstable
Otherwise, consider angiography (with follow-on PCI if indicated) within 72 hours if no contraindications such as comorbidity or active bleeding

If no separate indication for oral anticoagulation, offer prasugrel* or ticagrelor with aspirin. If a person has a separate indication for oral anticoagulation, offer clopidogrel with aspirin. Only give prasugrel once PCI intended
Offer systemic unfractionated heparin in catheter laboratory if having PCI
Offer a drug-eluting stent if stenting indicated

*For people aged 75 and over, think about whether bleeding risk with prasugrel outweighs its effectiveness

If follow-on PCI not done, consider angiography findings, comorbidities and risks and benefits when discussing management strategy with the interventional cardiologist, cardiac surgeon and the patient

Assess left ventricular function for NSTEMI
Consider assessing for unstable angina

Cardiac rehabilitation and secondary prevention

This is a summary of the recommendations on early management of unstable angina and NSTEMI from NICE's guideline on acute coronary syndromes. See the guideline at www.nice.org.uk/guidance/NG185

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NHS Barts Health NHS Trust

The Atlas Pathway

The Solution

- Technology-enabled remote monitoring and virtual wards have the potential to monitor patients while waiting for treatment at home.
- For low-risk patients with NSTEACS this could facilitate discharge allowing them to wait at home for their coronary angiography whilst being monitored on a digital virtual ward, resulting in shorter hospital stays, cost-savings and improved healthcare efficiency.

ATLAS Pathway

- We therefore designed and implemented a novel virtual ward-assisted outpatient angiography pathway (ATLAS) for low-risk patients presenting with NSTEACS. The goals set were
- 1). to safely discharge patients onto a virtual ward whilst waiting for angiography. 2). Improve patient satisfaction 3). Reduce waiting times 4). Result in cost savings

Ortus-iHealth

NHS
Barts Health
NHS Trust

History: Ortus at Barts

1. V1 Created in 2017-2018
2. Cardiac Virtual Clinic & Remote monitoring project
3. Rapid Expansion during Covid
    1. Oncology
    2. Respiratory
    3. Endocrinology

Platform Overview

Access

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

Clinics & Consultations

Clinic and V-Clinic modelling, delivery, automation, appointments and Consults

Track, Discharge & Share Outcome Data

Clinic, Population, PAS & EPHR

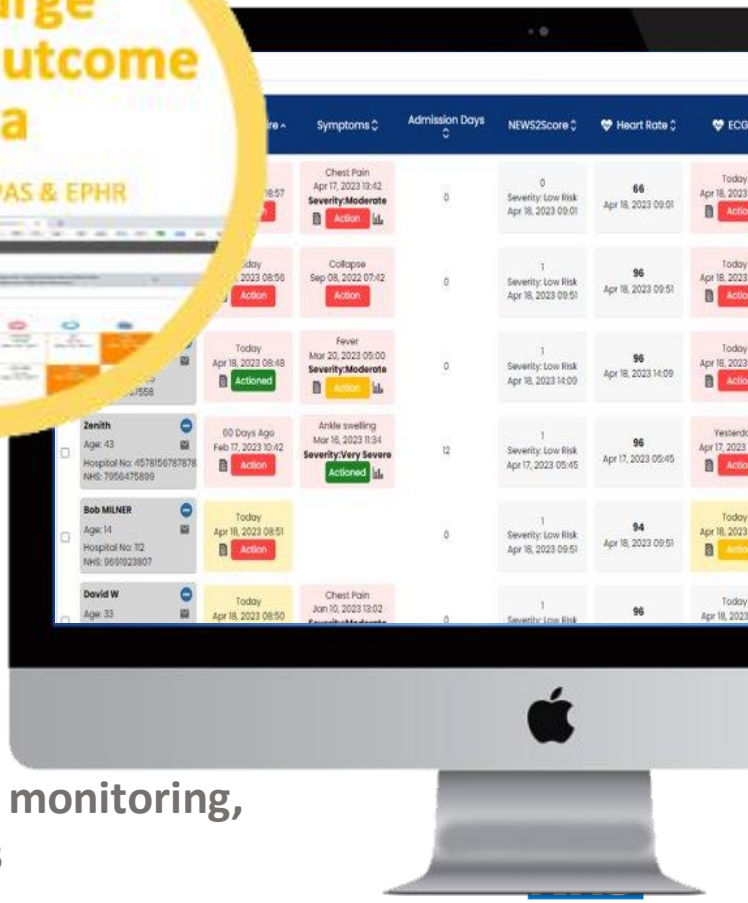
Assessment

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

Remote Monitoring

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

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Barts Health NHS Trust

Build Your Patient Journey

Build Your Service Pathways

- Pre clinic Questionnaire
- PIFU: Prioritise Patients
- Remote monitoring
- Vital Observations
- Symptoms tracking
- Deteriorating patient alerts
- Asynchronous messaging
- Health education & rehab
- Medication updates & advice

Patients in the Community

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

Ortus-iHealth

The Atlas Pathway Inclusion Criteria

- Grace score (<140)
- Pain-free>48 hours
- Minimal or no ST segment change
- Moderate biomarker rise
- Haemodynamically stable with no ventricular arrhythmias
- No evidence of new heart failure
- Discharged on optimal medical therapy
- Angiogram date set (within 1 week)

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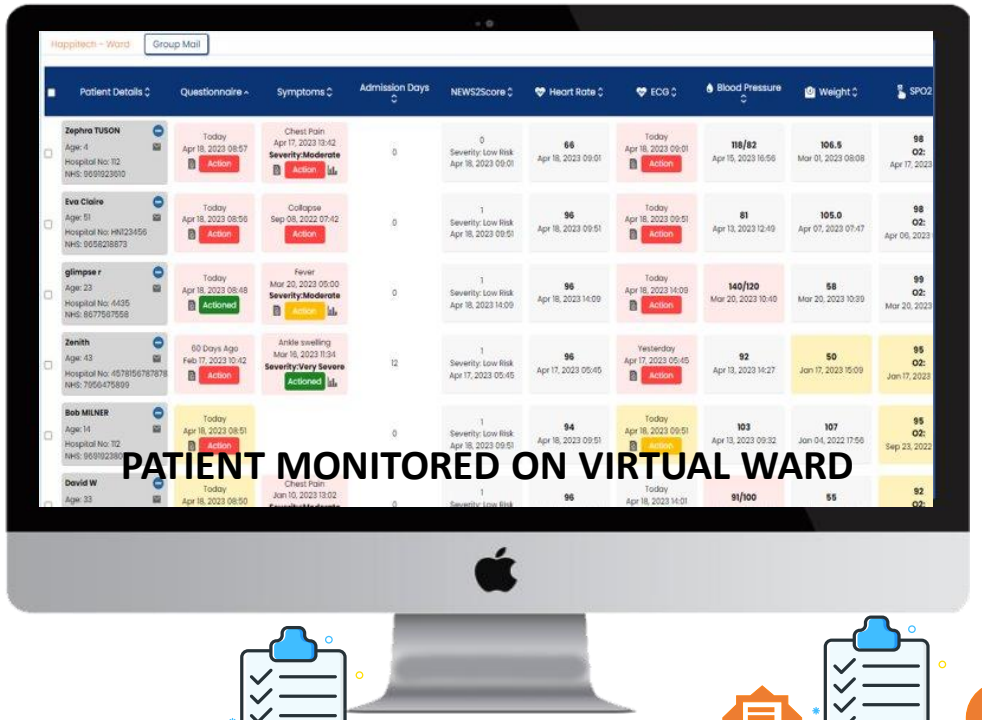
Barts Health NHS Trust

ATLAS: Patient Pathway

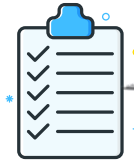
Patient has NSTEMI
And awaiting
angiogram

Patient meets
ATLAS
Criteria

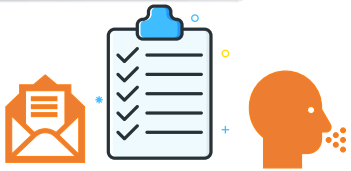
Patient on Virtual Ward
Until Angiogram



PATIENT MONITORED ON VIRTUAL WARD



Fills out daily
Cardiac Symptoms
Checker



Daily Reviews by ANP

Alerts are Actioned And Escalated

Angiogram

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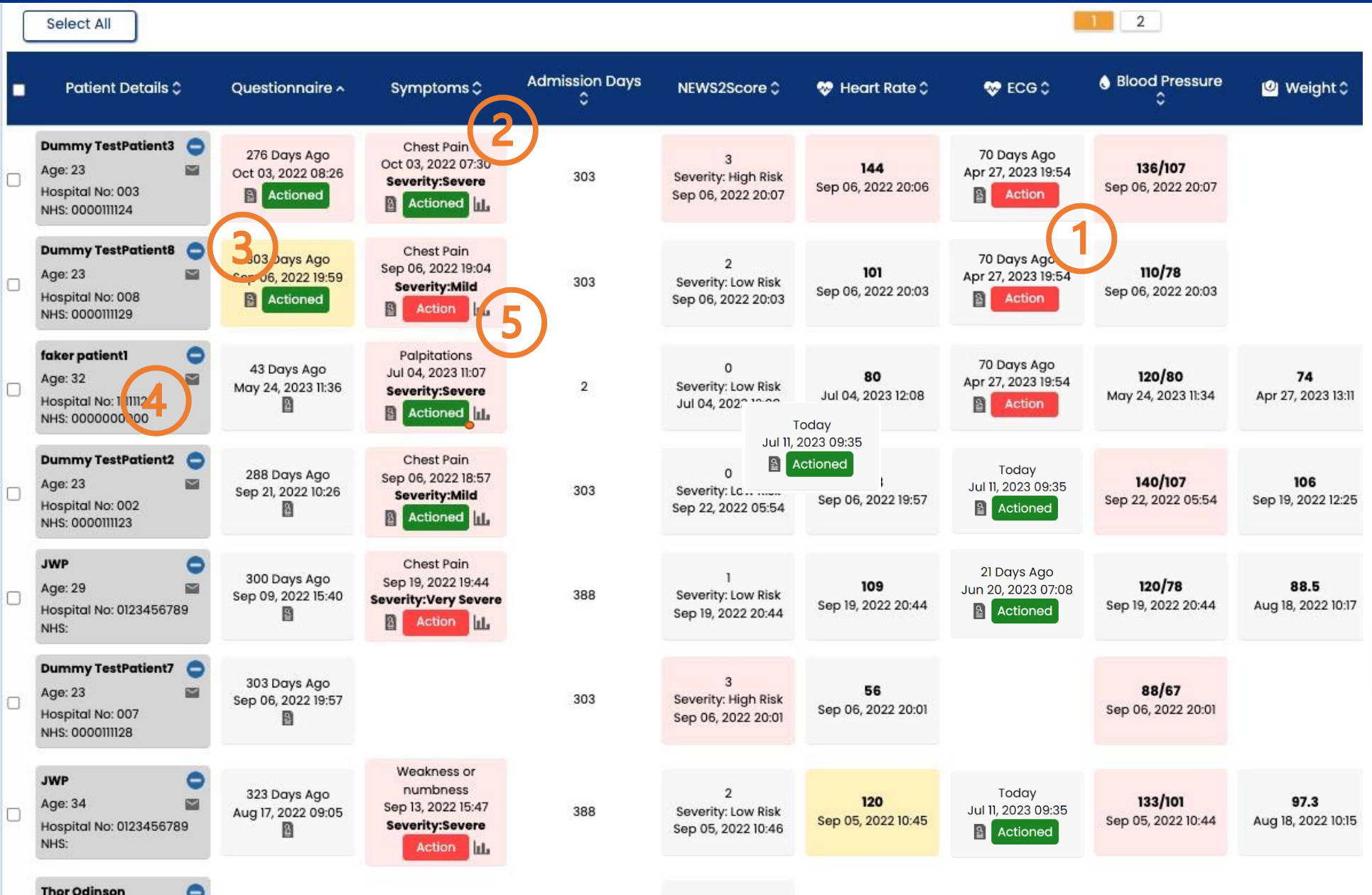
NHS Trust

Configurable & Scalable Dashboards



1. Observations Tracking

2.Symptoms Monitoring

3. Deteriorating patient questionnaire

4. Templated Individual and Group Messaging

5. Prioritise Patients and Take Action

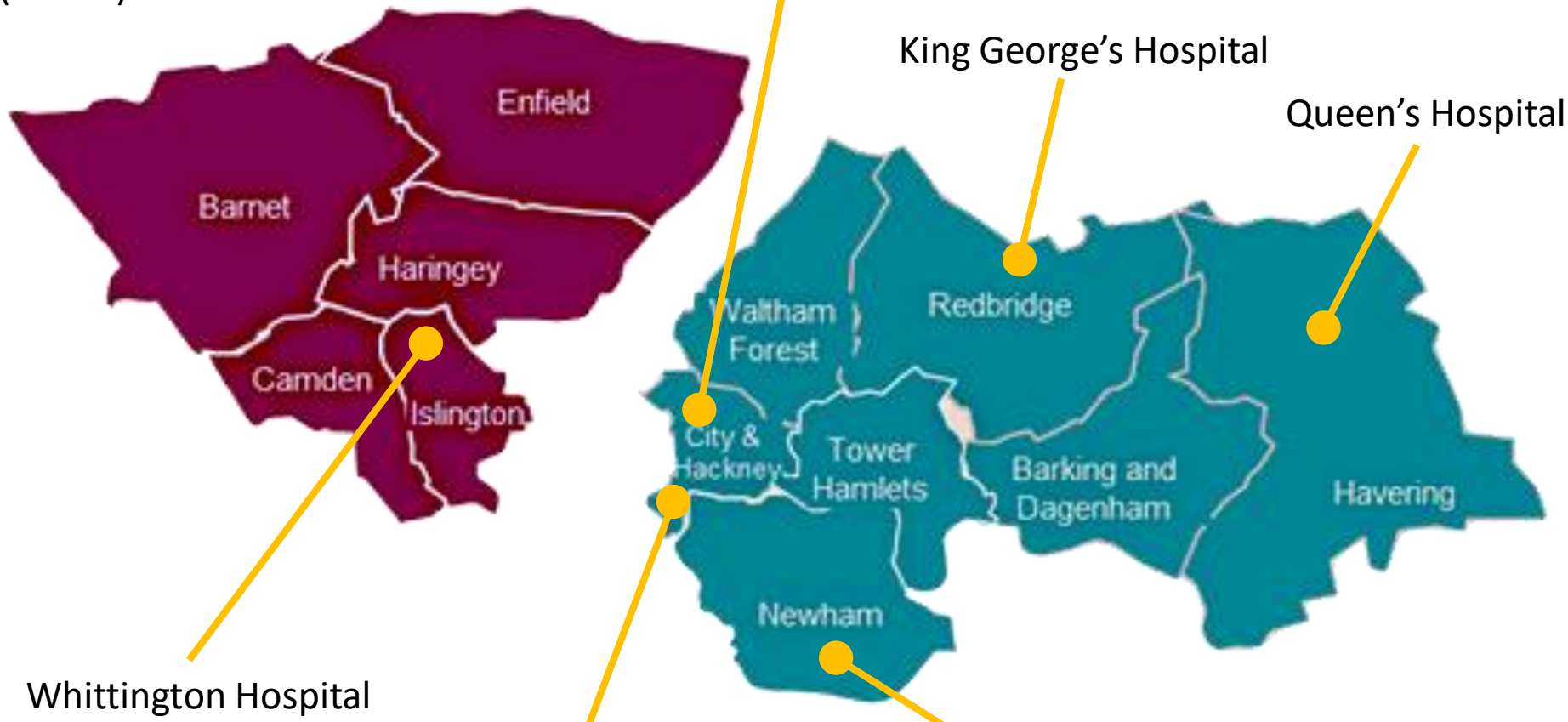
Ortus-iHealth

NHS Barts Health NHS Trust

The ATLAS Pathway to Date

- Started at 14th Oct 2022,
  Initially within Bart's Health (3 sites)
- Expanded to UCLH
  - KGH
  - Queens
  - Homerton
  - NMH
  - Whittington

  Up to 9 active DGHs



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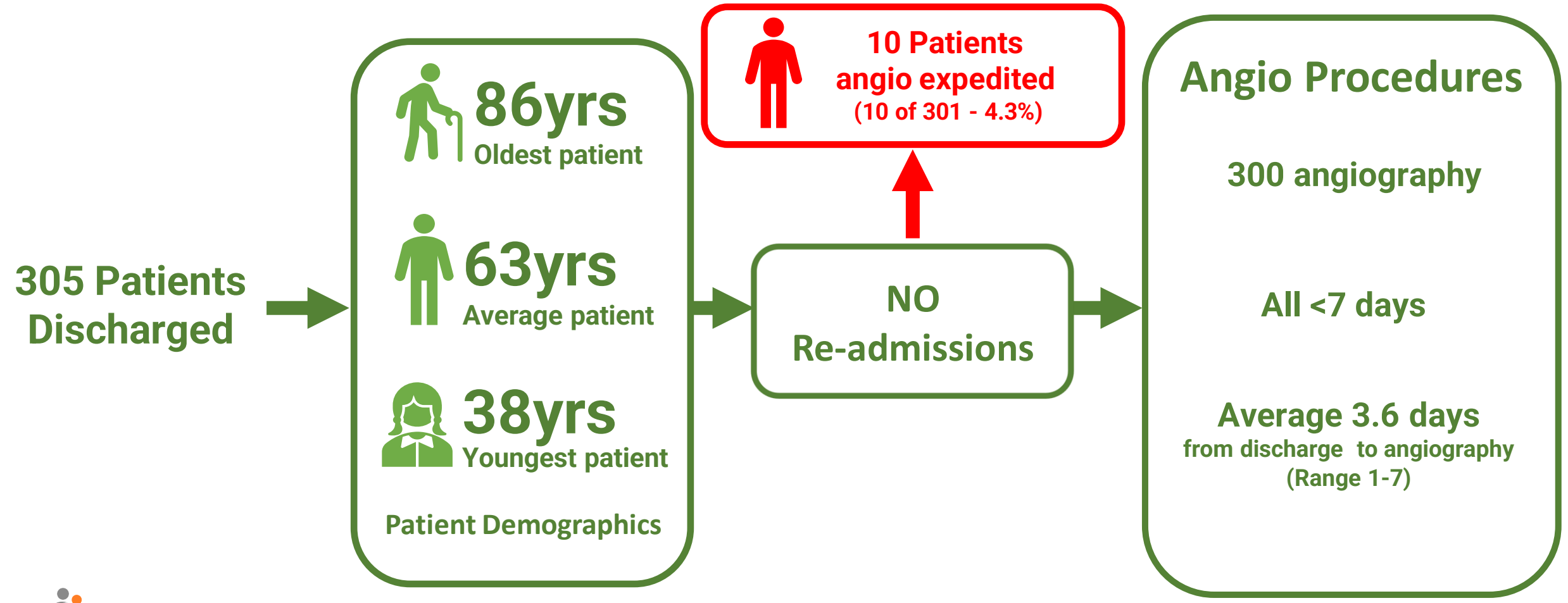
ATLAS: Key Outcomes



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NHS Barts Health NHS Trust

ATLAS: Key Outcomes

300 Qualifying Patients

Angio Outcomes

PCI 128 (42.7%)

Medical 134 (44.7%)

CABG 38 (12.6%)

NO 30-day MACE or readmission

1200 Bed days saved

£480K saved in last 6 months

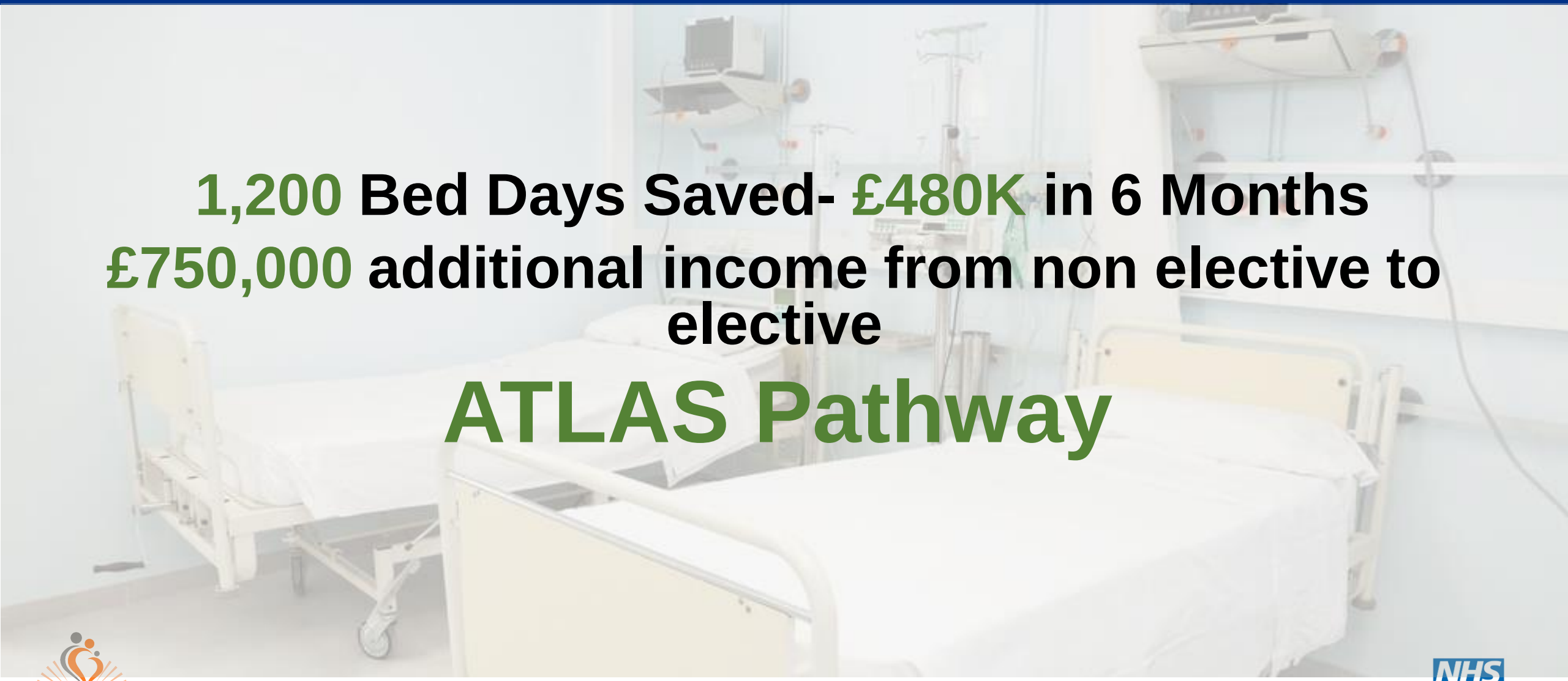
£2.5m projected saving over 12 Months

Bed Capacity Savings & Additional Income

Ortus-iHealth

NHS Barts Health NHS Trust

ATLAS: Case Study Overview



1,200 Bed Days Saved- £480K in 6 Months

£750,000 additional income from non elective to elective

ATLAS Pathway

Ortus-iHealth

Barts Health NHS Trust

The ATLAS Pathway Feedback

> Wonderful to spend a night in my own bed prior to returning for my procedure. Excellent service and was in and out very quickly.

95% felt safe on the pathway

85% would recommend to friends/family

80% felt comfortable to be d/c and wait at home

- **Satisfaction rates high (Ongoing Data Collection)**
  - 1st 50 patients surveyed
  - Generally positive feedback:
- **Areas for Improvement**
  - Extra Work/DGH Buy-in
  - Technology utilisation
    - Education for DGH (teaching sessions)
    - Phone call from ACP at 24hrs/if no Q for 3 days
  - Communication with all Stake-holders
    - Safe discharge and information
    - Internal communication with departments and operators

Summary

- How we manage NSTEMI patients has to change
- Increasing numbers place more burden on bed days and capacity on
- More with less: enhancing patient care and focusing on high-acuity patients
- Identifying low risk patients for VW assisted OP treatment
- Digitally enabled with increased low impact touch points – asynchronous messaging.
- Achieving high levels of engagement with both patients and clinical teams

Ortus-iHealth

NHS
Barts Health
NHS Trust

Questions

Ortus-iHealth

NHS
Barts Health
NHS Trust

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SCAN ME

Up Next…

CONVENZIS

Speaking Now…

Jardine Barrington Cook
Head of Interoperability and Data - **The Access Group**

access Health, Support and Care

Integrated Care Supporting Virtual Wards

Jardine Barrington Cook – Head of Interoperability and Data

access
freedom to do more

Integrating systems is *vital* to providing better care

ICSs, by integrating health and social care services, and working more closely with VCFSE providers, should aim to ensure that services are joined up, pressures are actively managed, and the interests of patients and the public are prioritized.

Hewitt Report

Critically, collaboration across health and social care has accelerated at a pace showing what we can do when we work together, flexibly, adopting new technology focused on the needs of the patient

Integration and innovation: working together to improve health and social care for all

Access in the Health and Care sector: We are unique in offering digital transformation solutions across the Care Continuum – and are already serving Virtual Wards

access Health, Support and Care

Care Providers

353,000+
care workers rostered with Access HSC Software per year

190m+ hours of home care managed per year

25% of Social Care Hours in the UK managed

200m+
hours of residential care managed per annum

Local Authorities

180+
Local Authorities using Access care solutions

15,000+
Workers use Elemental's social prescribing platform

10,500+
registered care branches and community services

NHS Trusts

45+
NHS Trusts and Organisations using healthcare solutions

687,000+
visits carried out using our Social Prescribing solution

70%
of our NHS customers rated 'Good' or 'Outstanding' in CQC

Virtual Wards

14 NHS
trusts using Access 'Rio' Software to deliver virtual services

11,629
virtual stays enabled using Access technology (in 2022)

access Health, Support and Care

We believe that four elements are required for the successful delivery of Clinically led Virtual Care

1 Provisioning Tool

Patient Needs

Provisioning Platform

Accredited Suppliers
+
Virtual Ward Bed

2 Virtual Care Co-ordination (VCC)

Single intuitive presentation layer (What you see, and how you see it)

- Communications & Remote Monitoring (How you interact with patients & stakeholders)
- Rostering / Planning / Bed Mgt / Pathway mgt (How you manage the patient & processes)
- Health / Care Record Integration (How you record)
- Reporting & Analytics (How you report, assess & predict)
- Standards, Audit, Security & Interoperability (How you safely share & receive)

Api

3 Pathway-Specific Apps

Virtual & physical tools to enable (self or assisted) measurement & assessment of specific health indicators

- 1: Frailty
- 2: Acute Respiratory Infection
- 3: Diabetes
- 4: etc

Api

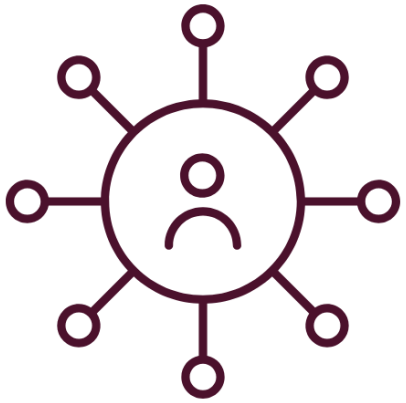
4 Interoperability

- Clinical & Regulatory reporting
- Other Clinical systems

access Health, Support and Care

Access is uniquely placed to facilitate efficient care

Access Integrated Care Platform (AICP)



All data flowing **seamlessly** from systems used **across your Trust, ICB and other areas**

Cloud based

FHIR and HL7 compliant

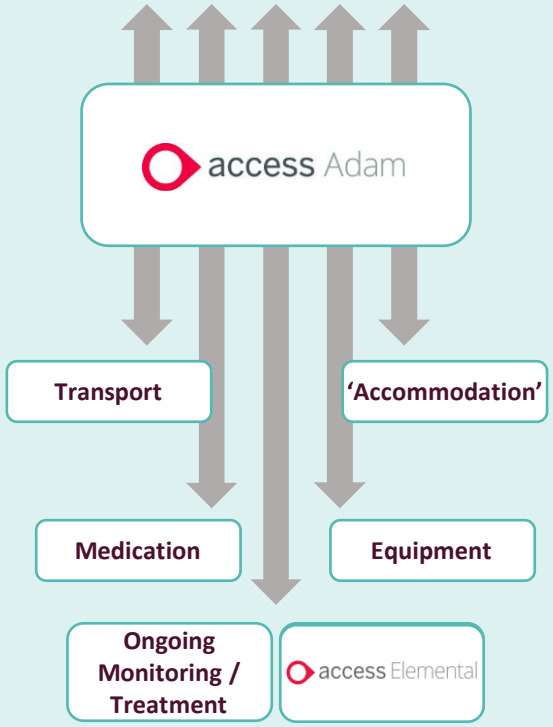
Reducing friction between the elements of the care continuum, **increasing capacity** and staff **efficiency**, and **improving the user experience**

access Health, Support and Care

Using this to support Virtual Wards

access Workspace

Patient Needs (from EPR)



Communication Interface
access Rio + Teams

Proactive Remote Monitoring
access Assure

Appointment Booking
access Rio

Rostering & Care Planning
access Care Planning
access Medication Management
access People Planner

'Bed Management'
access Patient Flow Manager

Health Record
access Rio

Care record
access Care Planning
access Medication Management

Social Care Record
access Mosaic

Reporting
Easy access to information about the individual & Stakeholders

Assessment
Easy to understand metrics against pathways & care criteria

Decision support
Tools to predict and recommend as regulated medical devices

Reporting
Provides easy access to key information about the individual or the wider universe

Standards & Data Model
Ensures all data is clear and consistent with market standards

Interoperability
Enables systems to be connected to ensure information is up to date

Personalisation | Self-service | Everything-in-one place | Pre-packaged apps | Reporting & Analytics

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Speaking Now…

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

Joe Barker
Project Manager, Digital Transformation - **Health Innovation Network**

London Remote Monitoring and Virtual Wards

Virtual Wards Conference 11th July 2023

Francesca Markland
Senior Programme Manager
Remote Monitoring and Virtual Wards

London
Digital Team
england.londondigitalteam@nhs.net

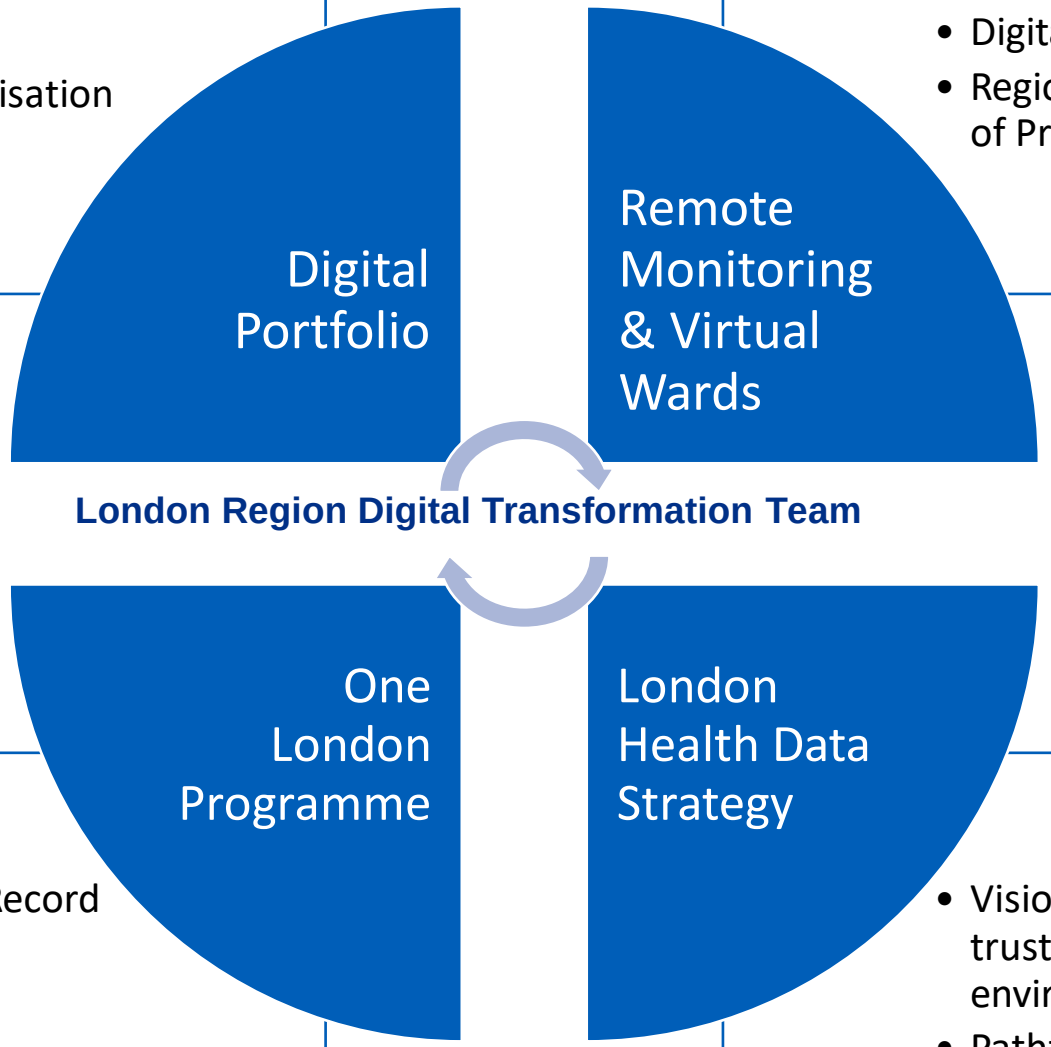
Dr Joe Barker PhD
Project Manager
Digital Transformation
Health Innovation Network

What is the London Digital Transformation Team?

NHS England London Region

- Digital First
- Digital Social Care
- Community
- Frontline Digitisation
- Mental Health
- UEC/111

- Clinical Technology Steering Group
- Digital RM/VW Lead
- Regional Community of Practice



Luke Readman is the London Region Director of Digital Transformation

Stephanie Boafor is the London Digital Lead, and **Francesca Markland** is the Senior Programme Manager for Remote Monitoring and Virtual Wards.

- London Care Record
- London Data Services
- Urgent Care Plan

- Vision to create a trusted health data environment
- Pathfinders programme

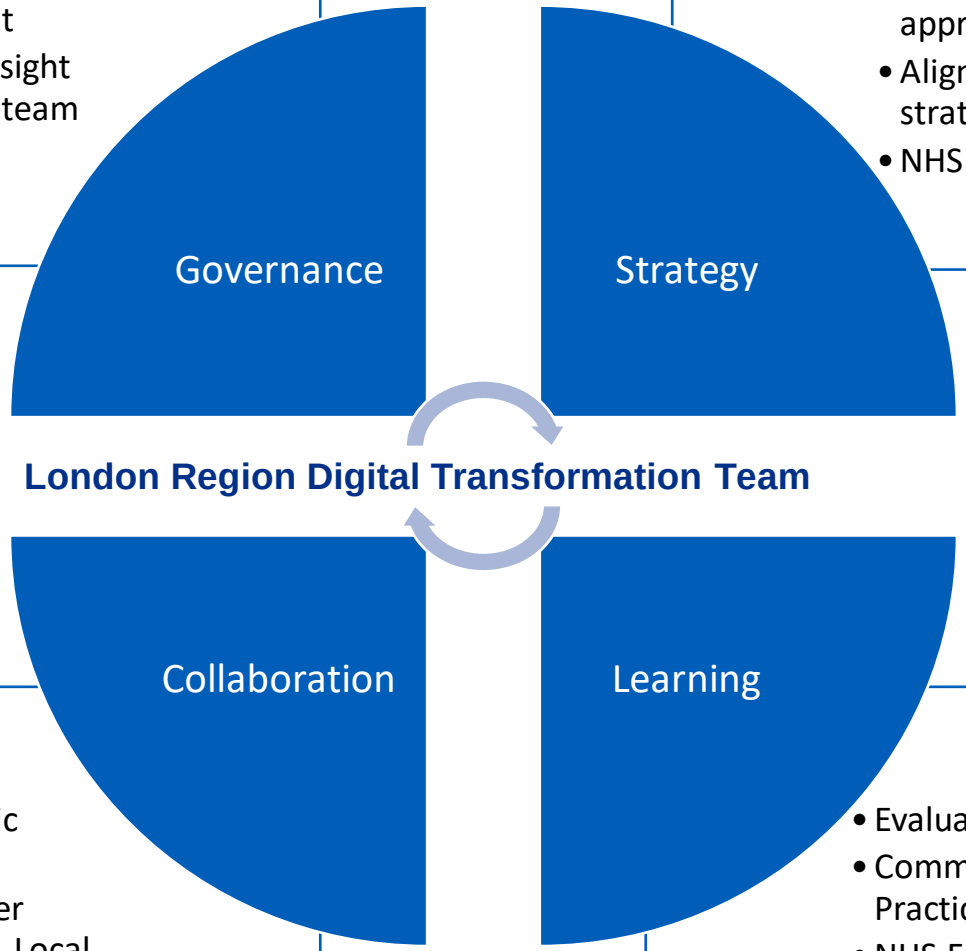
How does the London Region Digital Transformation Team support with remote monitoring and virtual wards?

NHS England London Region

- Regional Groups & Boards
- Risk management
- Programme oversight with Clinical VW team

- OneLondon vision
- Pan-London strategic approaches
- Alignment with national strategies
- NHS Greener Agenda

Risks, issues and challenges are brought to the Clinical Technology Group.



Regional partnership working with ICBs and AHSNs, facilitates sharing and learning across London

- Patient and public engagement
- Wider stakeholder relationships e.g. Local Authorities
- Communications

- Evaluations
- Communities of Practice
- NHS Futures site
- AHSN partnerships

What did London learn from the Regional Scaling Programme?

NHS England London Region

Regional Scaling Programme

- **London delivered to 90,604 patients** from Nov 2020 to Jan 2023.
- **Tech-enabled virtual ward projects were rolled out in NWL and SWL** implementing remote monitoring hubs to support multiple pathways
- Care Sector projects to **Care Homes** including LD homes
- **Long-term condition management** including primary care hubs
- **Digital annual physical health checks** to support people living with severe mental illness

Key Learnings

- **Considerable variance** in remote monitoring systems deployed in London
- **Interoperability** emerged as a key issue early on
- **More evidence needs to be generated** to support remote monitoring use cases
- **Patient acceptance of remote monitoring was good**; device usability and training was an important factor in this
- **Digital transformation resources are key** to successful implementation and embedding of remote monitoring

Key ICB Feedback

- **Solutions must integrate easily with existing EPR** (Trust, community & primary care)
- The need for **significant customisation requires additional resourcing** (staff and time) and can be a significant risk to implementation
- **Supplier relationships are key to the success** (or not) of a programme; sharing soft intelligence can help inform decisions
- Procurement was impacted by quick turnaround expectations and **supplier evidence limitations**

Regional Scaling Programme

NHS England London Region

Programme

Delivery to over 90K patients

- Care Sector LTC/VWs Mental Health
- 12 Remote Monitoring suppliers
- 9 clinical pathways and conditions

Benefits

Benefits coaching programme

- ICS Benefits registers and logic maps
- Individual ICS AHSN evaluations

Evaluation

Care Homes report
VWs and LTC report

- Pan-London Reports summarising local evaluations

NHSE London
Remote Monitoring and Virtual Wards

@HINSouthLondon
@amanda_begley
healthinnovationnetwork.com

Summary of report by the Health Innovation Network for NHS England (London Region) Digital Transformation

Health Innovation Network South London

NHS England London Region

The Health Innovation Network

Speeding up the best in health and care, together

The HIN is the Academic Health Science Network for south London, hosted by Guy's & St Thomas' NHS Foundation Trust.

Working closely with our partners, we deliver a wide range of projects and programmes aligned to our strategic priorities:

- Ensuring south London benefits from national innovation priorities which address health inequalities
- Supporting innovators and the health and care workforce to achieve faster adoption of innovations and drive economic growth
- Delivering health and care change programmes, with a focus on long-term conditions and mental health
- Evaluating the effectiveness of innovations in real-world settings and generating evidence to identify which innovations should be adopted in health and care
- Building a sustainable, resilient, diverse and joyful organisation

Innovator support and industry partnerships

Innovation selection and implementation support

Health and care programmes

Capability and community building

Evaluation & Implementation Science

Why Virtual Wards and remote monitoring?

Capabilities of remote monitoring technology

Clinician-facing features

- Monitoring
- Sorting patients
- Dashboard features
- Configuring alerts

Patient-facing features

- Clinician-patient interaction
- Patient notifications
- Patient journey support & education

Additional & advanced features

- Hardware agnostic
- Behavioural and environmental monitoring
- Fully customisable protocols & pathways
- Extensive device integration

NHS England – London Region and the Health Innovation Network's Virtual wards/remote monitoring technologies work programme

Review of the remote monitoring market and technology adoption in London

Technical specification for procuring virtual ward technologies

Research into **partnership working** to accelerate the remote monitoring market

Getting the right **data** in the right place at the right time to deliver care and evaluate services

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The landscape in London

KEY

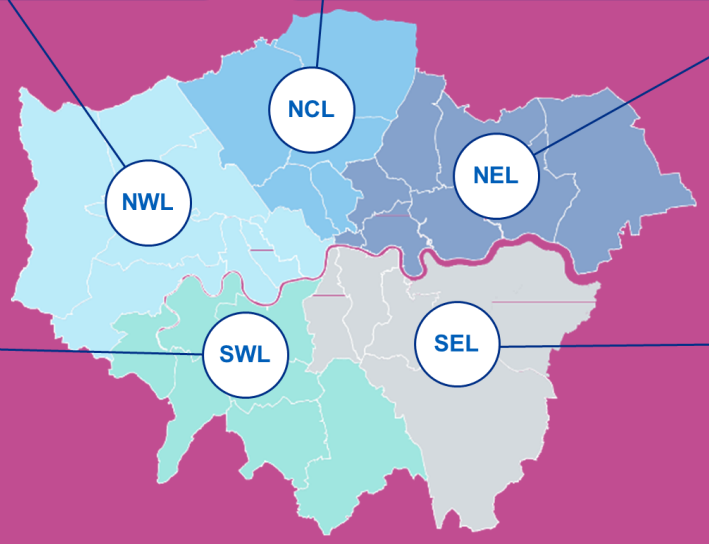
- Virtual Ward
- Long Term Condition Management
- Care Homes
- Mental Health

Additional information in bold
Suppliers in italics

- **Acute sector, COVID;** *Huma*
- **Early Supported Discharge;** *CurrentHealth*
- **Frailty;** *Inhealthcare*
- **Diabetes**; *Huma and Inhealthcare*
- **COPD, Heart Failure;** *Luscii*
- **Annual Physical Health Check (APHC);** *Inhealthcare* (Planned; not yet live)

- **COVID**; *Huma*
- **Frailty;** *Whzan*
- **COPD**; *Mymhealth*
- **Diabetes**; *Mymhealth*
- **APHC;** *PKB Abbot/Whzan*
- **ECG**; *Kardiamobile*

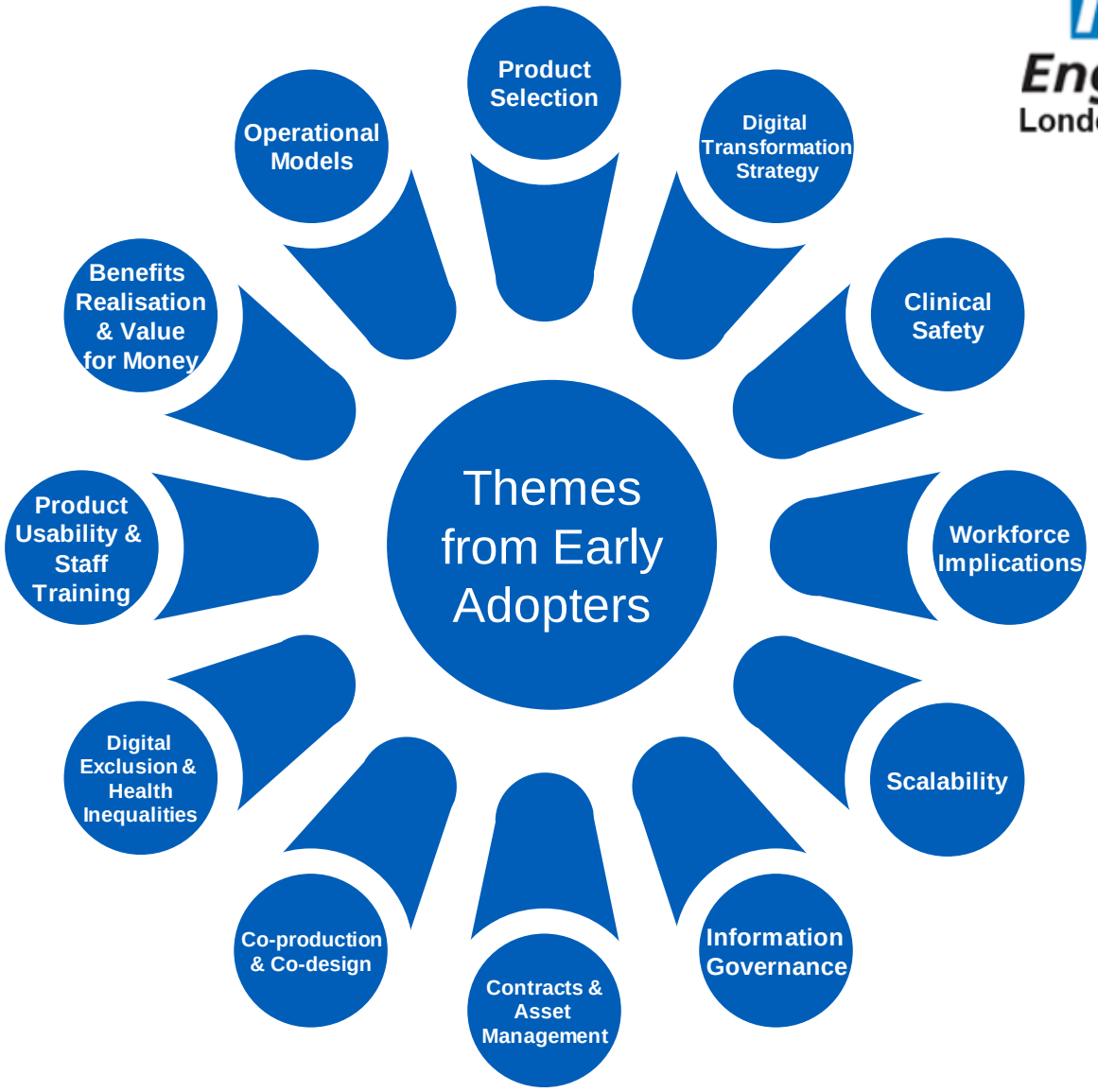
- **COVID**; *OneContact*
- **Frailty**; *Feebris & Inhealthcare*
- **Check ups**; *OneContact*
- **ECG**; *Kardiamobile*
- **APHC;** *PKB Abbot, Whzan*



- **Central SWL hub;** *CurrentHealth* (Planned; not yet live)
- **COVID, Frailty, LTC;** *Vcare*
- **Frailty;** *Whzan*
- **Frailty;** *Vcare*
- **Diabetes**; *You & Type 2*
- **Croydon**; *CurrentHealth*
- **Sutton**; *Vcare*
- **APHC;** *Whzan* (Planned; not yet live)
- **ECG**; *Kardiamobile* (Planned; not yet live)

- **COVID**; *Doctaly*
- **Frailty;** *Docobo & Doctaly*
- **Diabetes**; Docobo
- **Ashthma, COPD, Diabetes, Hypertension;** *Doctaly*

Lessons learned



Examples of lessons learned

Product Selection

- Map local pathways
- Produce a detailed specification
- Engage with existing users

Usability and Training

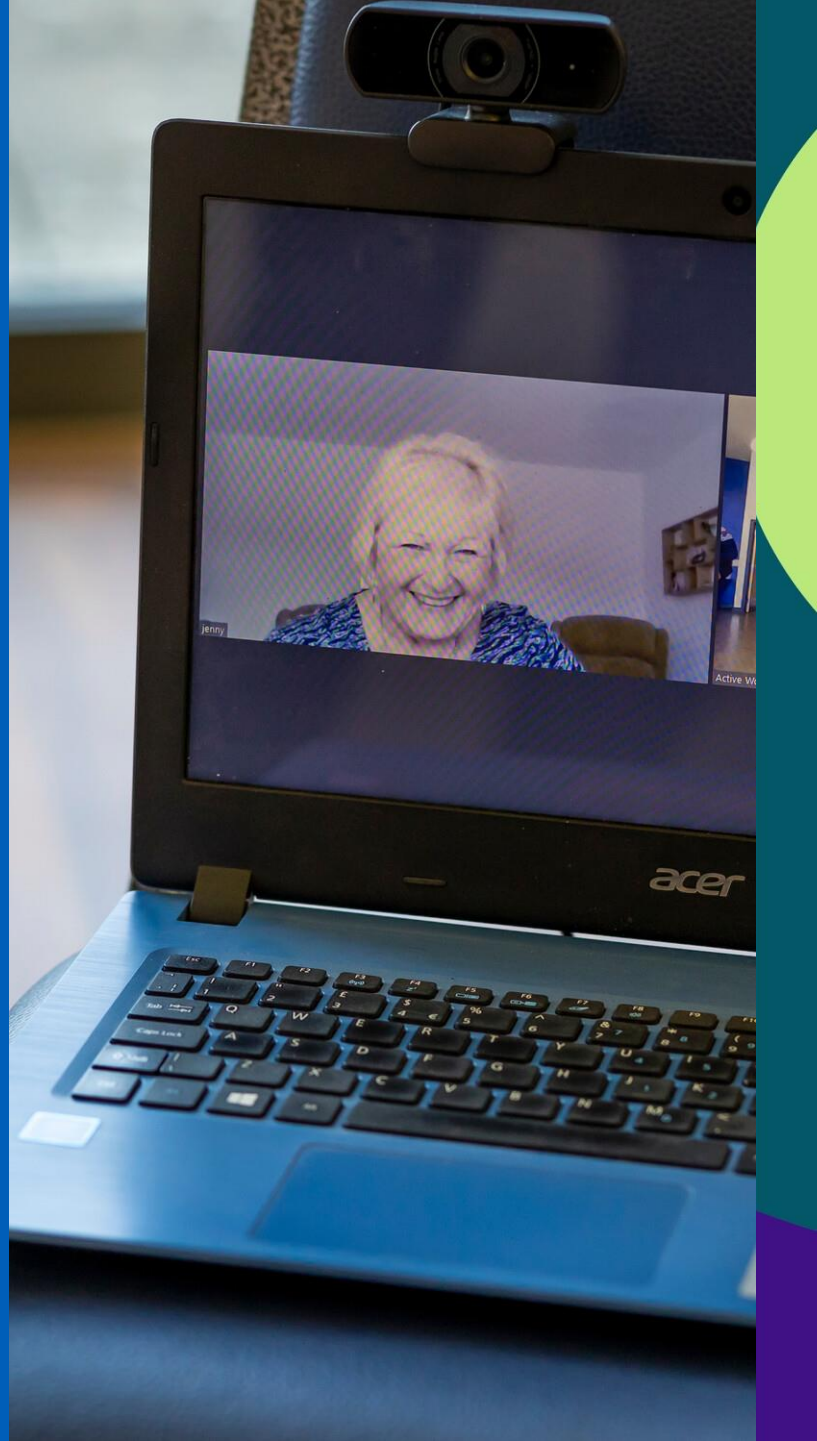
- Ease of use is foundation for success
- Engage with leaders to manage change
- Provide training through a variety of delivery methods

Contract Negotiation

- Agree a collaboration approach
- Define integration timeframes
- Consider the implications of contract length

Market review

- Overview of the Market
- Maturity, trends, and trajectory
- Acuity of disease and remote monitoring use cases
- Conformity with standards
- Interoperability
- Medical device integration
- Indicative costs and contracts

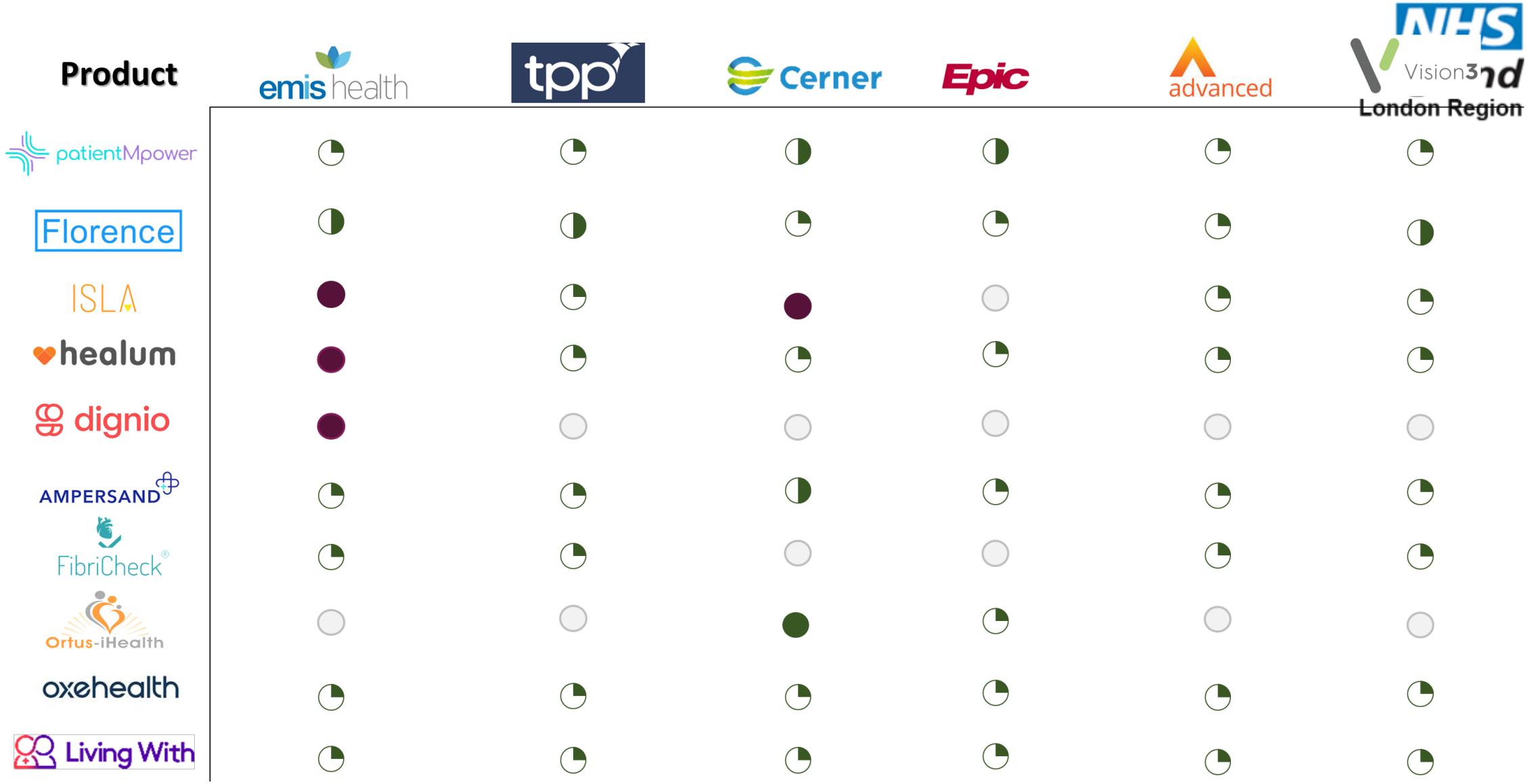


Interoperability Overview

Product	emis health	tpp	Cerner	Epic	advanced	NHS Vision3 London Region
accuRx.	●	◑	◔	○	○	◑
current health	◔	◔	◔	◑	◔	◔
inhealthcare	●	●	●	●	◔	◔
HUMA	◔	◔	◔	◔	◔	◔
Care	●	◔	◔	◔	◔	◔
whzan DIGITAL HEALTH	◑	◑	◔	◔	◔	◔
doctaly ASSIST	●	◔	◔	◔	○	◔
Docobo towards a better quality of life	◔	◔	◑	○	◔	◔
my mhealth	◔	◔	◔	◔	◔	◔
OneContact	●	○	◔	○	○	○
feebris	◔	◔	◔	◔	◔	◔

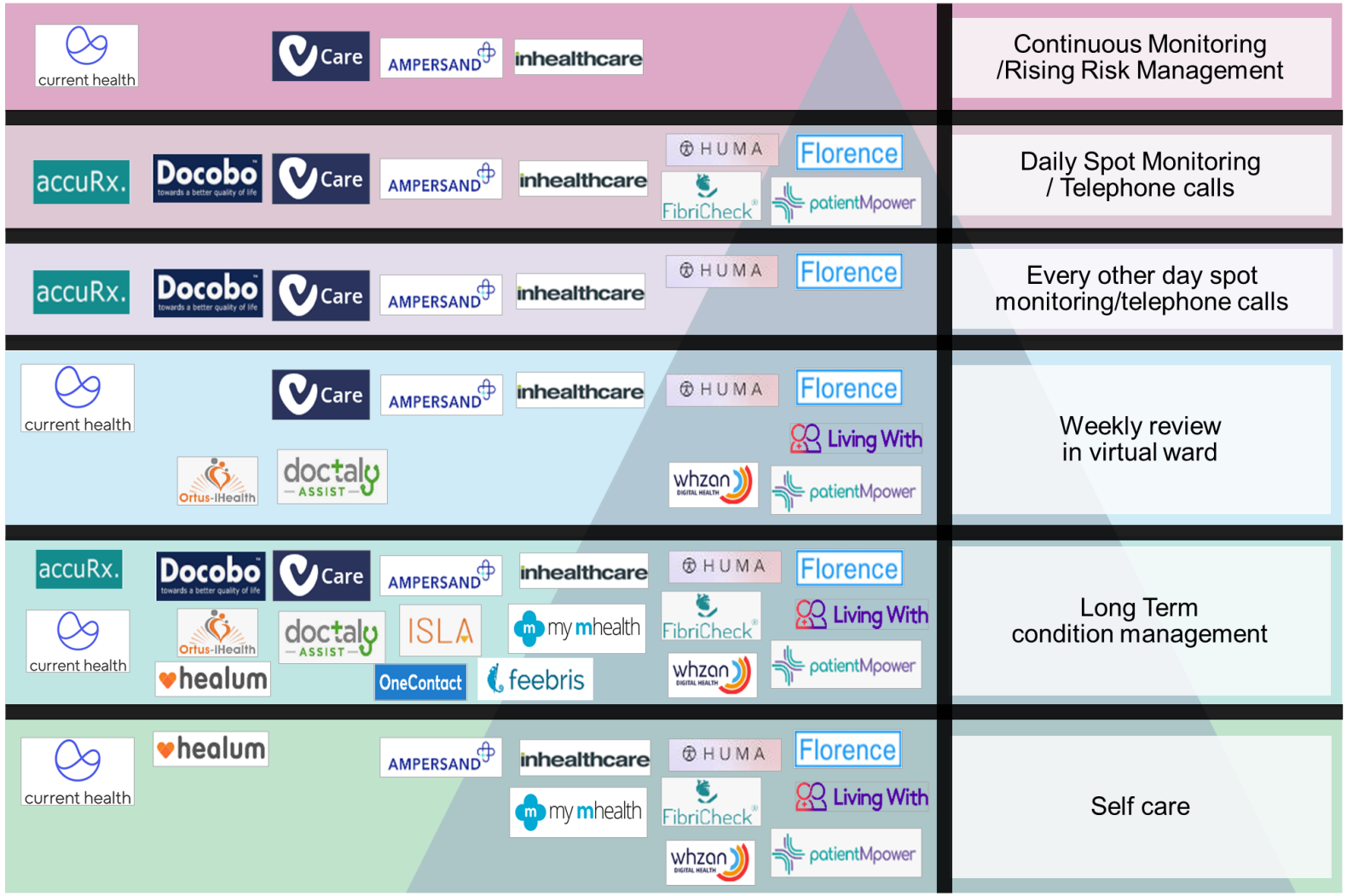
● Direct Interoperability ◑ Partially Interoperable ◔ No Current Interoperability (In progress/Technical readiness evidenced/No current plans) ○ No Data

Interoperability Overview



Direct Interoperability | Partially Interoperable | No Current Interoperability (In progress/Technical readiness evidenced/No current plans) | No Data

Product offerings across the acuity pyramid



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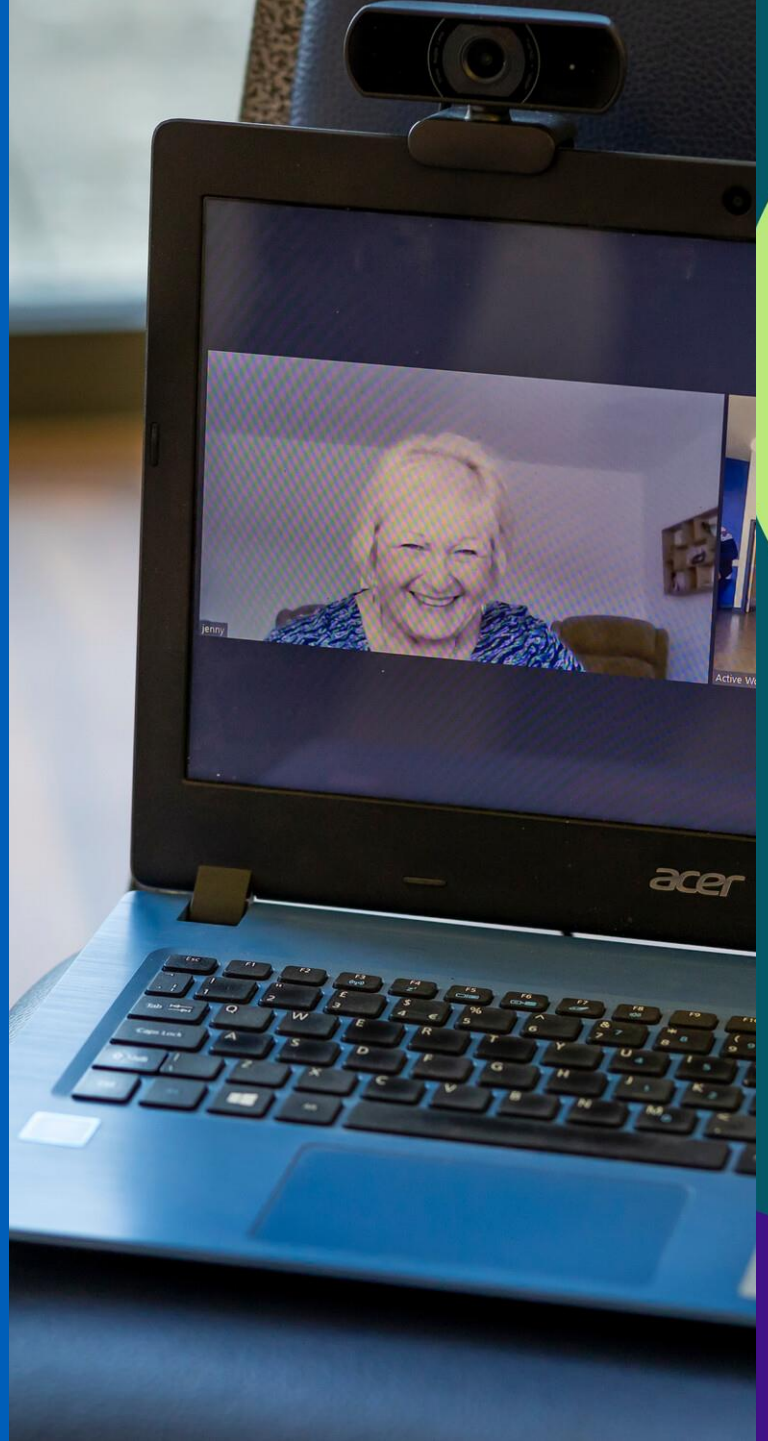
Technical Specification Contents



Example of Technical Specification (functional requirements)

#	Theme	Details	Guidance	MoSCoW
		Patient Flow		
2.1.1	**Registering patients using PDS/NHS number**	The ability to securely select and register patients using the NHS Digital Personal Demographics Service (PDS) lookup capability to guarantee effective use of the NHS Number. Any patients without an NHS Number should be traced by registering a minimal set of demographic data. This should be done to avoid the Shared Care Record having to utilise the PDS. Registration updates should take place in near real-time and not in batches.	DTAC (C4.2)	M
2.1.2	**Confirm identity without email address**	The ability to confirm identity of users without depending on the user's email address.		M
2.1.3	**Capturing pathway data (referral/consent/triage)**	The ability to capture full end-to-end pathway data for referral, consent, triage, etc.		M
2.1.4	**Inbound HL7 feeds (for registration & integration)**	The ability to support inbound HL7 feeds from multiple services to enable patient registration and integration between referring organisations.		S
2.1.5	**Easy to set up**	The ability for the devices to be easy to set up with simple instructions.	NCL	M
		Roles and Access		
2.2.1	**No separate login for professional users**	The ability for professional users to launch the remote monitoring platform without the need for a separate log in to the local system when searching for an individual patient, ideally using smartcards to access where possible. There should also be no need for a separate login when searching for other patients once the system has launched.	NWL	M
2.2.2	**Single patient login**	Patients should only have to log in through a single portal, ideally through integration with NHS Login, either directly or through a third-party intermediary, Patients Know Best, to allow patients to provide NHS Login verified digital proof of identity to access their account and health record	NWL	M
2.2.3	**Multiple clinicians & organisations to view/add/edit**	The ability for multiple clinicians working across multiple organisations to view, add to or edit information within the remote monitoring platform.	NWL, NEL	M

Principles for using the technical specification

1: Pathways

2: User Experience

2a: User Experience: Patients

2b: User Experience: Staff

3: Interoperability

4: Resourcing & Strategy

5: Information Governance & Standards

6: Safety

7: Convergence

8: Collaboration

9: Health Inequity

10: Learning and Knowledge Sharing

Principles: Example

1: Pathways

For some early adopters, RM pathways became limited by the technical functionality when patient and clinician needs were not clearly mapped. During procurement, local clinical pathways and digital needs should be defined so that requirements can be clearly articulated for suppliers. ***Clinical leadership should support the procurement process early on through clearly defined governance structures and working groups. Given the relatively immature and emergent nature of many pathways, it is important that specifications require agile ways of working, evidence of supplier responsiveness, the ability to modify the RM solution based on system needs and the flexibility to reconfigure the solution as the pathways evolve***. Suppliers have increasingly recognised the importance for clinicians to have control over parameters at patient and pathway levels, and the market is moving towards increasingly flexible solutions.

Key specification sections: Flexible Implementation (#2.3); Service Requirements (#4.2).

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Why (and when) to seek developmental partnerships

A need for supported care outside the clinical environment

Pathways are evolving

The market is growing

High level recommendations

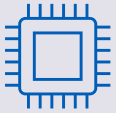
Market-shaping	Transition from a reactive approach to the market to a proactive strategy that provides direction
Developmental partnerships	Facilitate a continuous dialogue with industry that incorporates cross-functional perspectives
Cross-functional capability	Build partnership capability and capacity across functions

"A partnership is not something that you enter into 'on a first date.' You must have a level of courting, a period of time to get that trust on both sides before you commit"

Procurement Director
Central Government Department

How to build developmental partnerships

Invest in pre-procurement market engagement



Utilise existing 'developmental' procurement mechanisms

Procure a relationship, not just the tech

Key Recommendations

1. Set up for success	2. Invest in pre-procurement market engagement	3. Use existing procurement mechanisms	4. Procure a relationship
Be guided by users, ensuring patient and clinician involvement from the outset	Invest time and resource in pre-procurement market engagement	Remain open to evolving platforms and new functionality	Prioritise cultural fit, agility and relationship building
Form a multi-disciplinary team that can advise on people, process and product	Co-define the challenge, goals and terms of the intended partnership	Divide the activities for the supplier(s) into work packages along a roadmap linked to milestone payments	Develop and refine criteria through pre-procurement market engagement
Bring in specialist procurement expertise and validate the intended approach with external experts	Initiate a dialogue on the risks and rewards for the NHS and industry	Link pilots to procurement	Include criteria in tender documents to evaluate cultural fit and agility
Build commercial understanding in operational and clinical teams	Bring suppliers together to explore the potential of supplier collaboration through a single partner	Gather outcomes data to prepare for future value-based procurement	Include expected ways of working and measures to track this within contracts
Define the challenge and articulate the desired outcome	Seek collaboration across the NHS to achieve efficiency in procurement and risk sharing	Consider the partnership implications of various pricing models	
Define what is fixed and what is flexible	Test integration and user experience		
	Define and communicate needs around standards and integration		

Working in partnership to accelerate the remote monitoring technologies market

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Data on Virtual Wards: Findings so far

Evaluation focus

The data focus around the country is on establishing the data items needed for evaluating Virtual Wards to support business cases for 24/25

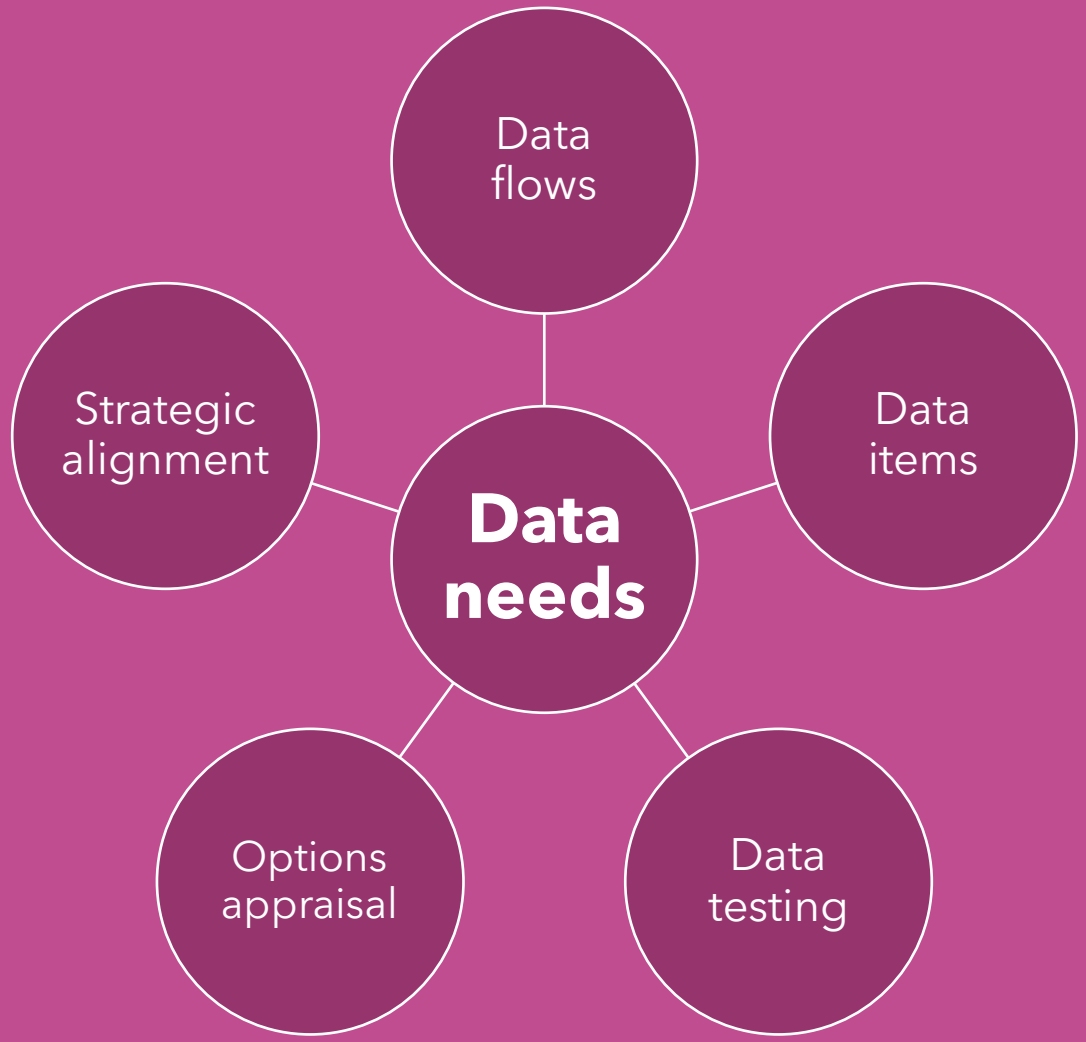
Interoperability complexity

Significant effort invested in understanding VW interoperability nationally has yet to establish an optimal approach

Significant variation

Variation in data needs due to variation in models, scale, infrastructure, integration and stakeholder interests.

Report themes



Next stage: building consensus around key data items to realise the benefits of Virtual Wards

DATA FOR DELIVERY AND EVALUATION

DATA TO DRIVE BUSINESS CASES

DATA ON PATIENT EXPERIENCE AND INEQUALITIES

Resources

remote monitoring resources from the NHSE London Digital team and the Health Innovation Network:

- Read the full report on building partnerships with the remote monitoring industry here
- Remote Monitoring Developmental Partnerships – Expert Roundtable Report
- Review of the Remote Monitoring Market and Technology Adoption – Report
- Guide Virtual Ward Specification for London – link (considerations document available here)

Keeping in touch

Please contact the HIN or NHSE London Digital teams for further information:

hin.technology@nhs.net

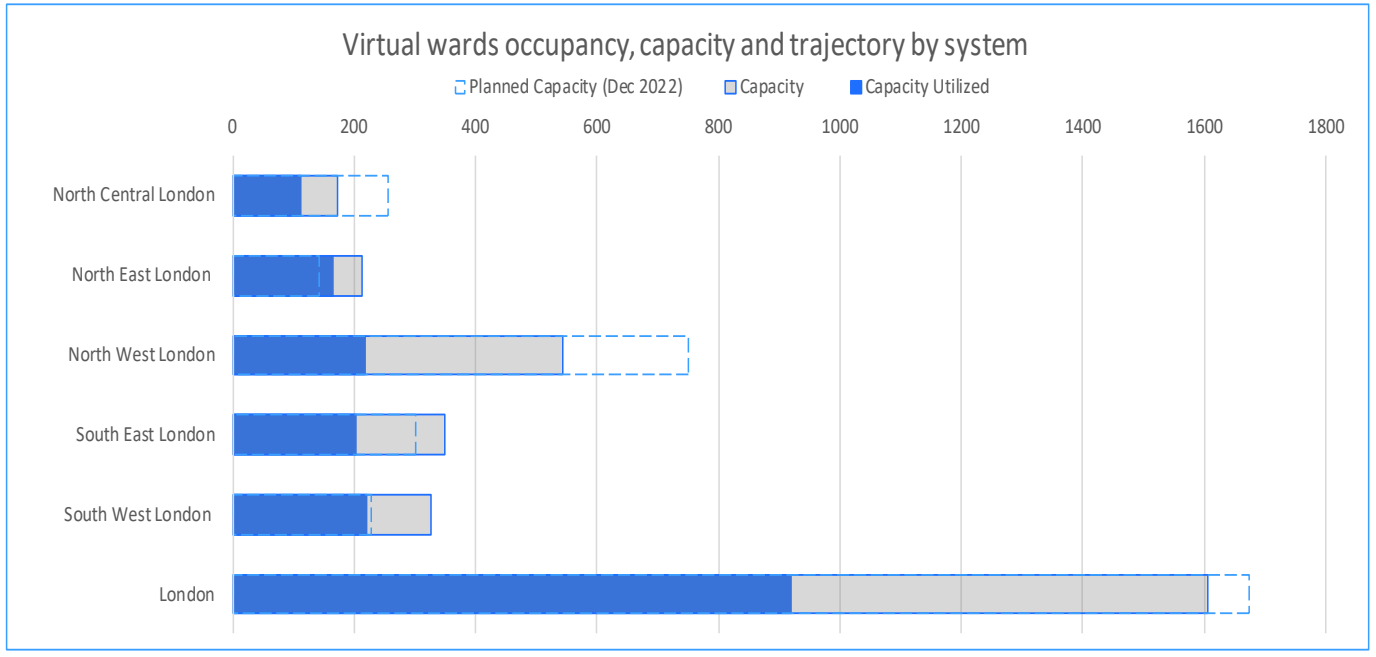
england.londondigitalteam@nhs.net

Virtual Wards: Snapshot of Activity in London

NHS England London Region

Submission as of the 16th of June 2023

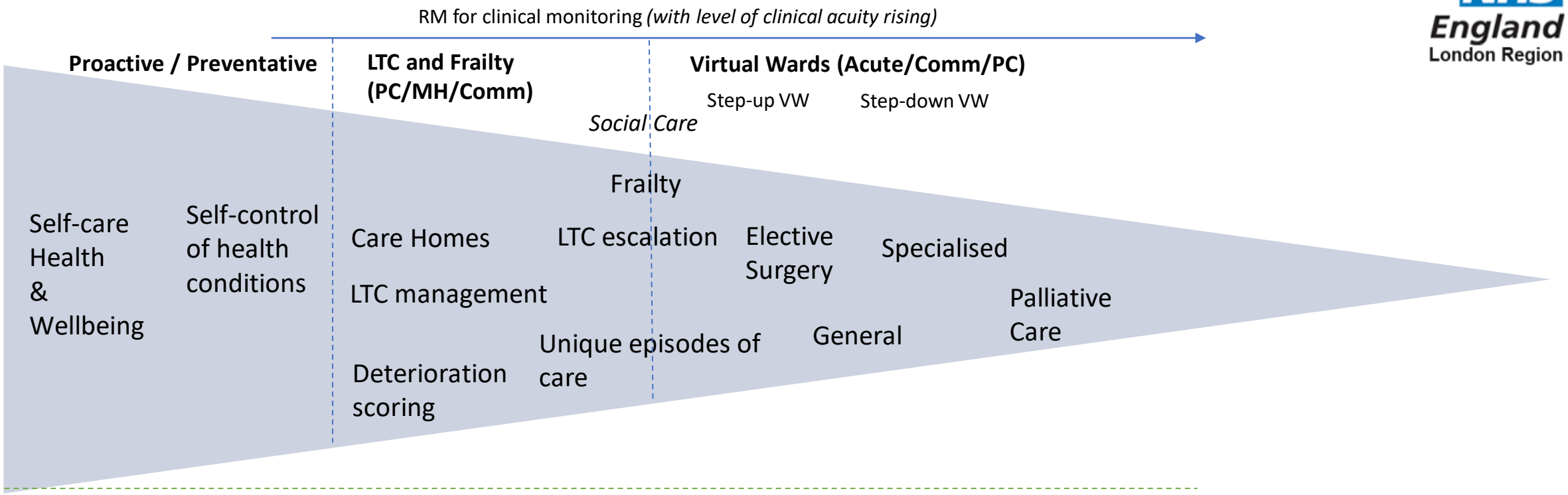
System	Planned Capacity (Dec 2022)	Capacity	Capacity Utilized	Capacity Utilized (%)	Tech Enabled (%)
National	8265	9001	5407	60%	29%
London	1675	1605	919	57%	43%
North Central London	255	173	113	65%	17%
North East London	141	212	166	78%	0%
North West London	750	543	218	40%	85%
South East London	301	350	202	58%	20%
South West London	228	327	220	67%	70%



- **London has 43% of Patients using Tech Enabled Services, with the national average at 29%.**
- Capacity utilized in London is currently at 57%.
- Current capacity is at 96% of the planned capacity for Dec 2022.

Remote Monitoring: Continuum of Care and Data Use

NHS England London Region



RM interface(s) e.g. wearable, app, POCT device, sensors and passive monitoring equipment etc

Currently multiple RM interfaces with likely duplication and inconsistent patient and clinician user experience

Opportunity for single system solution* for consistent patient and clinician user experience

RM data → *Local EPRs / HIEs / SNSDE*

- Social Care
- Primary Care
- Secondary Care
- Community / Mental Health / Third Sector Specialist Care
- NHSE national, regional and ICS bodies; Public Health; Local Authorities; Other Public Sector data use cases

Care providers and data use case owners

(Data is also needed by R&D and Industry to continue the development of remote monitoring technologies.)

** Such a solution would need to be able to act as a gateway to multiple 3rd party solutions and services, and share data in a secure and standardised way, avoiding duplication whilst retaining data quality and integrity.*

Virtual Wards: Future Aspirations and

NHS England London Region

- **Procurements:** Further engagement to **support ICBs with technology procurements** and developmental partnerships with Industry
- **Evaluation and Benefits:** Regional evaluation work; defining, identifying and mapping for **benefits realisation** of digital transformation
- **Patient/Public Engagement:** Work with a range of patients and carers to ensure delivery is seen through the lens of the patient, and **put into practice co-design principles**
- **Data:** Standardisation; defining regional minimum data set; **interoperability challenges**; data sharing solutions; alignment with regional/national data strategies
- **Technology:** **Scaling and embedding of technology** for VWs (RM and POCT) with BAU funding
- **Digital Inclusion:** Evidence gathering and sharing for **digital inclusion initiatives**, benefits/exclusion disbenefits
- **Governance:** Review and consider where **wider stakeholder involvement** could be needed (e.g. Local Authorities)
- **Communications:** System and patient facing positive messaging about clinical safety and patient experience to **build clinician and patient confidence**

Up Next…

PMD SOLUTIONS

Revolutionising Respiratory Outcomes

Transforming Virtual Ward patient flow during Winter Flu

by

Removal of the technology burden and optimising early identification of deterioration via a managed service

Presented by:
Myles Murray
(CEO of PMD and Fellow of the NHS Innovation Accelerator)
July 11th 2023, The NHS Virtual Ward Conference North.

Digital Health. London

Our Shared Purpose

PMD Solutions are #MakingEveryBreathCount

by

Transforming how respiratory rate is monitored

to

Ensure the right care is given to the right patient at the right time with RespiraSense

The Challenge Question:
How to rapidly implement a high-impact winter flu solution for 2023

PMD's Innovation Fund for a turnkey managed service:

"Rapidly develop a partnership-based approach between patient and provider, with industry removing the technology burden from day-to-day tasks".

Respiratory Inequalities in England

Headline #1 – Respiratory Disease affects 3.7m

Headline #2 – **>700** hospital admissions p.a., increasing 13% p.a.

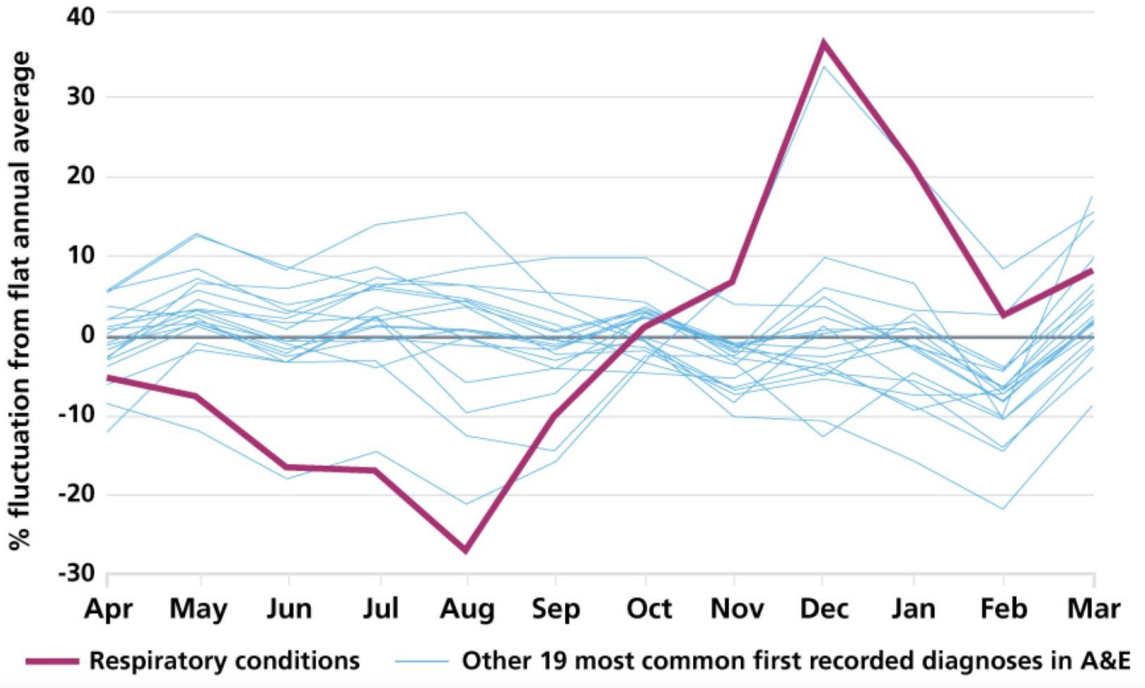
Headline # 3 – Respiratory illness causes **72,334** deaths p.a.

Headline # 4 – Respiratory admissions increase **>80%** August – January

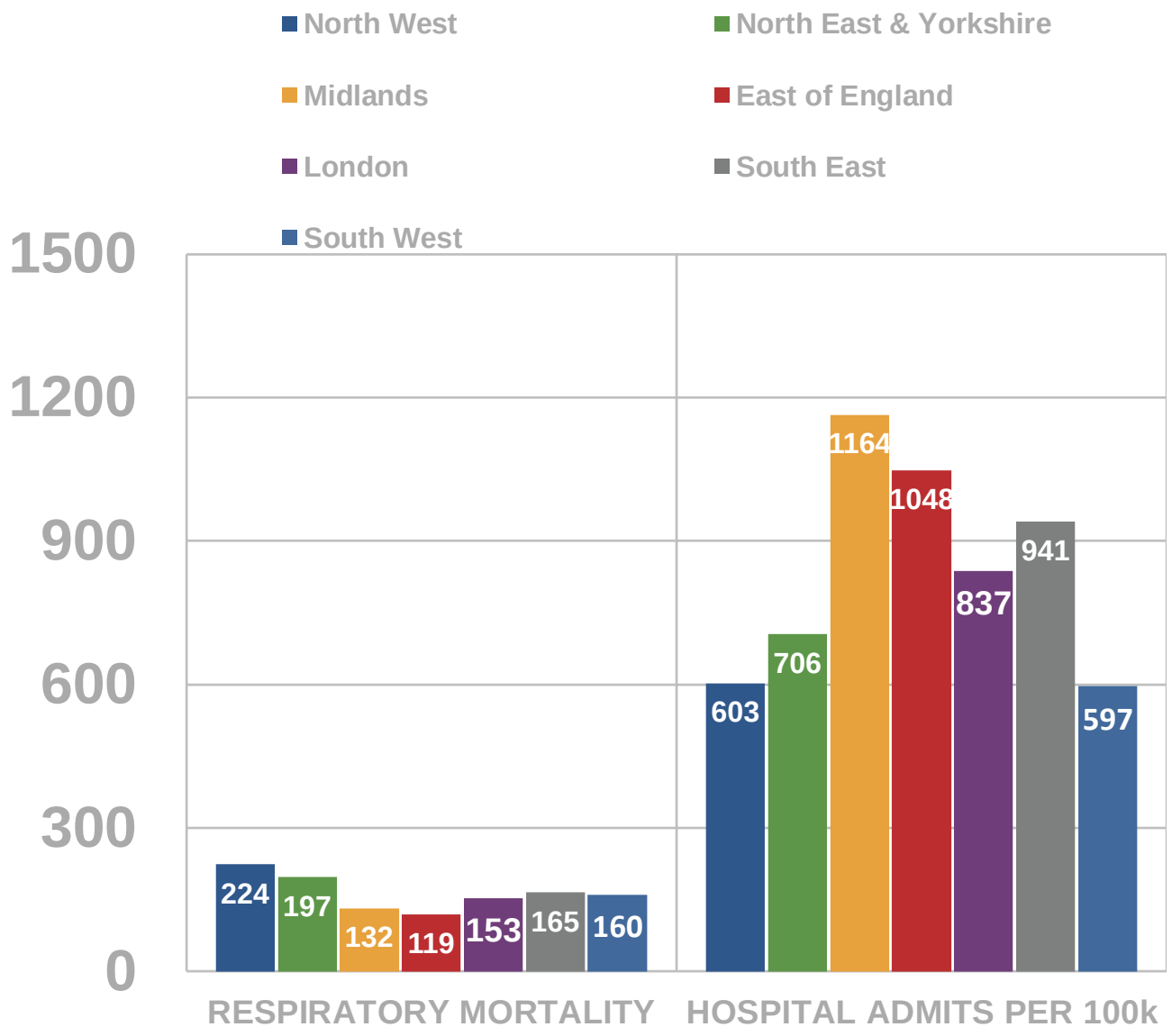
Headline # 5 – Outcomes are worse in most deprived, 789,000 people with respiratory disease live in poverty; 160,956 of these patients have COPD

Headline # 6 – Disease prevalence is highest in the North West and coastal areas of England

Average fluctuation in monthly admissions over financial years 2010 to 2017



Admission Profile: NHS England Regions



NW

NORTH WEST:

32,907 Admissions

Free 50 Beds

East

East of England:

101,055 Admissions

Free 305 Beds

NEY

N.E. & Yorkshire:

196,835 Admissions

Free 155 Beds

LON

London:

131,836 Admissions

Free 722 Beds

MID

Midlands:

196,818 Admissions

Free 155 Beds

SW

South West:

36,025 Admissions

Free 52 Beds

The Challenge – Technology enabled Virtual Wards today

"Wellness in COPD" tool table/grid

KEY

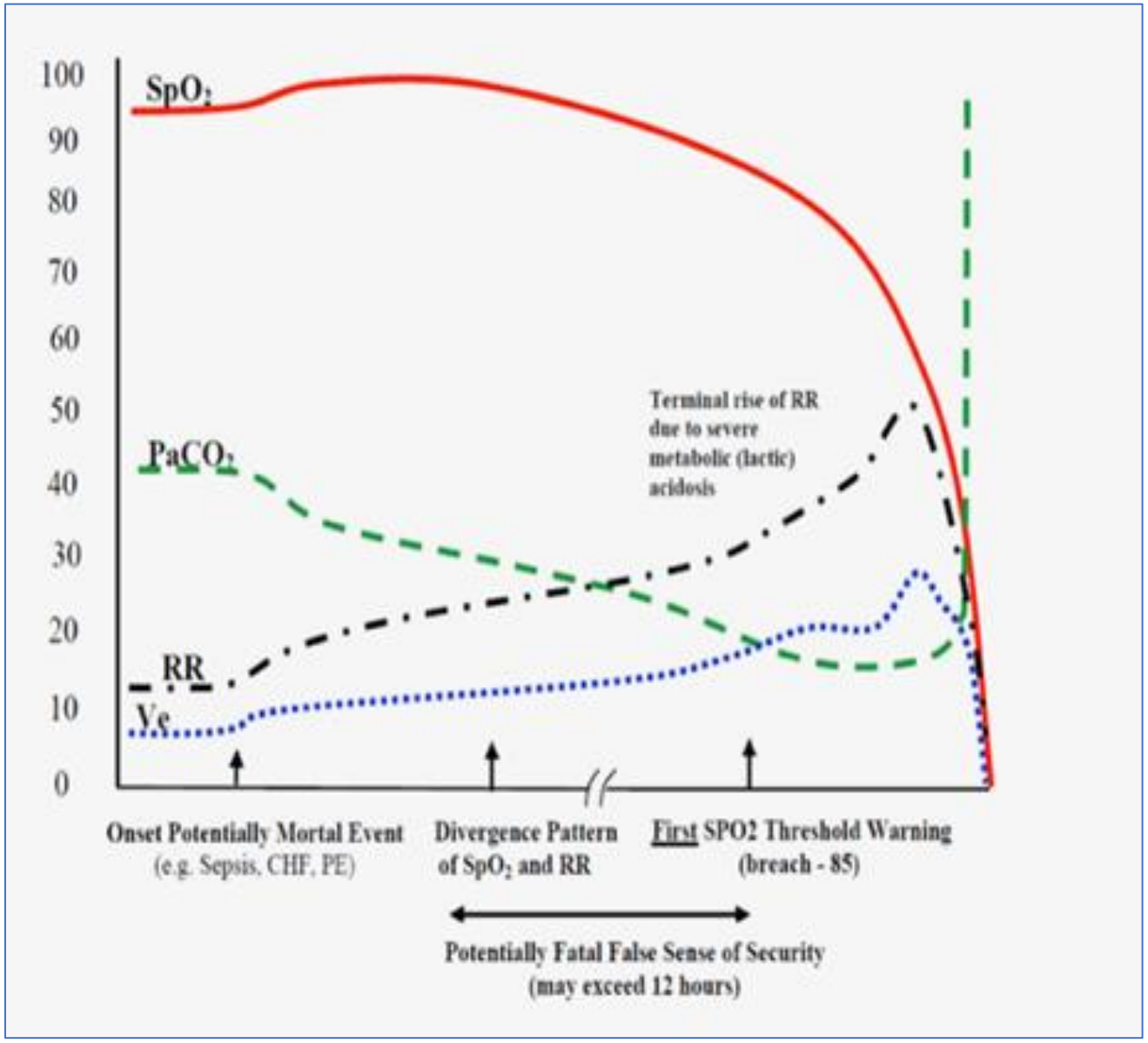
Very poor	Not good enough, if this criterion is important	Good enough	Recommended	Highly recommended

Tool/ Criteria	Validity/ Reliability	Responsive	Primary Care Population	Practical/ Easy to Administer	Tested in Practice	Other Languages
AQ20	☺	😐	😐	☺	😐	☹
BPQ-S	☺	😐	😐	😐	☹	☹
CARS	😐	☹	☹	😐	☹	☹
CAT	☺	😐	☺	😐	😐	😐
CCQ	☺	☺	☺	☺	☺	☺
CRQ	☺	😐	☺	😐	☺	😐
MRC-D	😐	😐	☺	☺	☺	😐
RIQ-MON10	😐	😐	😐	😐	☹	☹
SGRQ	☺	☺	😐	😐	😐	☺

Impact:

- Deterioration identified through Symptoms
- Patient felt intimidated by technology
- No improvement in Quality of Life

Patient Safety risks with S_pO_2 monitoring alone in patients supported with O_2



- Curry 2018 - Changes in respiratory rate indicate potential Respiratory Alkalosis or Metabolic Acidosis
- SpO_2 can be a lagging indicator of same with delayed interventions happening if accurate measurement of elevated RR is not achieved
- Trends versus spot checks for RR give greater sensitivity in correlating abnormal RR with underlined deterioration
- A simple Arterial Blood Gas (ABG) analysis can confirm this in day to day clinical practice.
- Confirmation of Alkalosis or acidosis can give healthcare providers the direction for the appropriate course of treatment.

The next advance – Continuous Respiratory Rate (cRR)

"Wellness in COPD" tool table/grid

KEY

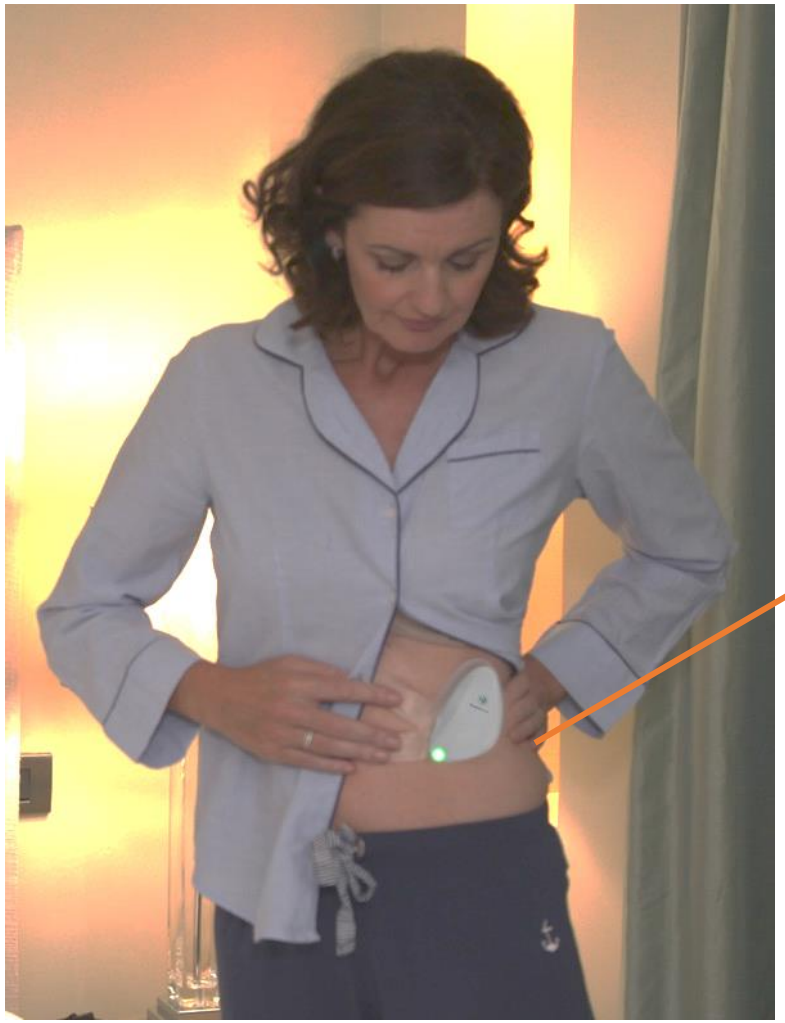
Very poor	Not good enough, if this criterion is important	Good enough	Recommended	Highly recommended

Tool/ Criteria	Validity/ Reliability	Responsive	Primary Care Population	Practical/ Easy to Administer	Tested in Practice	Other Languages
AQ20	☻	😐	😐	☻	😐	☹
BPQ-S	☻	😐	😐	😐	☹	☹
CARS	😐	☹	☹	😐	☹	☹
CAT	☻	😐	☻	😐	😐	😐
CCQ	☻	☻	☻	☻	☻	☻
CRQ	☻	😐	☻	😐	☻	😐
MRC-D	😐	😐	☻	☻	☻	😐
RIQ-MON10	😐	😐	😐	😐	☹	☹
SGRQ	☻	☻	😐	😐	😐	☻

Impact:

- Deterioration preceded Symptoms
- Patient felt intimidated by technology
- No improvement in Quality of Life

RespiraSense – Continuous and motion tolerant eRR monitoring

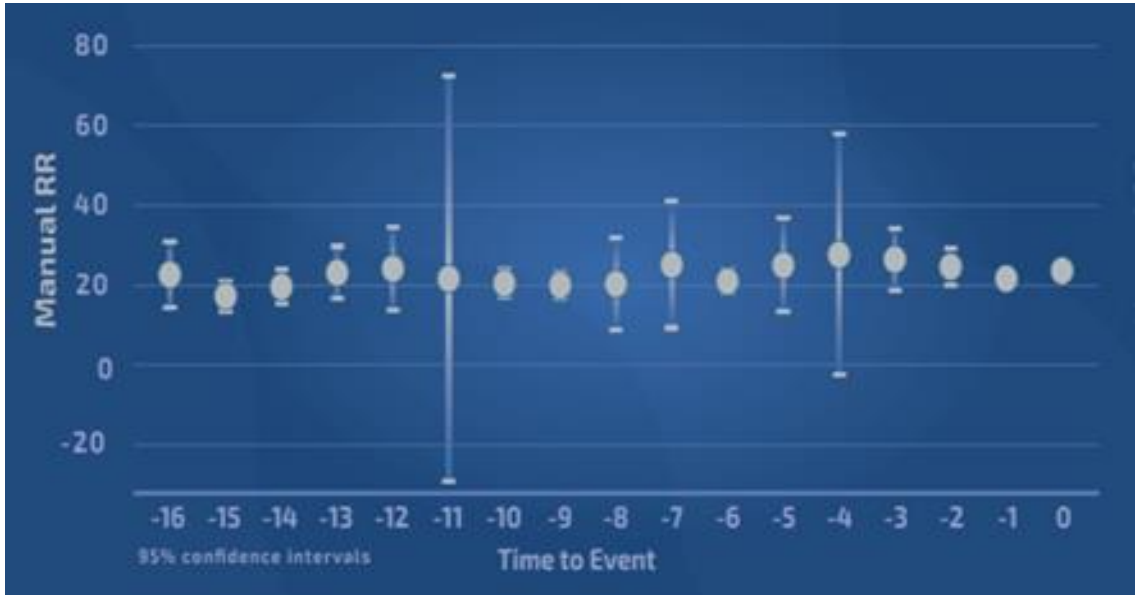


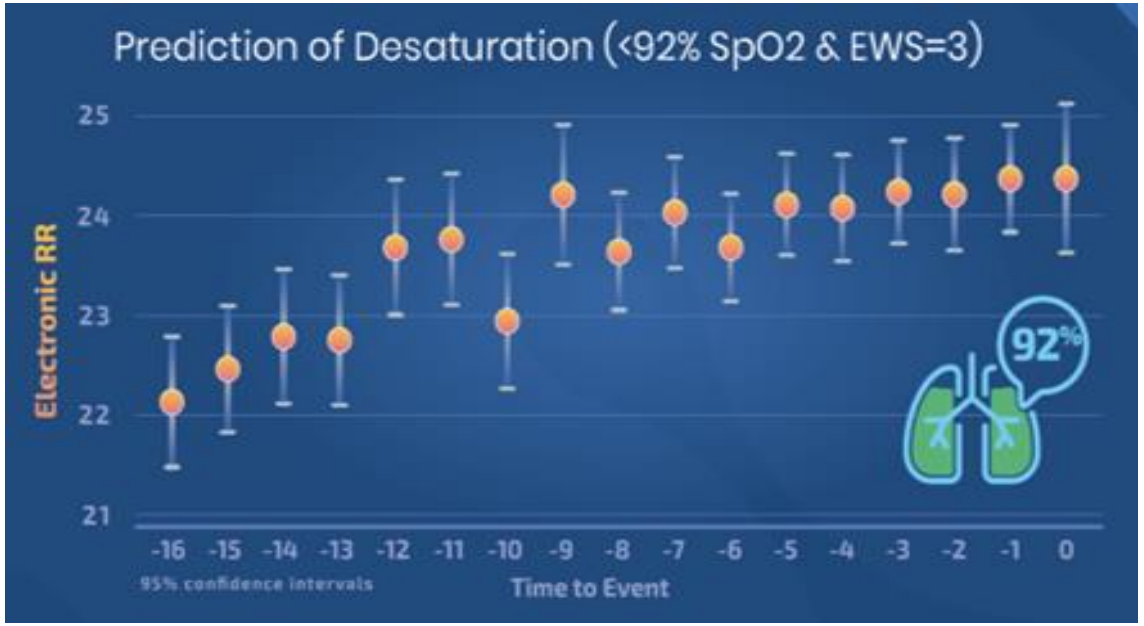
Single Patient Single Use
RespiraSense Sensor

Reusable/Rechargeable Lobe
(measures, processes,
communicates)

Optional: Bluetooth SpO2/PR
monitor - Nonin

cRR prediction of Hypoxia





McCartan2020 demonstrated that eRR >24 breaths per minute gave 12hrs early warning of impending hypoxia event with over 90% sensitivity.

Manual RR measurements gave no significant predictive power for pending hypoxia

Electronic monitoring of patients Respiratory Rate can help allocate the Right Resources to the Right Patient at the Right Time.

cRR also predicted pyrexic events of temp>38ºC

Acute monitoring of Respiratory Compromised Patients using cRR

cRR is in 23 Acute Hospitals and 47 Respiratory Wards across Ireland

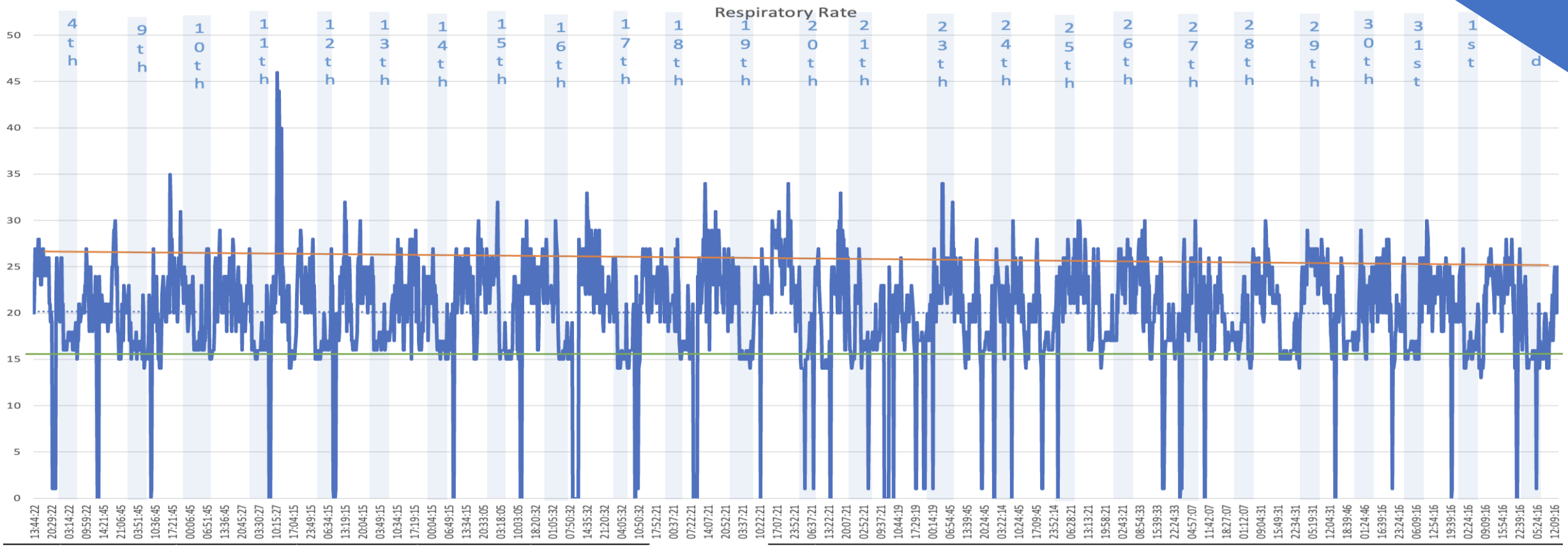
NHSx funded roll-out in Nottingham University Hospital across 3 Wards

40,000+ Patients monitored every year using RespiraSense

Intended for patients on 4lt Supplementary O^2, NIV, or HFOT

NHSX NICE National Institute for Health and Care Excellence Nottingham University Hospital NHS Trust Digital Health. London

What is a Personalised Normal Continuous RR Profile

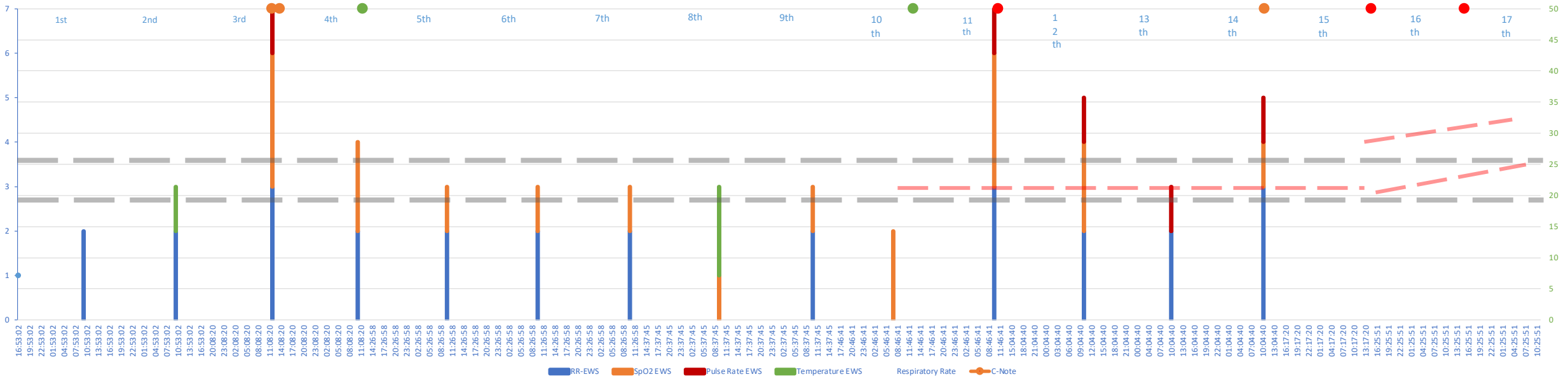


- Repeating patterns of variation
- Reduction in RR during sleep
- Range of RR is consistent
- Lower and Upper RR averages are consistent

Example features of cRR to aid in detecting deterioration

Identify deviations in range, trend or averages from the norm

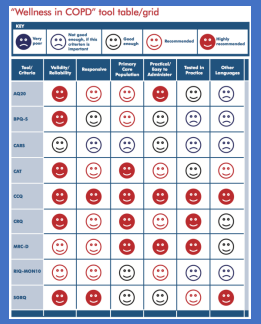
Example 2: Variation in Lower RR range and trending increase in RR range: coupled with disturbed nocturnal cRR

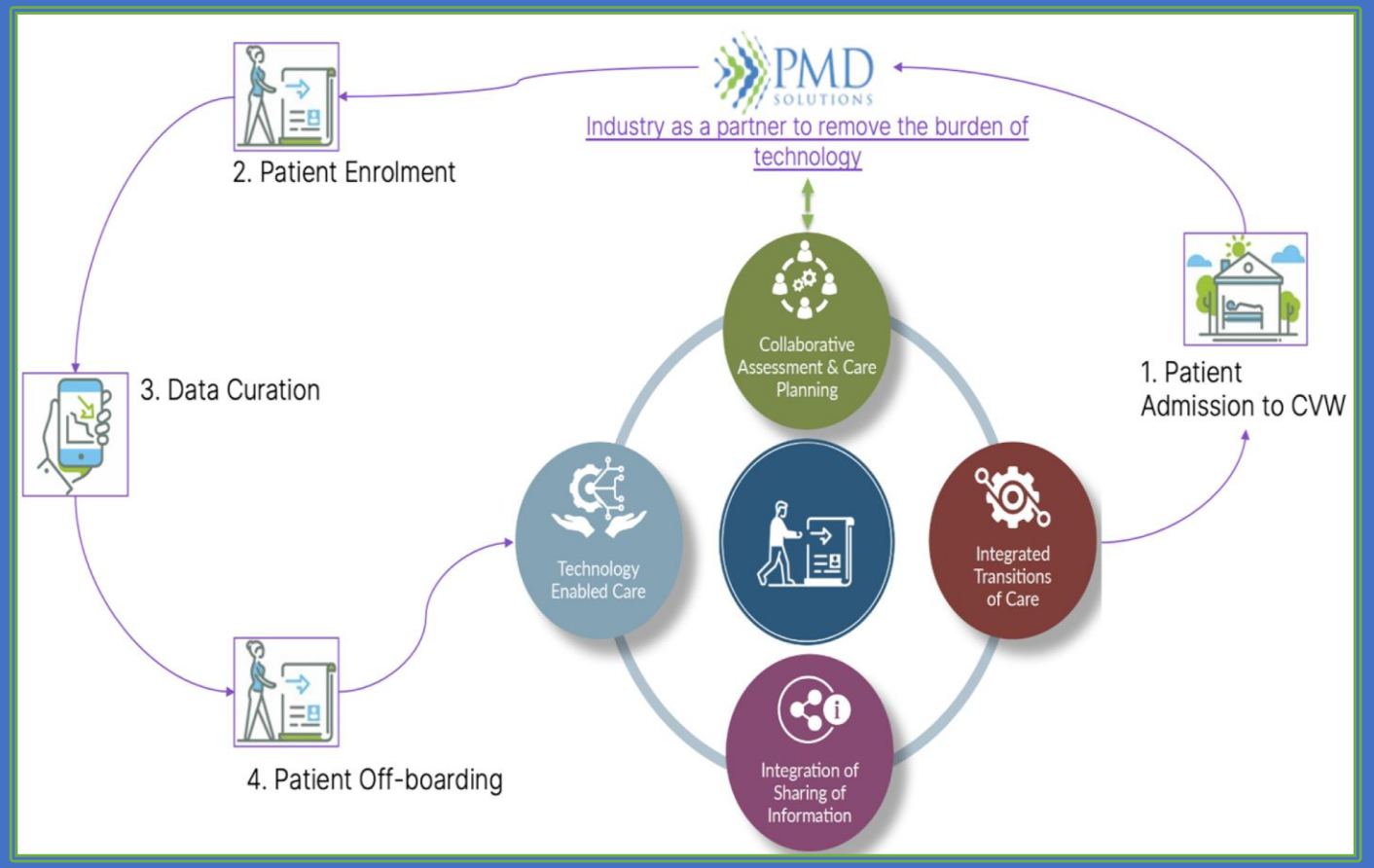


Grey Dashed lines show that from history what the normal stable RR profile is.

Red Dashed lines show how the range changed as events worsened.

The right approach – Partnership-based Model of Care





Impact:

- Deterioration preceded Symptoms
- Patient felt intimidated by technology
- No improvement in Quality of Life

The right approach – Partnership-based Model of Care 12-week pilot

Doherty2022 et al.

International Journal of Nursing and Health Care Research
OPEN ACCESS
Doherty A, et al. Int J Nurs Health Care Res 5: 1364
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Research Article

Community Virtual Ward (CVW+cRR) Proof-of-Concept Examining the Feasibility and Functionality of Partnership-Based Alternate Care Pathway for COPD Patients- Empowering Patients to Become Partners in their Disease Management

Antoinette Doherty[1*], Vera Keatings[2], Gintare Valentelyte[3], Myles Murray[4], Des O'Toole[5]

[1]Donegal Community Healthcare and Letterkenny University Hospital, Donegal, Ireland
[2]Letterkenny University Hospital and University of Galway Medical Academy, Donegal, Ireland
[3]RCSI University of Medicine and Health Sciences, Dublin, Ireland
[4]PMD Solutions, Cork, Ireland
[5]HSE Digital Transformation and Innovation, Dr Steeven's Hospital, Dublin, Ireland

[*]**Corresponding author:** Antoinette Doherty, [1]Donegal Community Healthcare and Letterkenny University Hospital, Donegal, Ireland

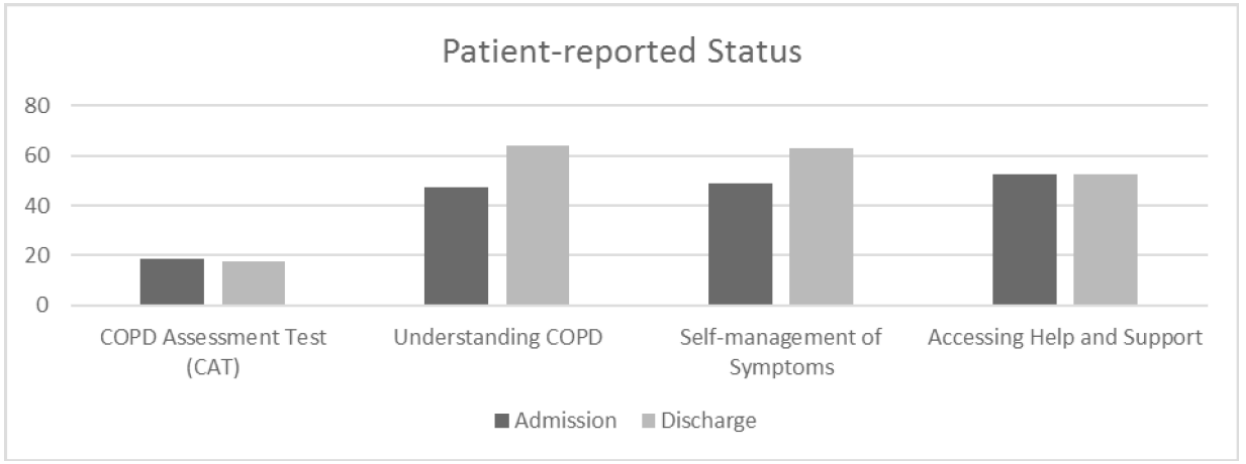
Citation: Doherty A, Keatings V, Valentelyte G, Murray M, O'Toole D, et al. (2022) Community Virtual Ward (CVW+cRR) Proof-of-Concept Examining the Feasibility and Functionality of Partnership-Based Alternate Care Pathway for COPD Patients- Empowering Patients to Become Partners in their Disease Management. Int J Nurs Health Care Res 5: 1364. DOI: 10.29011/2688-9501.101364

Received Date: 09 November, 2022; **Accepted Date:** 19 November, 2022; **Published Date:** 23 November, 2022

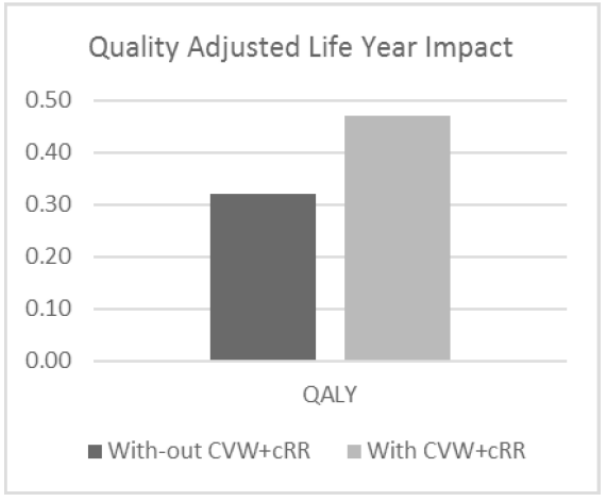
Abstract

Background: Individuals with exacerbating Chronic Obstructive Pulmonary Disease (COPD) display a pattern of exacerbations and illness culminating in repeated hospital admission. In an effort to empower people living with COPD to self-manage their illness and to avoid hospital admission a Community Virtual Ward + continuous Respiratory Rate (CVW+cRR) with a bespoke platform that incorporated respiratory rate (RR) trends was designed and implemented in Co Donegal. The proof of concept took place from May to August 2022 with 15 eligible individuals living with COPD. **Pathway:** Patients with moderate-severe COPD (Gold Scale D) were admitted to the CVW+cRR for remote monitoring, with optimisation of existing care plans and provision of rescue prescriptions for the patient's use. The objective and subjective patient data was reviewed daily by a Registered Advanced Nurse Practitioner (RANP). **Results:** Data from 10 patients was eligible for inclusion. Hospital avoidance was achieved in 100% of the eighteen (18) identified exacerbations in patients admitted to the CVW+cRR with cRR. The average cost per patient reduced from average €19,384.00 to €3,376.44, with a 96.7% probability of being both cost saving and cost effective at a €45,000 willingness to pay threshold. Several patient-reported measures also indicated improvement between admission and discharge, including Self-Management (increase of 29.1%), Understanding of COPD (increase of 35.3%), and Quality Adjusted Life Years (QALY) (increase by 0.15 of a QALY). **Conclusion:** The COPD CVW+cRR offered individuals an alternate care pathway and facilitated early intervention and management of infective exacerbation. The CVW+cRR provided the option to remain at home while receiving care, resulting in avoided hospital admissions with the use of both personalised objective trigger thresholds and patient feedback as to their wellbeing.

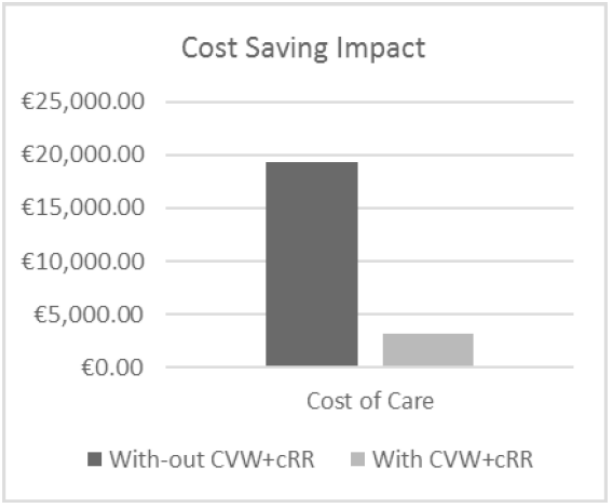
Patient Empowerment



QoL Improvement



Cost Saving Improvement



PMD’s Innovation Fund

Making Every Breath Count This Winter

PMD Innovation funding – <£250k to support respiratory patients in winter

Winter Readiness Innovation Offer:

End to end support

- Delivery Manager seconded (Band8b)
- Runs the project for you
- Dedicated delivery team

Personalised to needs

- Virtual and on-site training
- Rapid response to queries
- Project & admin co-ordination

Co-investment offer

- Time limited innovation funding
- Intensive support to reduce admin
- Full project management
- Ensures service is live for winter

Innovation funding: co-investment

To support this winter, PMD are launching a £2.5m innovation fund.

Available to the first 10 ICB to sign up on a first come first-served basis

Email: myles@pmd-solutions.com

Recap

Design Thinking and Partnership-based

Is a framework that can be used to solve problems. Its structured approach provides a methodology for developing solutions that meets the needs of those we are designing for. Inherent to the function and purpose of overall design thinking is to create a better tomorrow

Challenge Question

How to rapidly implement a high-impact winter flu solution for 2023?

Outcome

Continuous monitoring of respiratory rate, with a managed service, enables earlier appropriate intervention in the community setting and removes the burden of technology from front line staff.

PMD SOLUTIONS

Revolutionising Respiratory Outcomes

Come visit our stand for a tailored impact assessment for your Trust or ICB

Learn more at:

Twitter: @PMD_Respiratory
Web: www.pmd-solutions.com
Contact: info@pmd-solutions.com

Slido

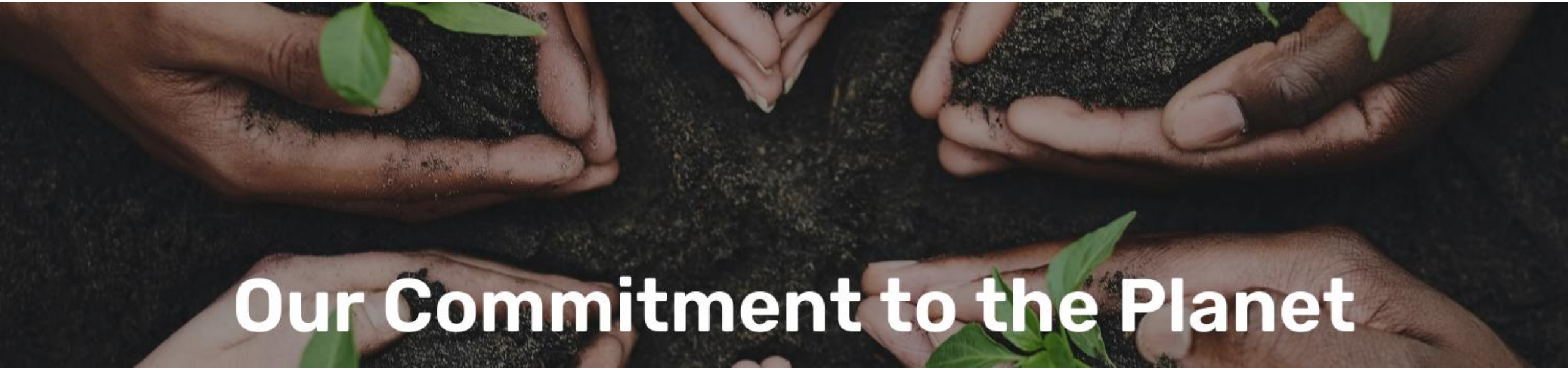
Please scan the QR Code on the screen. This will take you through to Slido, where you can interact with us.

SCAN ME

Q&A Panel

Lunch & Networking

Current Trees Planted to date: 10,444



For Each Delegate Attending Our In-Person Event Today, we will be planting 1 tree with our Key Sustainability Partner

PLAY IT GREEN

Chair Afternoon Reflection

Douglas Hamandishe

Chief Digital Officer/Broadcaster and Presenter - **Context Heath and Centric Health Media**

Speaking Now…

Adam Wright
Programme Development Manager - **NHS Providers**

Sara Gariban
Policy Advisor - **NHS Providers**

THE NHS TRUST EXPERIENCE OF LEADING AND DELIVERING VIRTUAL WARDS

Adam Wright

Programme Development Manager

Sara Gariban

Policy Advisor

11 July 2023

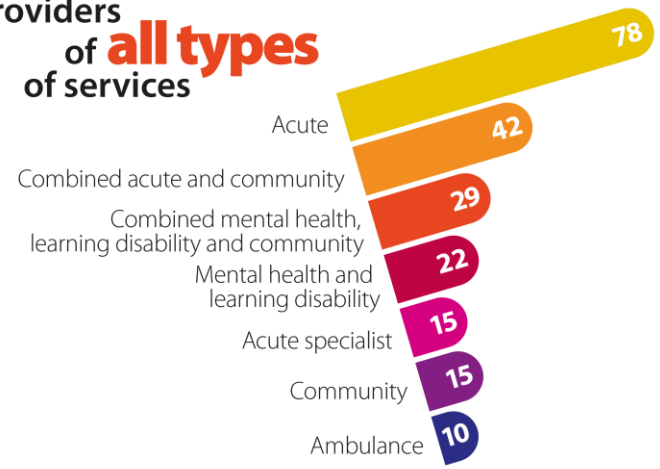
NHS Providers membership

We represent
England's NHS trusts and foundation trusts, with

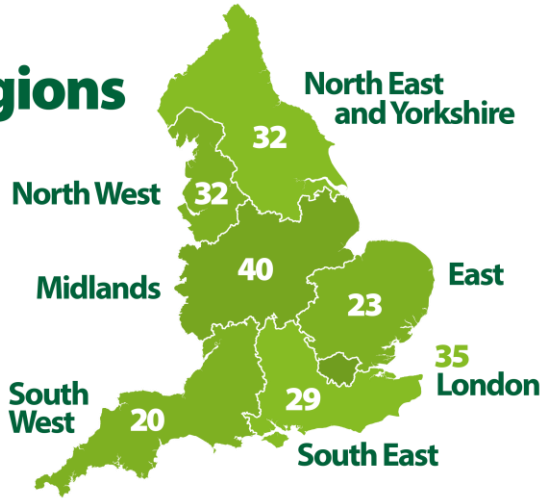
100%

in voluntary membership

covering providers of **all types** of services



in **all regions**



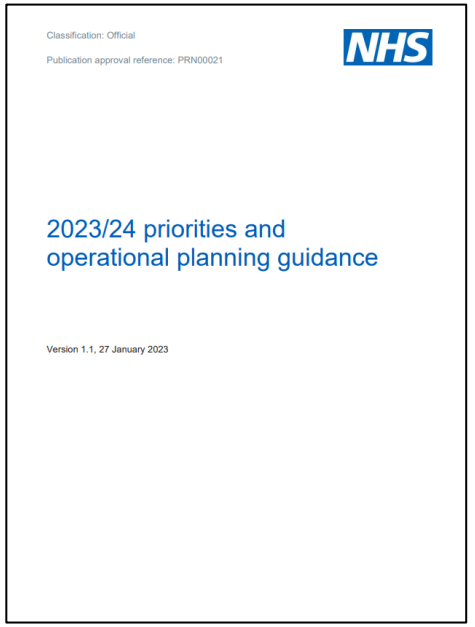
Our members employ **1.4 million staff**

have a combined turnover of **£104 billion**

and provide care, free at the point of use, for **56 million people**

Context

- Central funding of £450m for 2022-23 and 2023-24.
- National target to deliver 40 to 50 virtual ward beds per 100,00 of the population by December 2023.
- Ambition for occupancy rate of 80% by September 2023.
- To date, focus on acute respiratory infections and frailty. Recent expansion to cover children.



Progress to date

December 2022 – around 7,000 virtual wards beds and occupancy of c.55%

160,000 patients treated in virtual wards (since April 2022) and 7,653 virtual beds across 340 programmes

How realistic are national targets for September 2023 and December 2023?

Opportunities for scaling up virtual wards

Patient experience & outcomes

- Enabling better patient choice – but important to ensure it feels like this!
- Supporting by better outcomes – reducing risks of deconditioning, especially for older patients.
- Importance of considering health inequalities and tackling digital exclusion.

Patient flow

- Part of the solution to operational pressures and supporting future resilience of health and care system.
- Included in UEC recovery plan and winter planning.
- Step up/step down care – admission avoidance and timely discharge.
- Investment in community/social care.

Flexibility for systems

- Potential to widen initial focus on respiratory and frailty pathways – place of local systems in determining priority pathways.
- Data sharing between partners and data collection on population health and outcomes are key enablers.

Challenges

Workforce

Funding

National approach

System considerations

ICS insight

"[virtual wards]… will be the first test of ICSs, as they are established, to deliver a new multi-agency approach to supporting people to be cared for in their own homes or usual place of residence."

NHS England, April 2022

Thank you

Find out more here

Up Next…

ISLA

Speaking Now…

Connor Grealy
Partnership Manager - **Isla Care**

Charlotte Furness
Senior Partnership Manager - **Isla Care**

ISLA

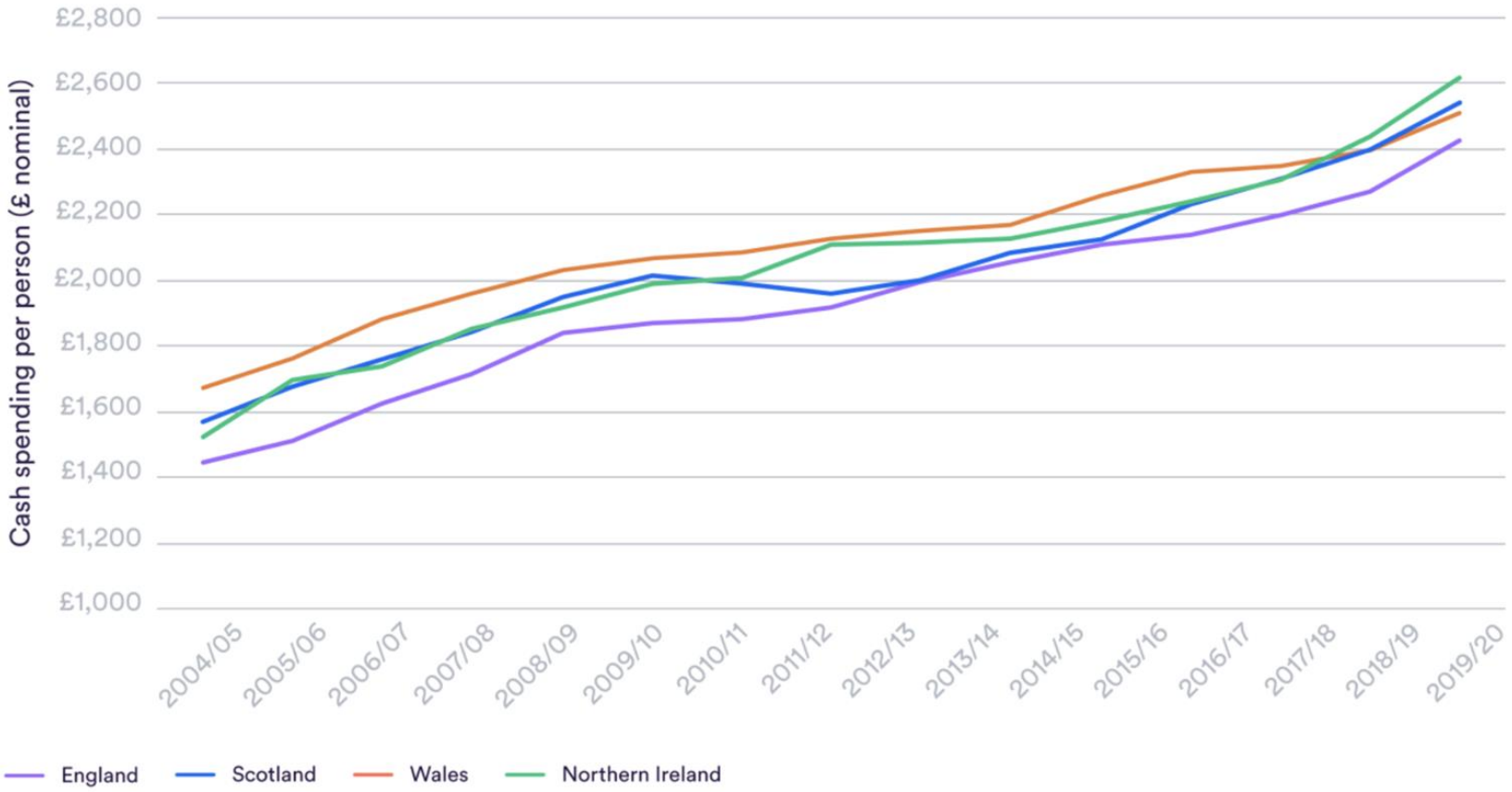
See Health Differently

The scale of the challenge

For NHS England:

- A record 7.4m people on a waiting list in April
- The 18-week treatment target has not been met since 2016
- NHS staff numbers have increased, with doctor numbers up 21% and nurses up 16% over the five years to November 2022.

Per capita health spending



Virtual Wards: The challenge & ambition

"A set of services that are wrapped around a patient to provide the necessary degree of clinical oversight, without them needing to be in hospital"

Example of current key focuses
Heart Failure
Acute Respiratory Infection
Frailty

Scaling the model
Post-op - surgical site infection
Stroke
Tissue Viability
Vascular
Burns & Plastics
Endocrinology

Creating the infrastructure for needs based care

Clinicians are able to **build up a view** of how a **patient is changing over time** allowing for **enhanced monitoring.**

By having access to rich visual and form data clinicians are able to **inform their care** provision resulting allowing for **efficient caseload management and greater responsiveness.**

Three fundamental beliefs:

ISLA

Data will come from patients monitoring their health from home

Presenting this data back to clinicians in real time allows for faster decisions without seeing the patient in person

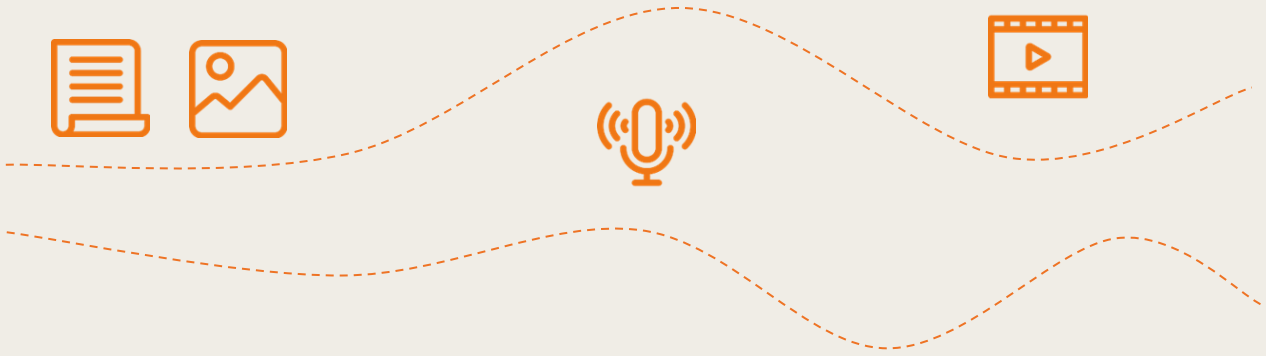
Shared visibility of this data across a health system drives efficiencies and better outcomes

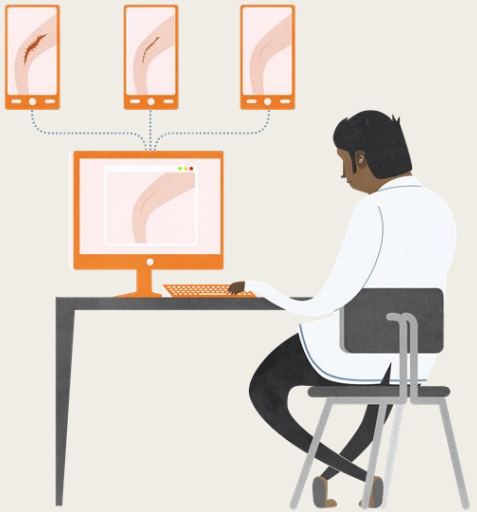
A vision for change

We believe that health systems are still right at the start of the journey with clinical data

We see two fundamental changes that need to happen to create the next transformative advance for healthcare

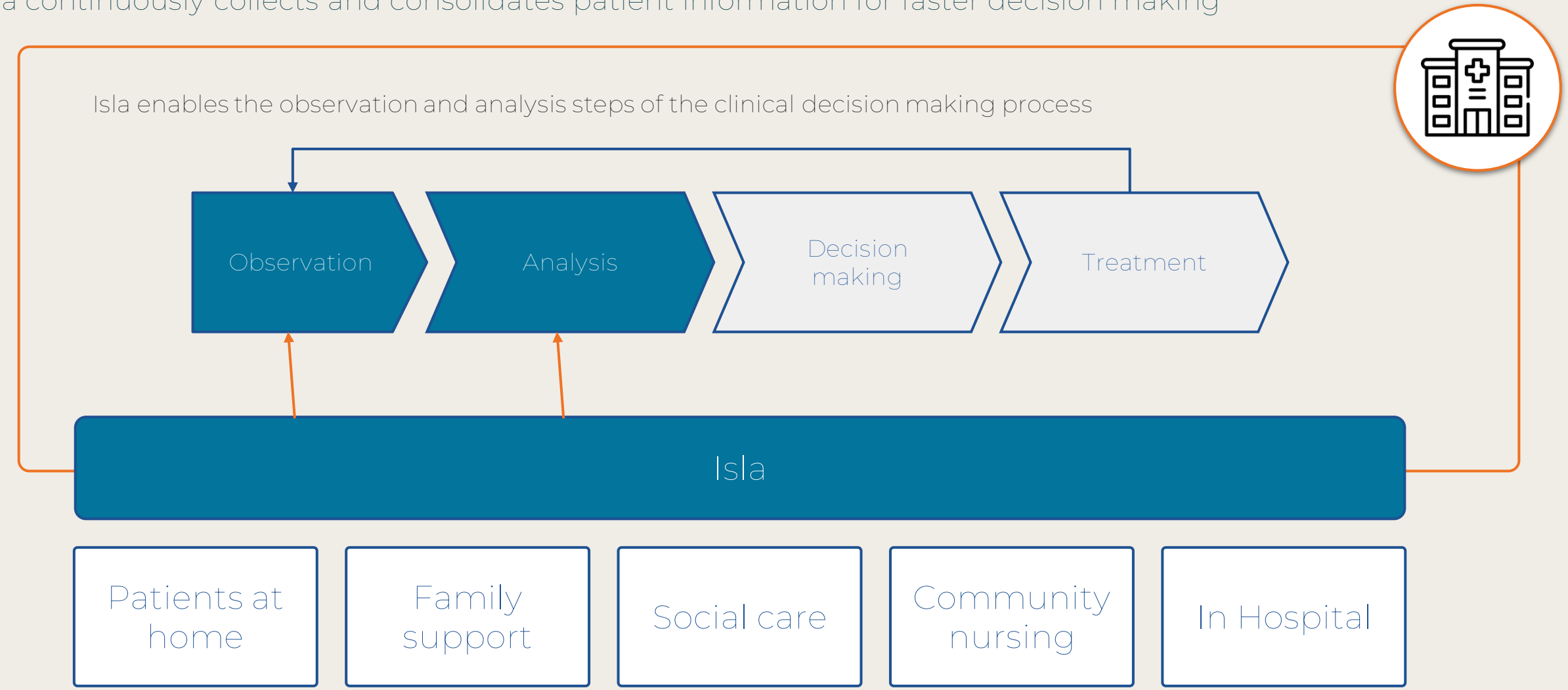
- Continuous, asynchronous, patient-generated clinical information
- Clinically defined codified decision making





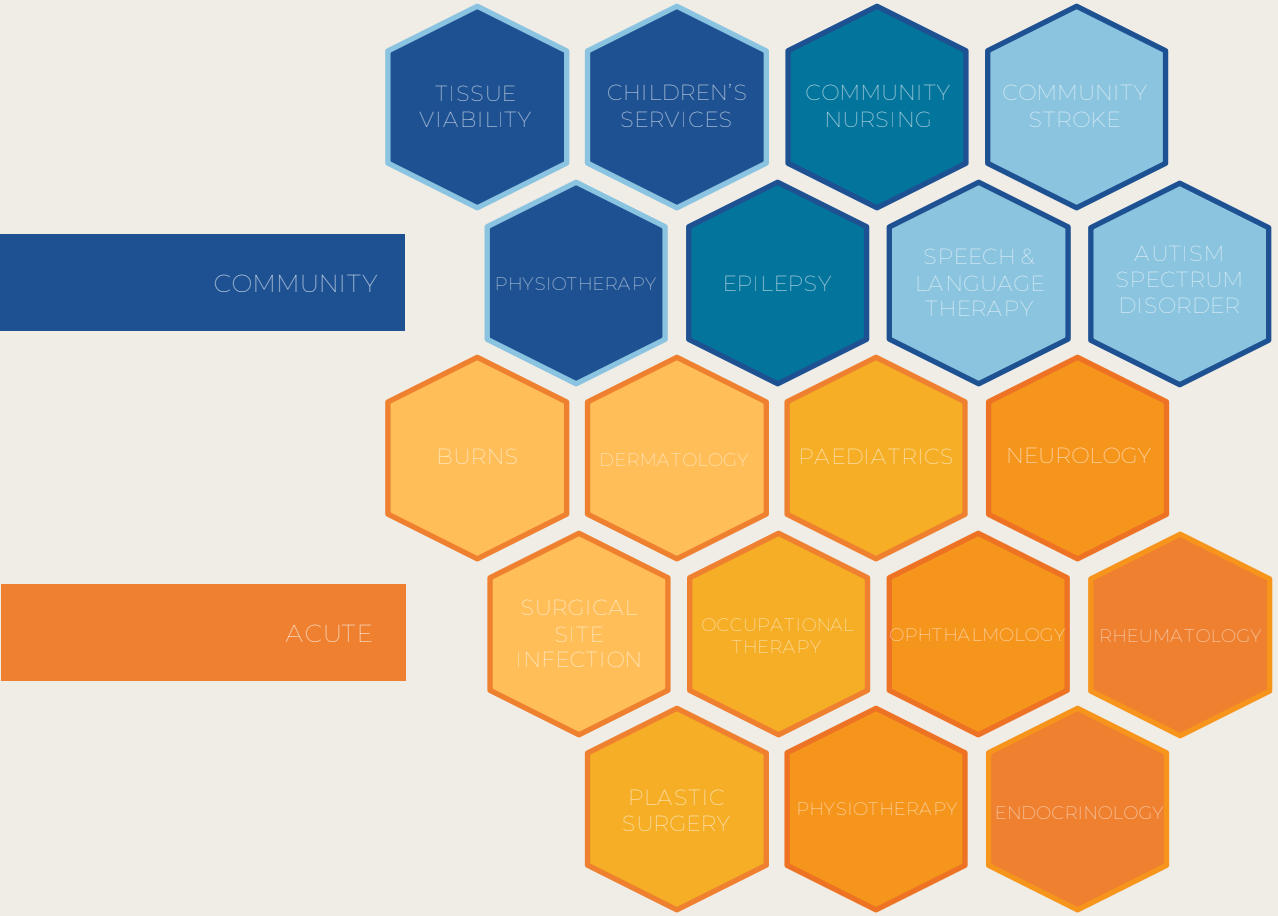
Structured clinical data

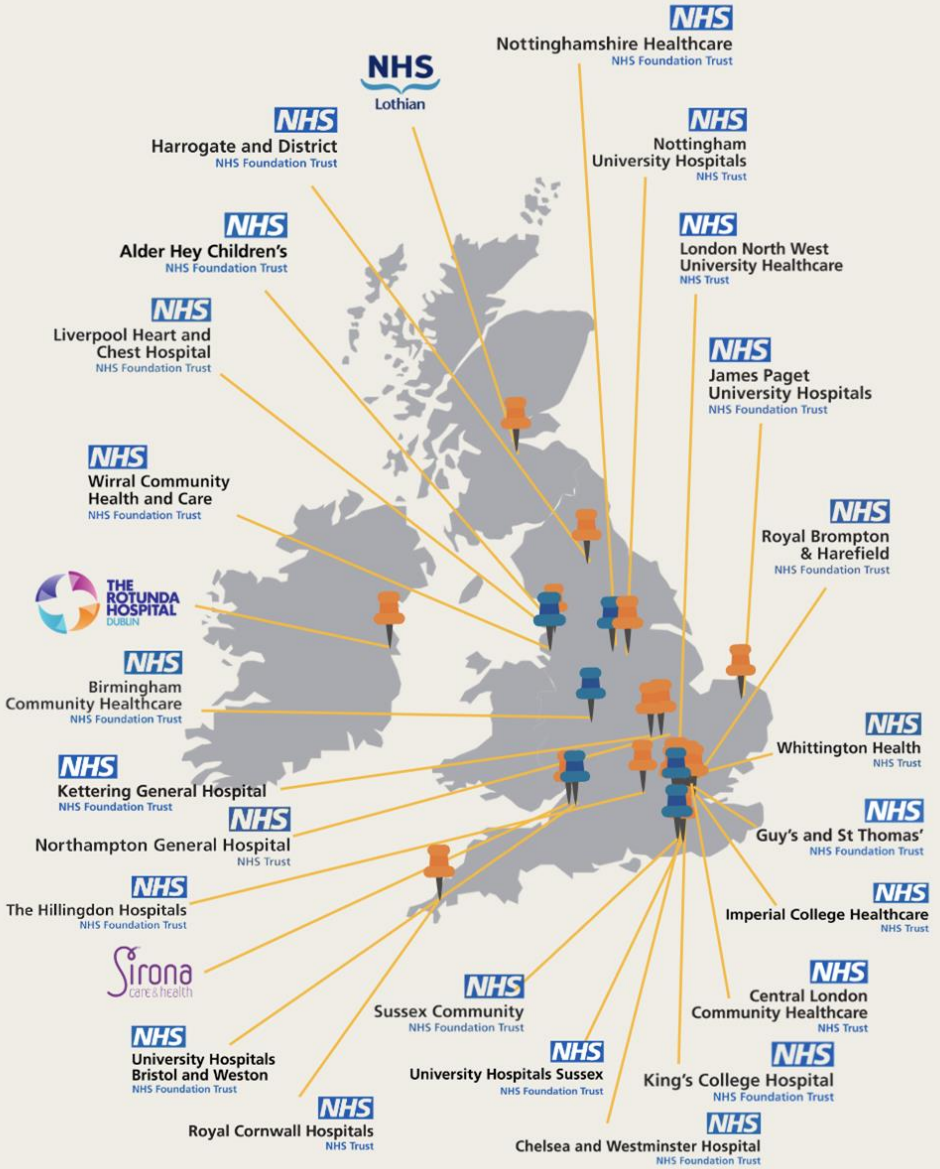
Isla continuously collects and consolidates patient information for faster decision making



Existing adoption

Within just under 3 years, we have partnered with 33 NHS Trusts across multiple specialties.





ISLA

Transformation at scale

Low friction

- Web-based
- No download or login credentials for patients
- Accessible from any device for clinicians
- Software only
- Intuitive UI

Breadth of application

- Deploy across an organisation or ICB
- Multifaceted benefits
- Link a patient's journey across different services

Automation

- Configurable schedules to produce automated workflows
- Automated interoperability with EPRs

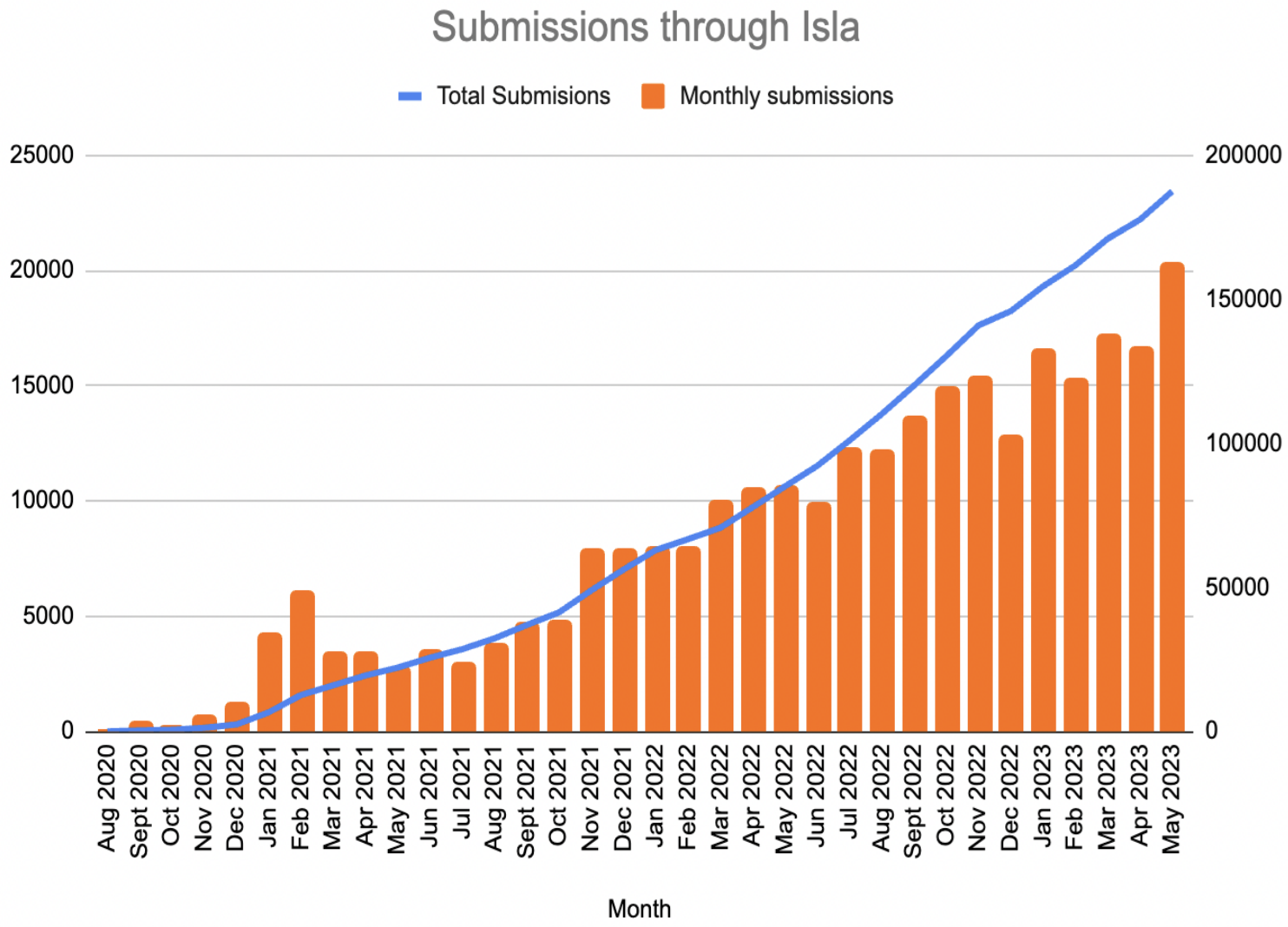
ISLA

Ramped up adoption

Across the North West London ICS we see 23,000 monthly submissions from patients and clinicians.

This is currently totalling over 200,000 and at the current rate of growth this will exceed 1m submissions and 100,000 per month by April '24.

This has largely been made possible through a software-first approach and intuitive platform UI.



Clinician's view

Collaboratively designed to provide a scalable solution which supports all modern media types

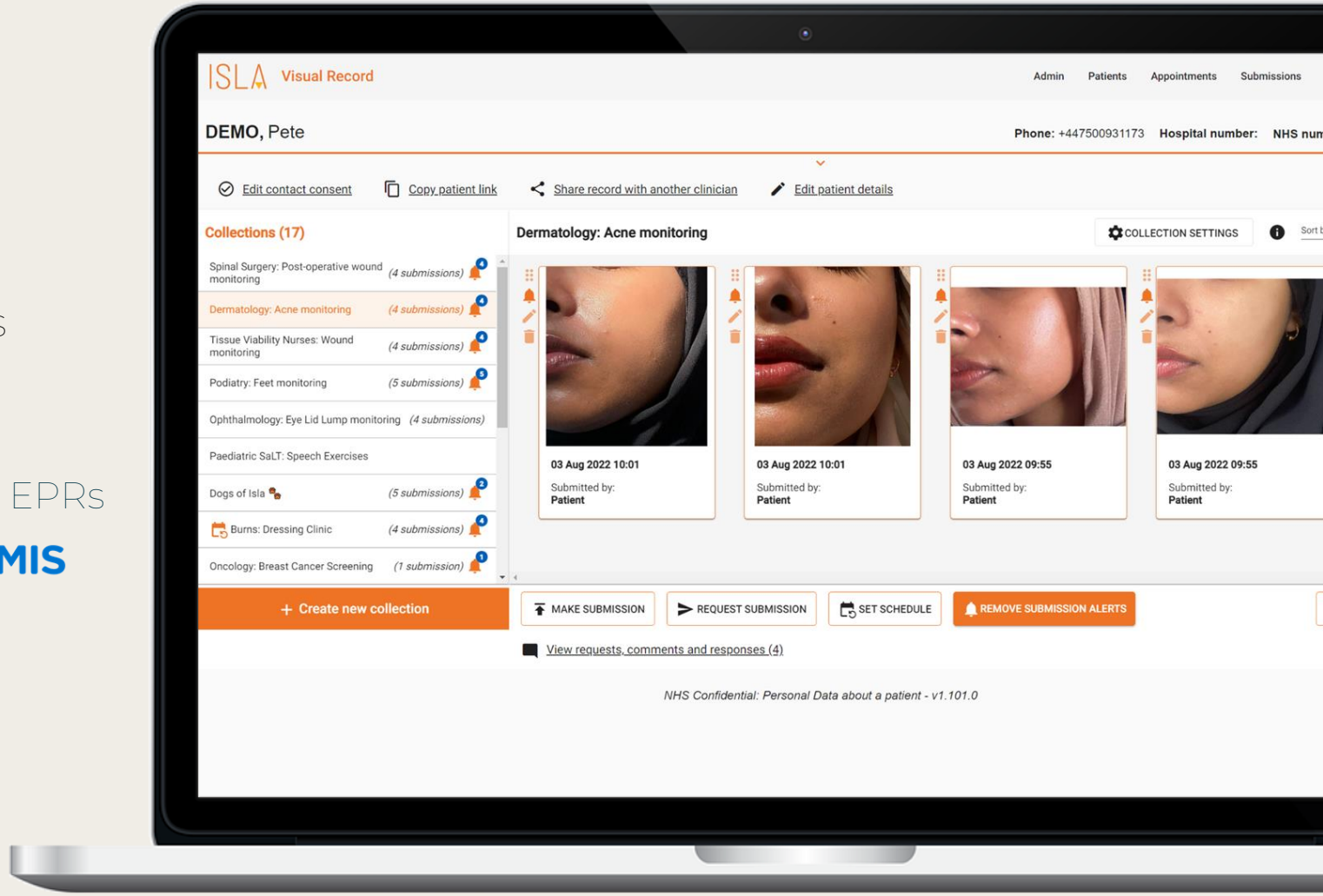
Built to interface with existing systems

Seamless interoperability with Trust EPRs

Epic Cerner tpp EMIS

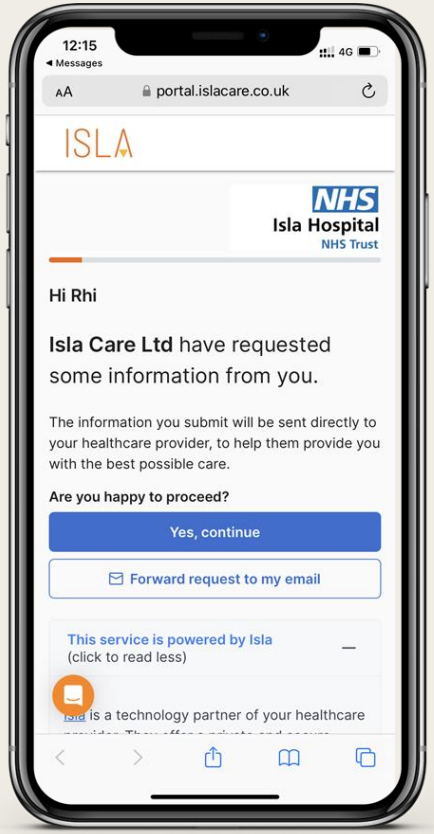
Cost-effective cloud storage

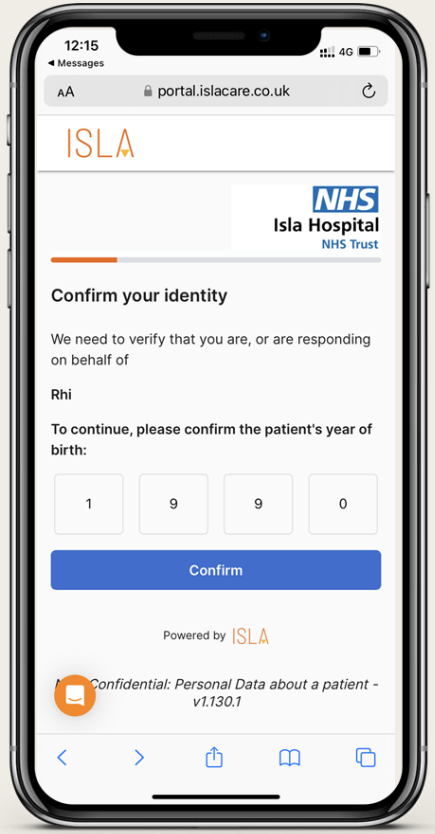
Entirely web-based

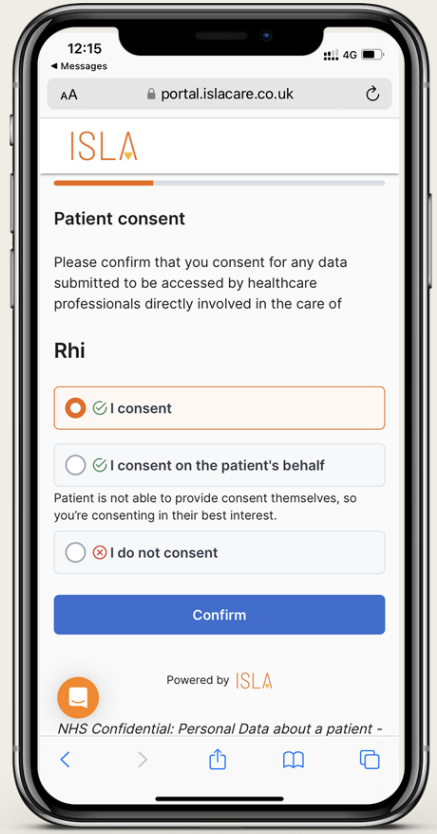


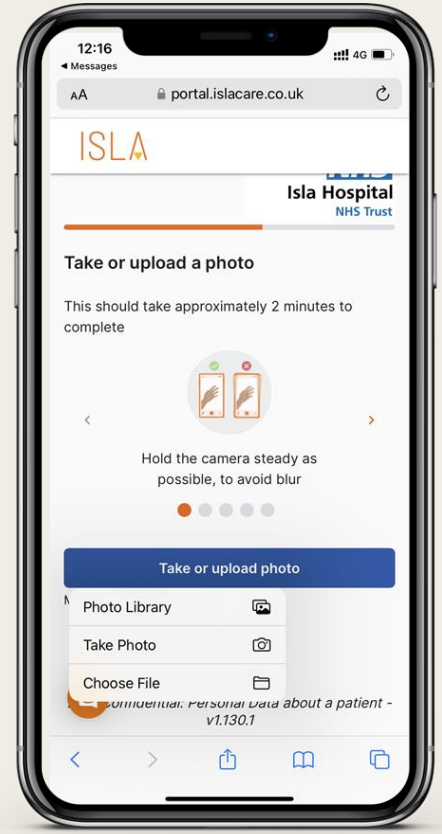
Patient's view

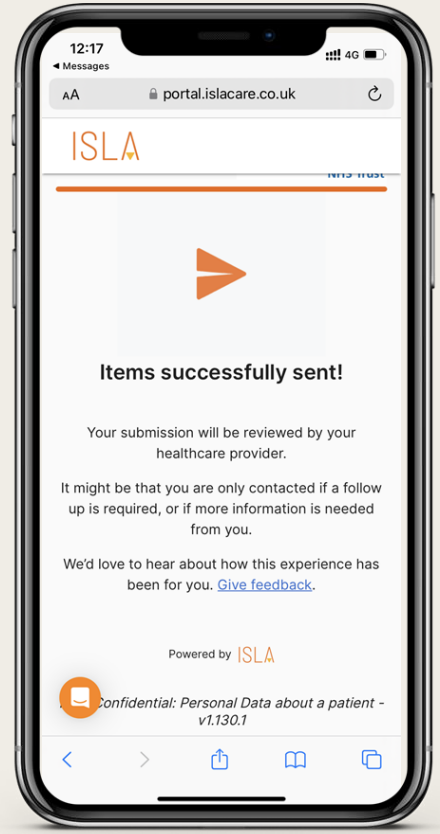
Submit in 5 clicks







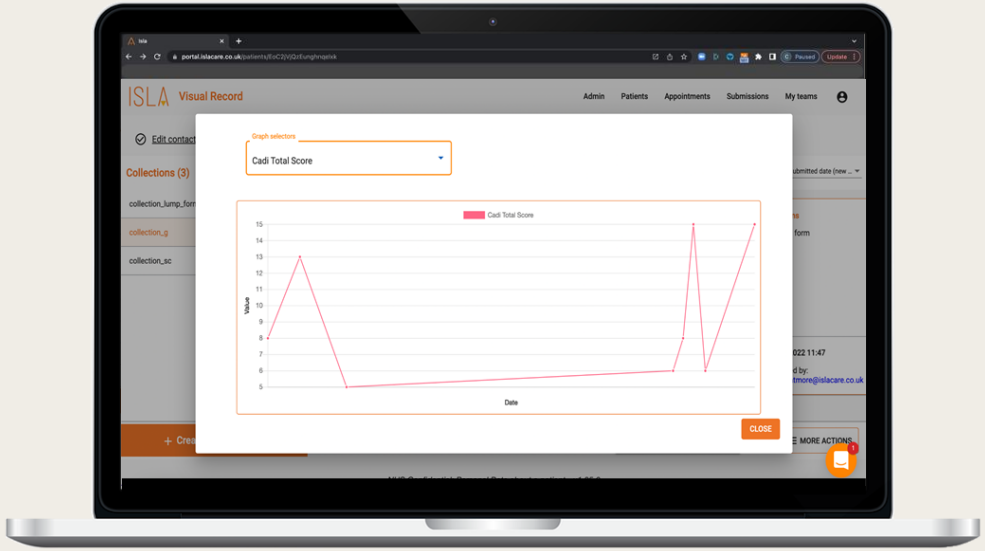


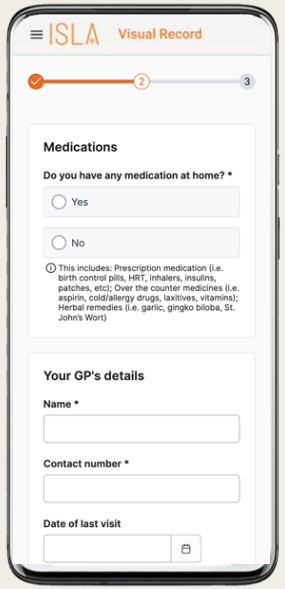


Form functionality

Isla already holds 300+ structured digital questionnaires.

Our scheduling functionality allows you to automatically request these at regular intervals, thereby standardizing the collection of PROMs.





Unlimited form functionality:

- Mandatory questions
- Multiple choice/drop down questions
- Likert scales
- Score calculations
- Body maps
- Data visualisation: plot answers on a graph where quantitative
- Conditional logic: questionnaires which adapt according to previous answers
- Exporting form data as csv files for audit purposes

We can build any form you have to sit natively within Isla at no additional cost

ISLA

ISLA

Thank you

Slido

Please scan the QR Code on the screen. This will take you through to Slido, where you can interact with us.

SCAN ME

CONVENZIS

Speaking Now…

Becs Winterborn

Clinical Lead Bristol, North Somerset, South Gloucestershire NHS@Home, Clinical Lead NHSE SW NHS@Home, Consultant Vascular Surgeon, Certified Coach and Trainer - **North Bristol NHS Trust**

NHS
Bristol, North Somerset
and South Gloucestershire
Integrated Care Board

NHS@Home

The story so far.....

Becs Winterborn - Clinical Lead BNSSG NHS@Home (Virtual Ward Programme)

Clinical Lead NHS@Home NHSE SW

Consultant Vascular Surgeon

NHS
Bristol, North Somerset
and South Gloucestershire

NHS@Home: The story so far.....

Sirona Home oximetry

System-wide Covid VW set up for those most at risk

Start: November 2020

2018 | 2019 | 2020 | 2021 | 2022 | 2023 | April 2024

@Home care begins

NBT "Hospital@Home"
Capacity 15-20

Start: January 2018

System-wide Covid VW established

End-to end CVW

Managed through digital platform, collaborative & System-wide

Start: July 2021

Clinical cabinet agrees to exploration of HT@H

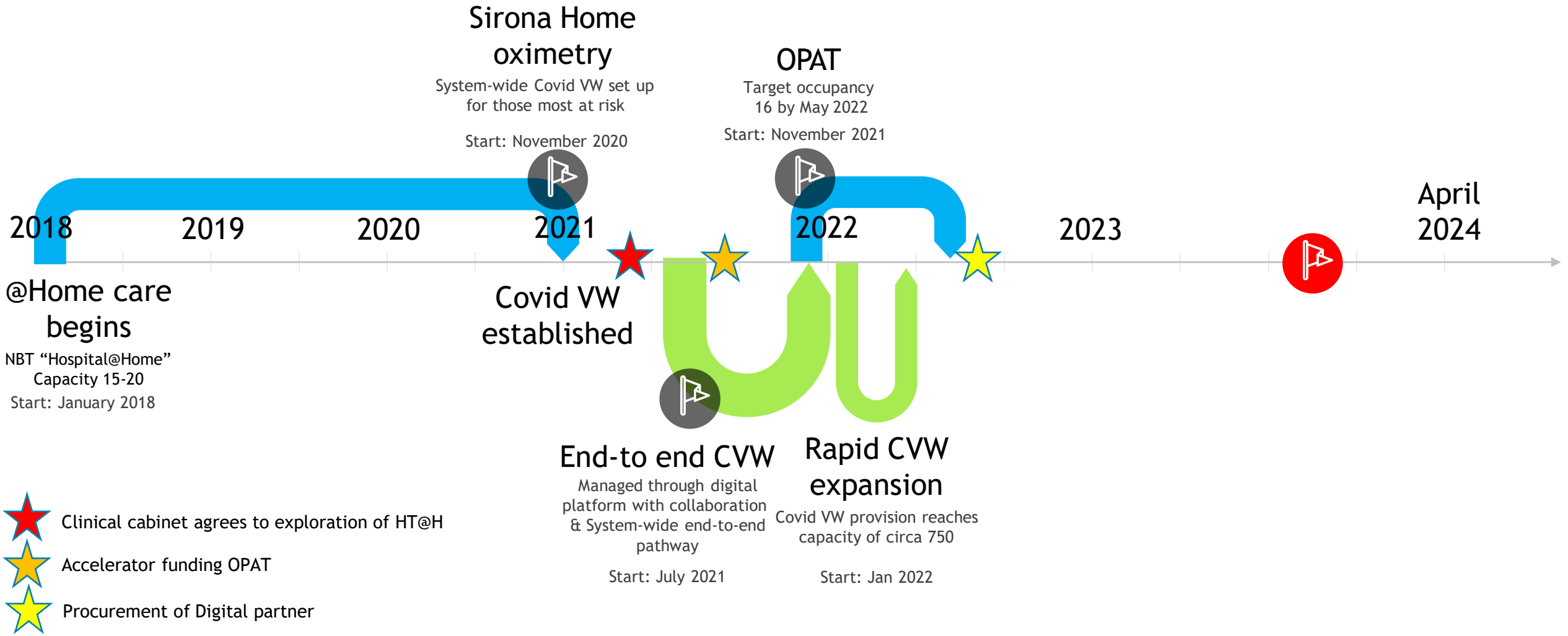
NHS
Bristol, North Somerset
and South Gloucestershire

NHS@Home: The story so far.....

"To develop integrated, **technology-enabled**, **@Home pathways** (Virtual wards),
through collaboration, trust, and shared values.
'Admission' will be based on clinical need, with **equity of access**,
benefiting **patients**, staff, and the wider community.
We will deliver **safe**, compassionate care **in people's homes**;
through consistent, seamless pathways
with **clear communication** and **access to experts**.
Shared knowledge and learning will promote the evolution of a **high-quality service**,
with no barriers to its ongoing success."

NHS
Bristol, North Somerset
and South Gloucestershire

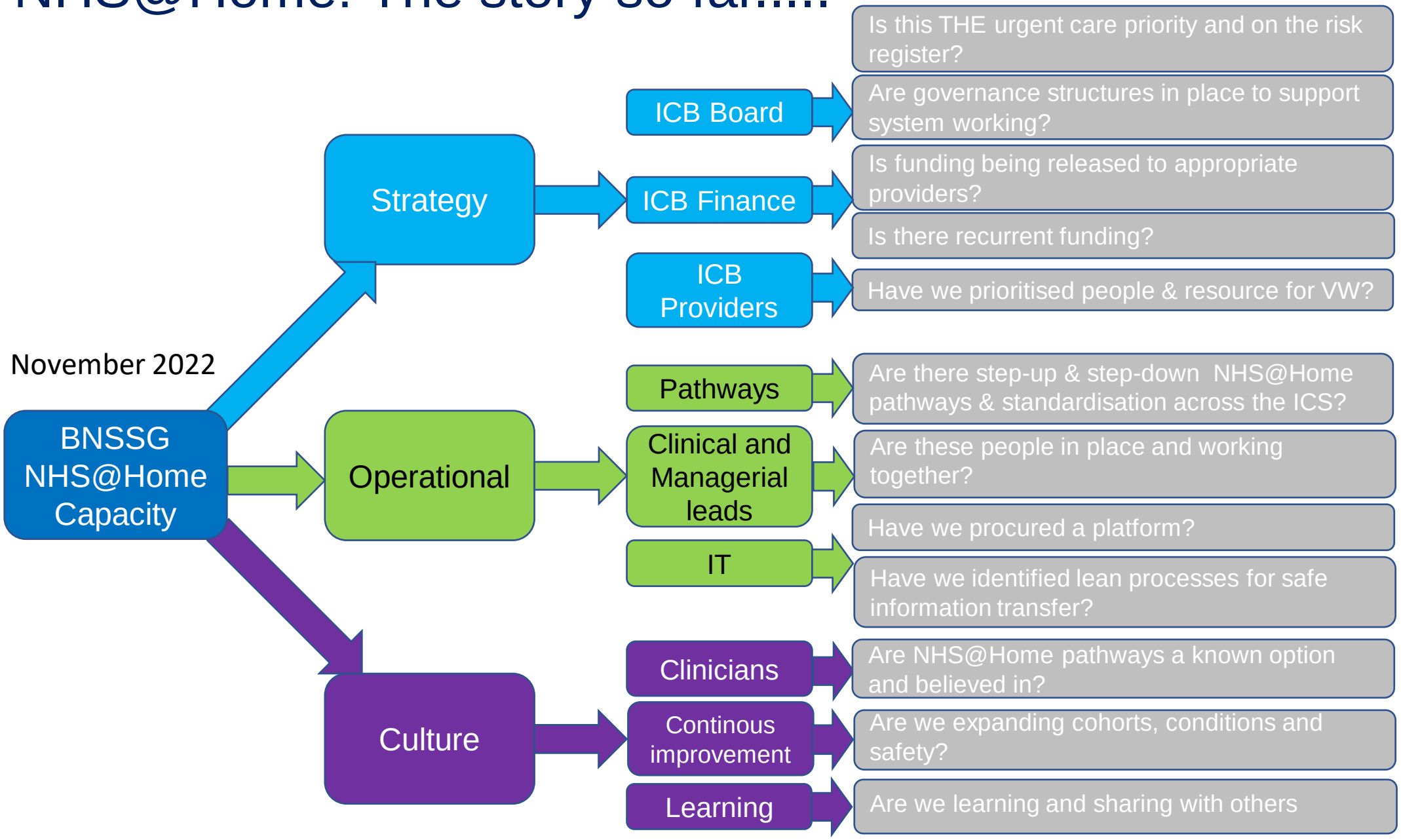
NHS@Home: The story so far.....



NHS
Bristol, North Somerset and South Gloucestershire

NHS@Home: The story so far.....

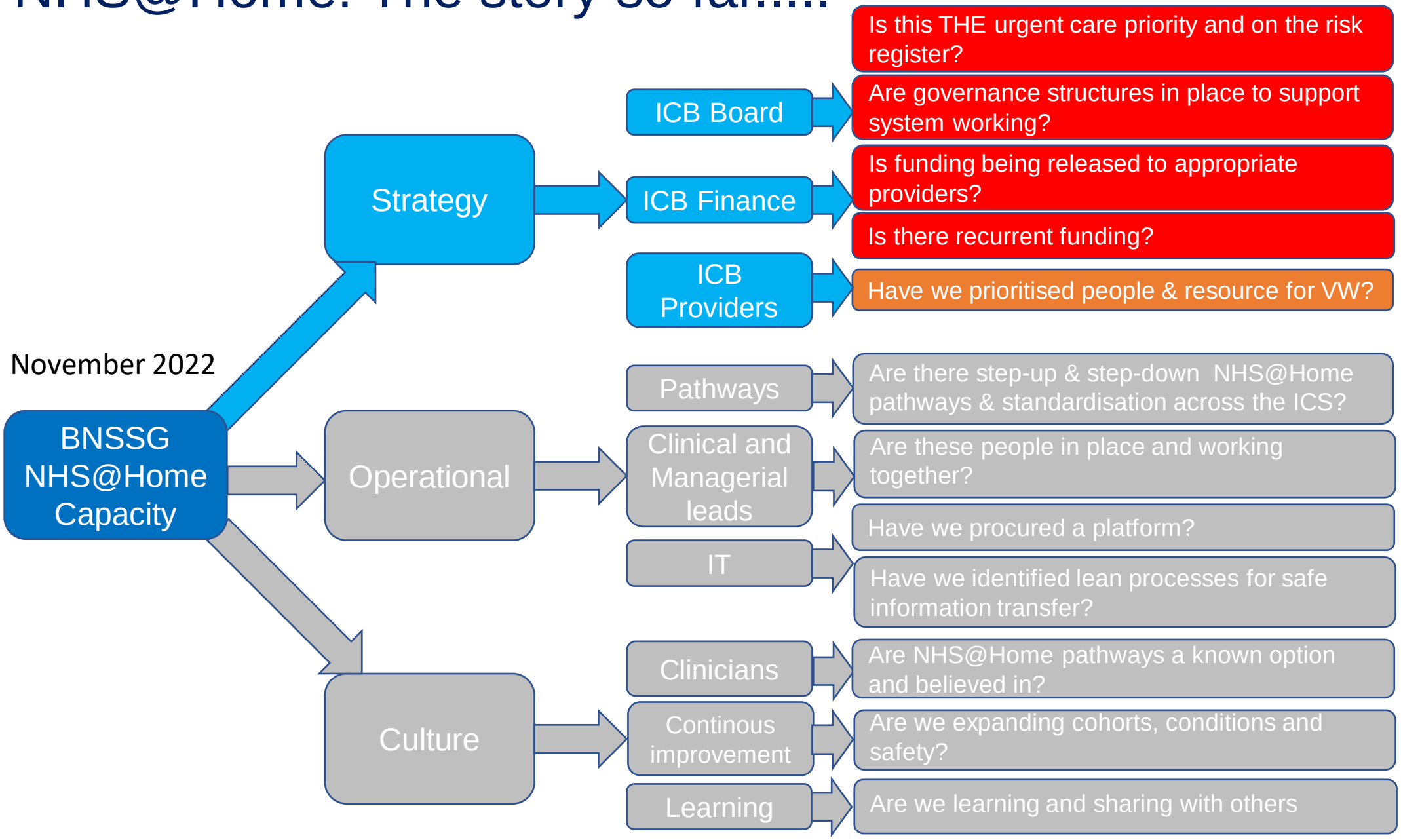
November 2022



NHS
Bristol, North Somerset and South Gloucestershire

NHS@Home: The story so far.....

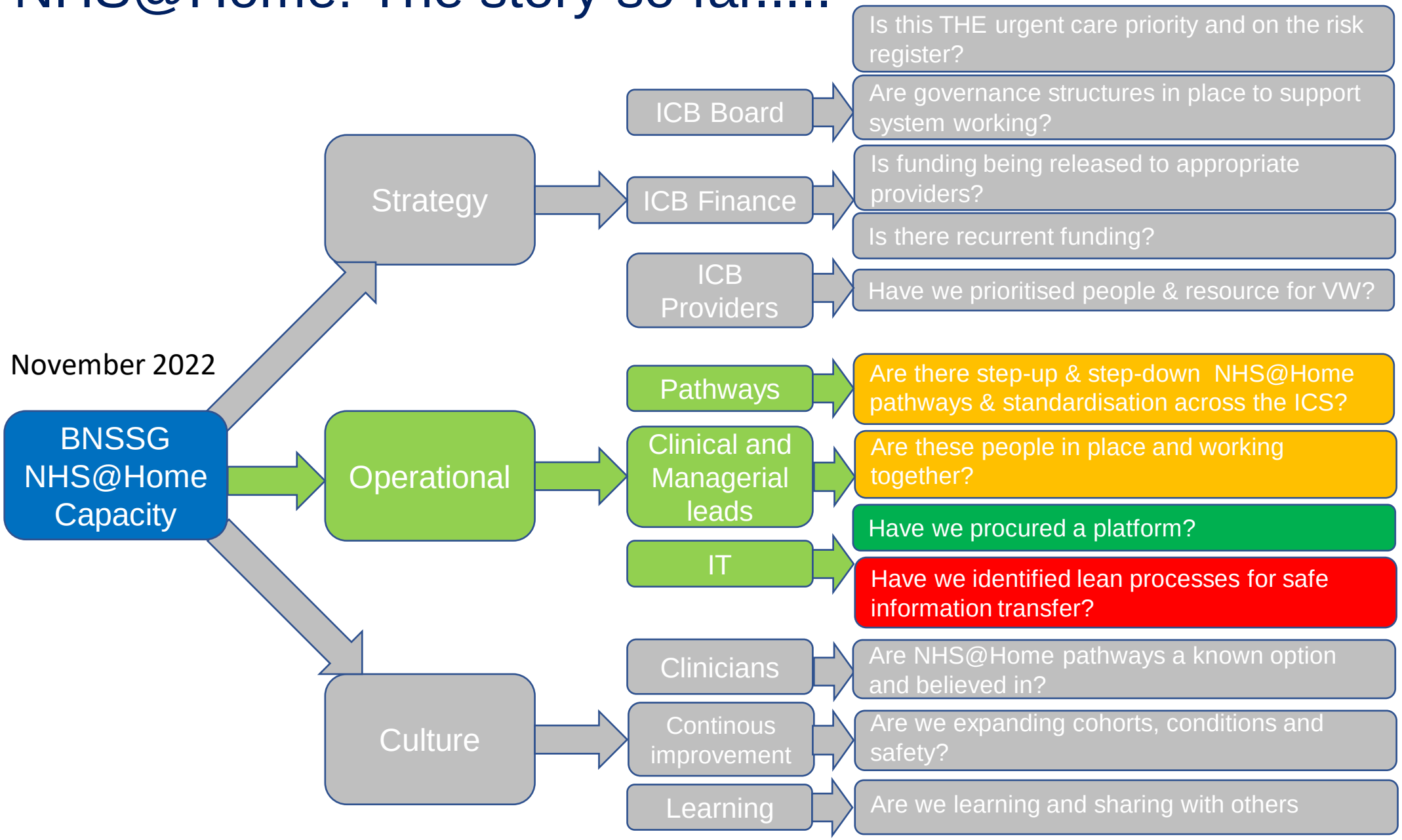
November 2022



NHS
Bristol, North Somerset and South Gloucestershire

NHS@Home: The story so far.....

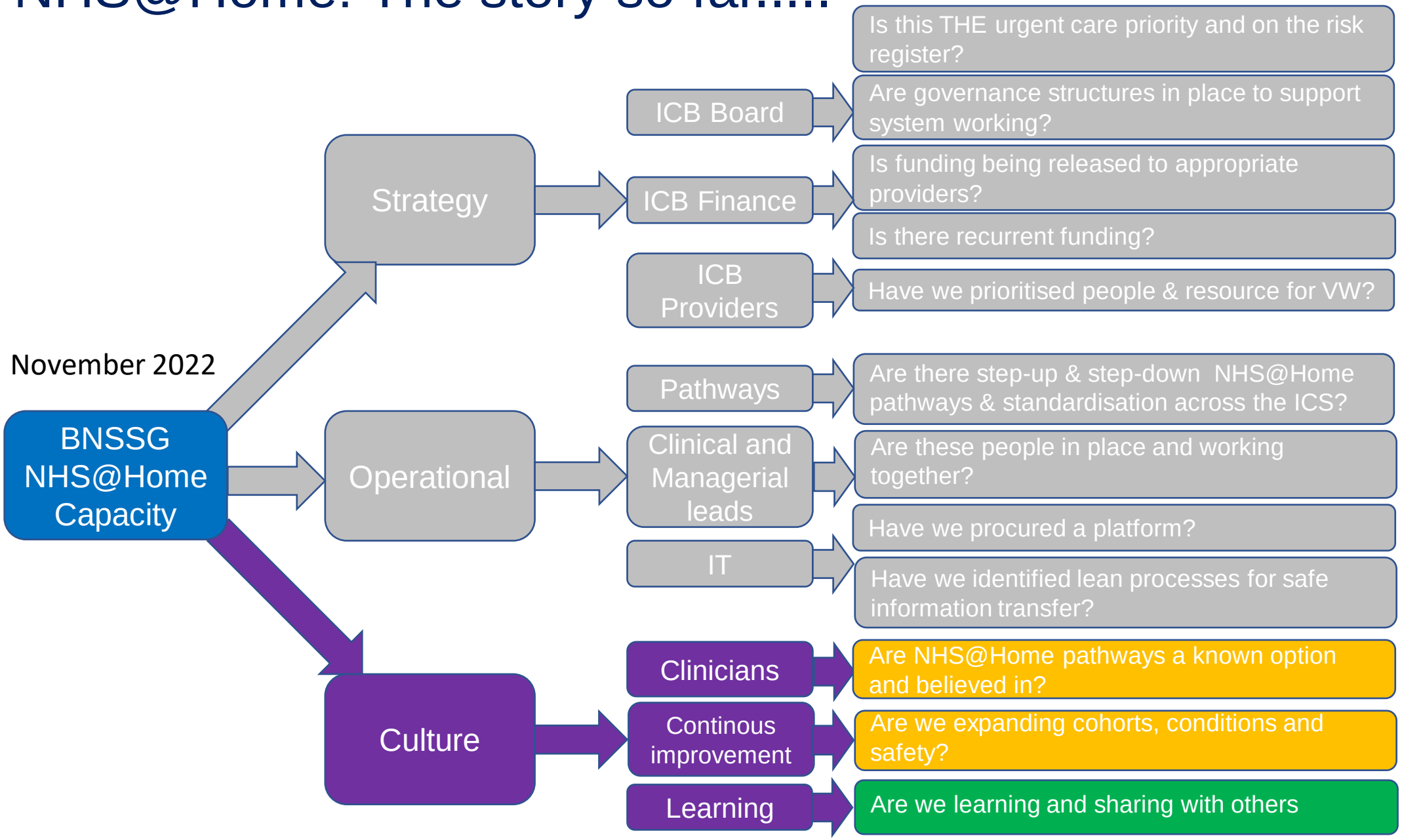
November 2022



NHS
Bristol, North Somerset and South Gloucestershire

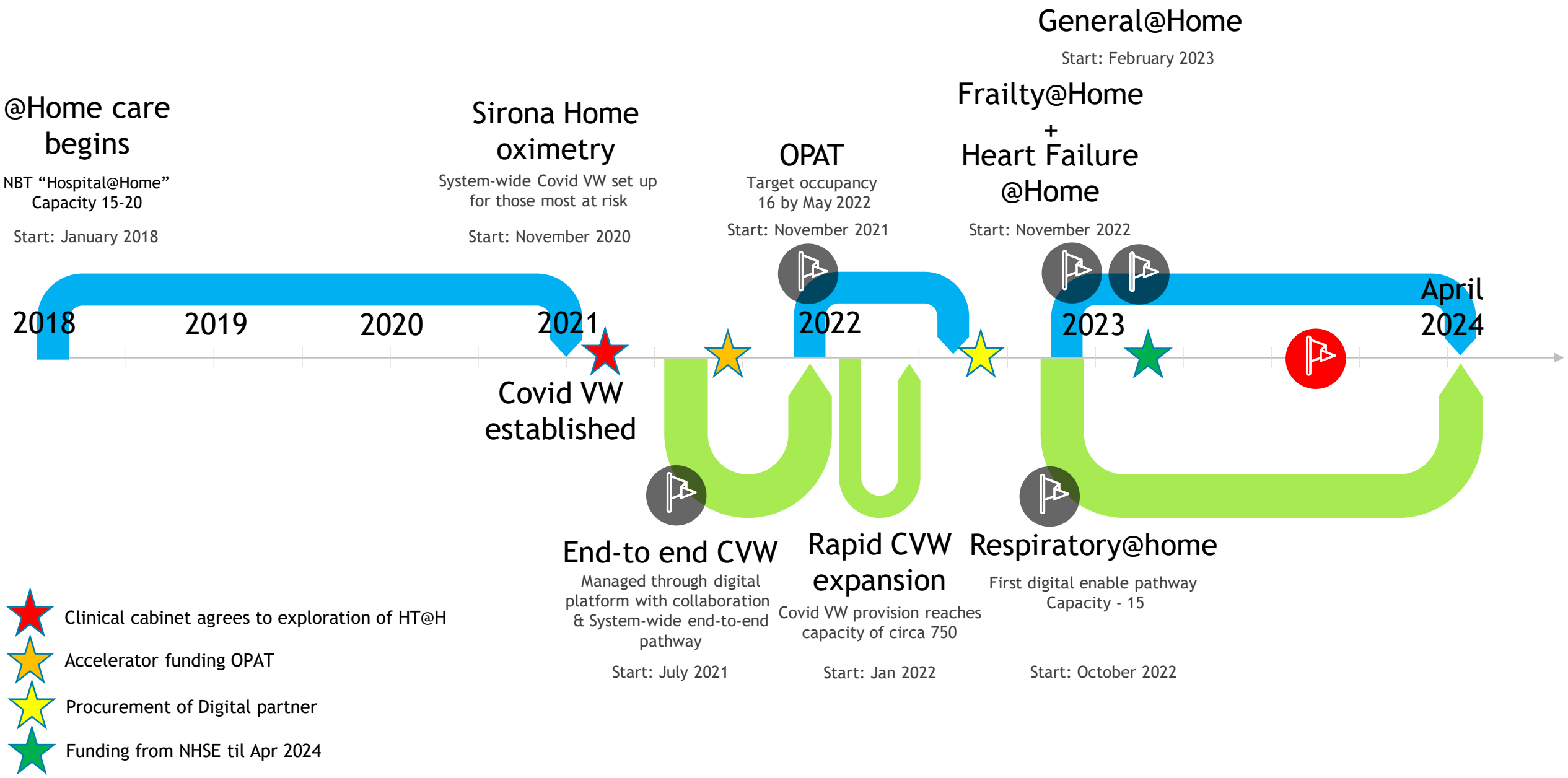
NHS@Home: The story so far.....

November 2022



NHS
Bristol, North Somerset
and South Gloucestershire

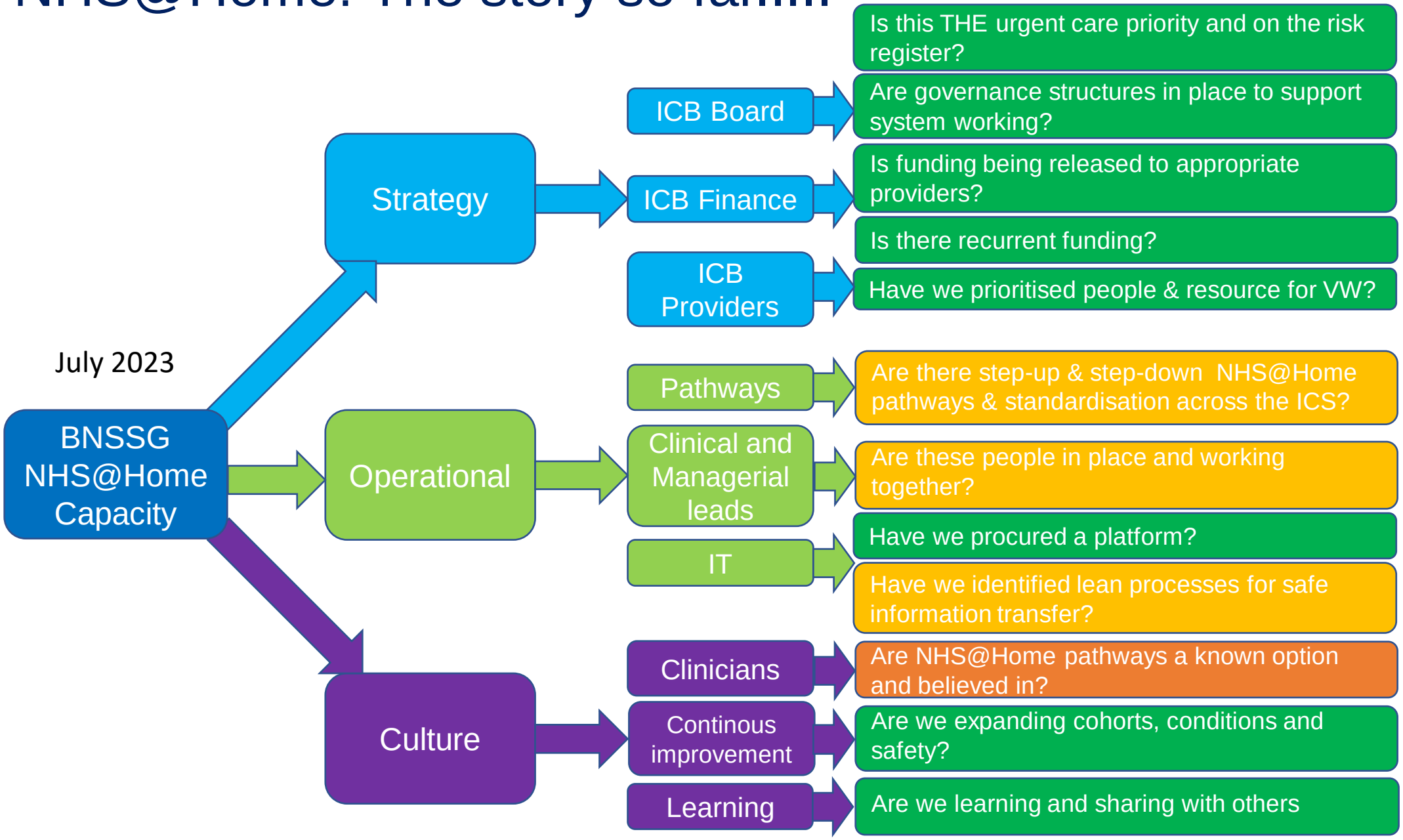
NHS@Home: The story so far.....



Bristol, North Somerset and South Gloucestershire

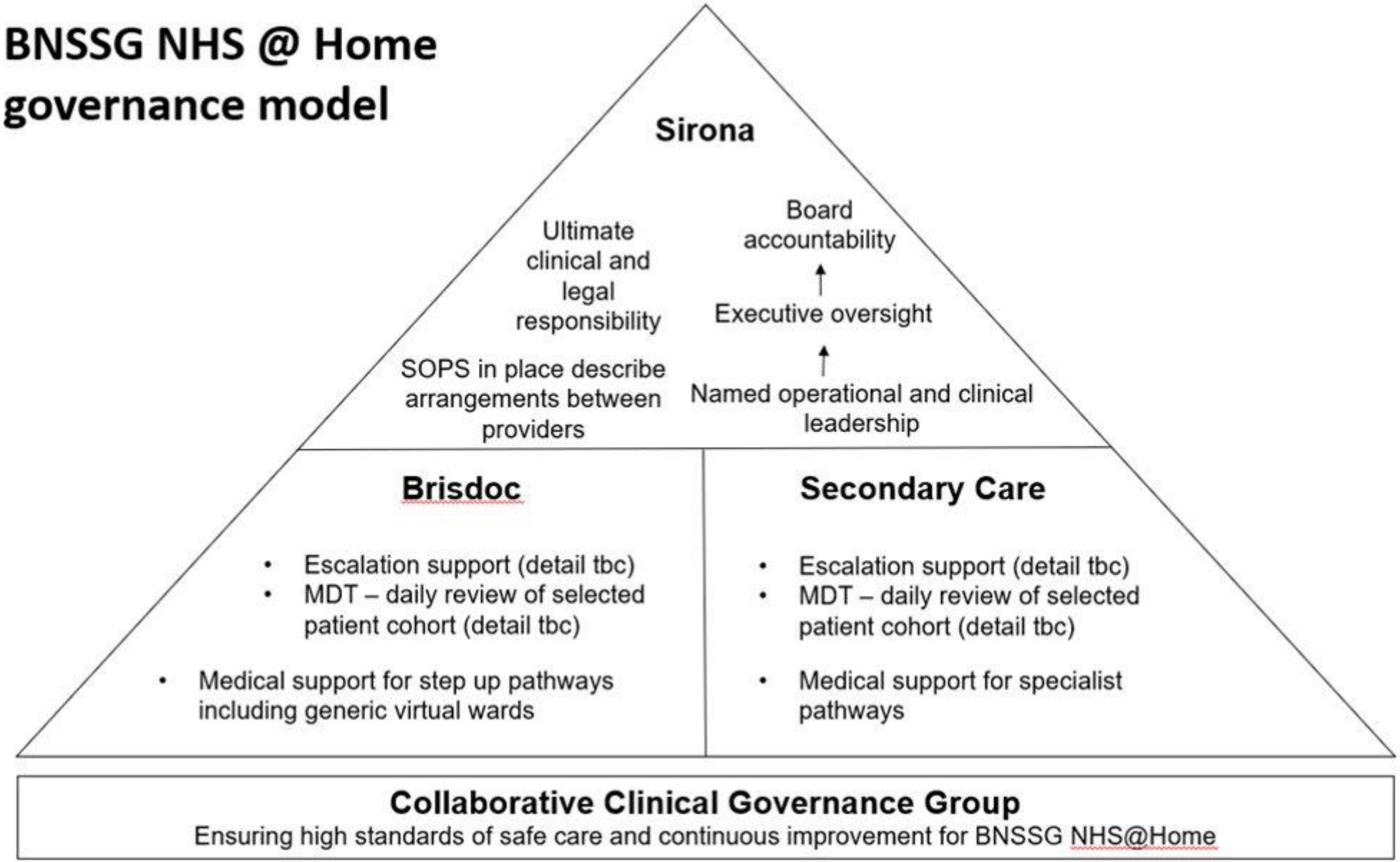
NHS@Home: The story so far.....

July 2023



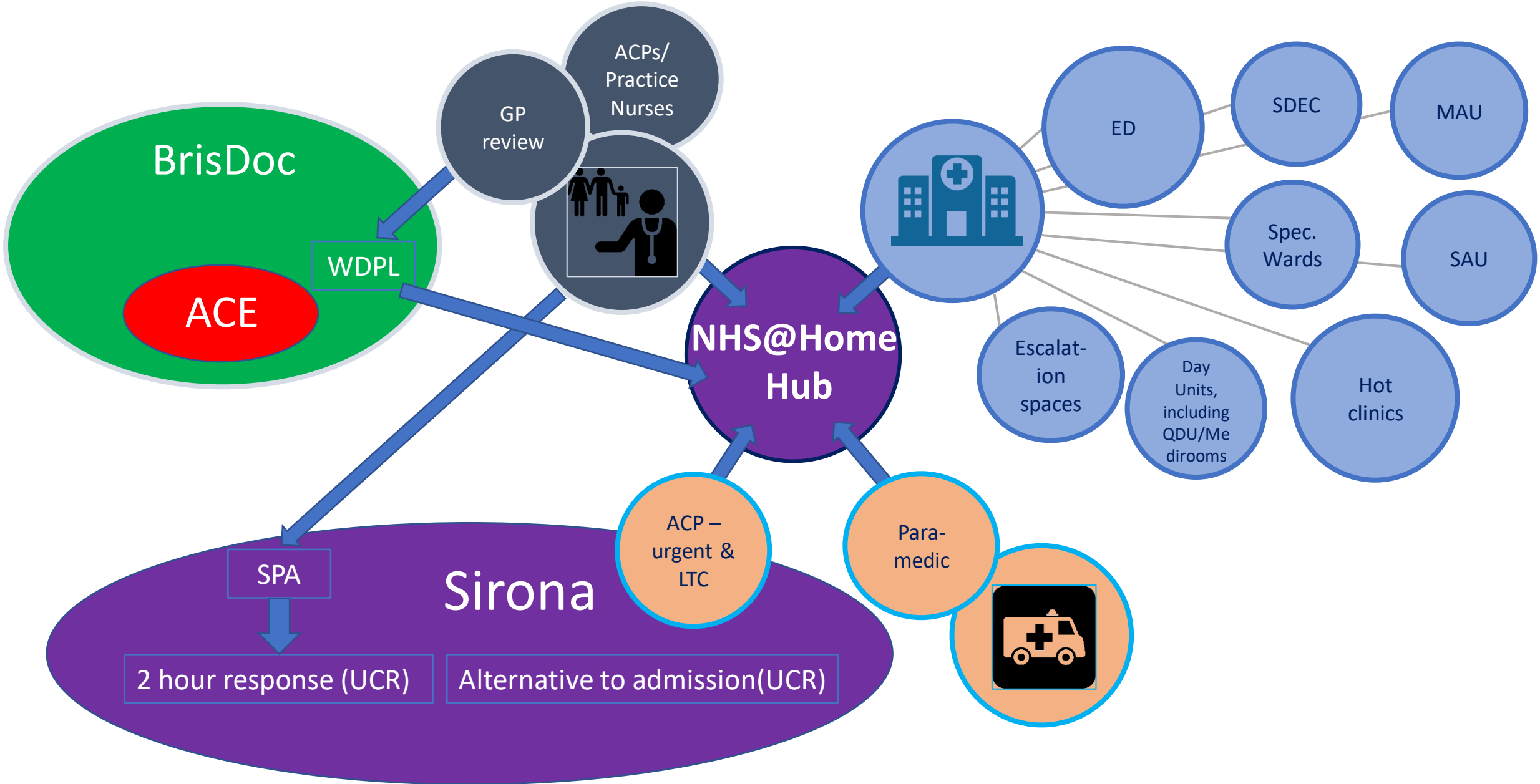
NHS
Bristol, North Somerset
and South Gloucestershire

BNSSG NHS @ Home governance model



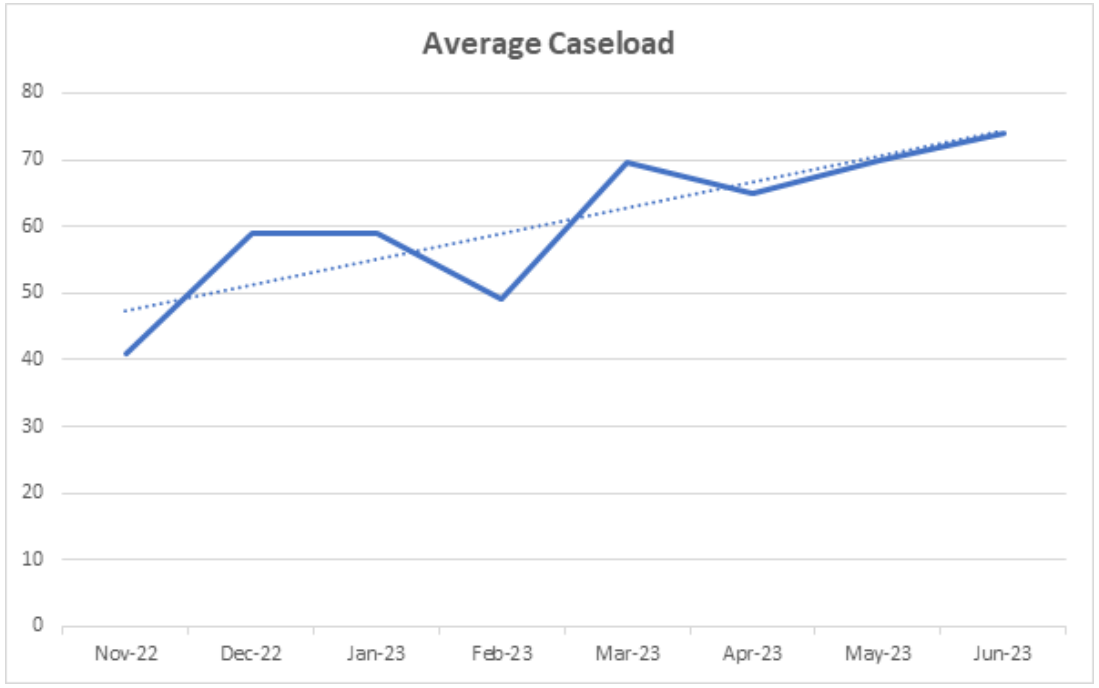
NHS
Bristol, North Somerset
and South Gloucestershire

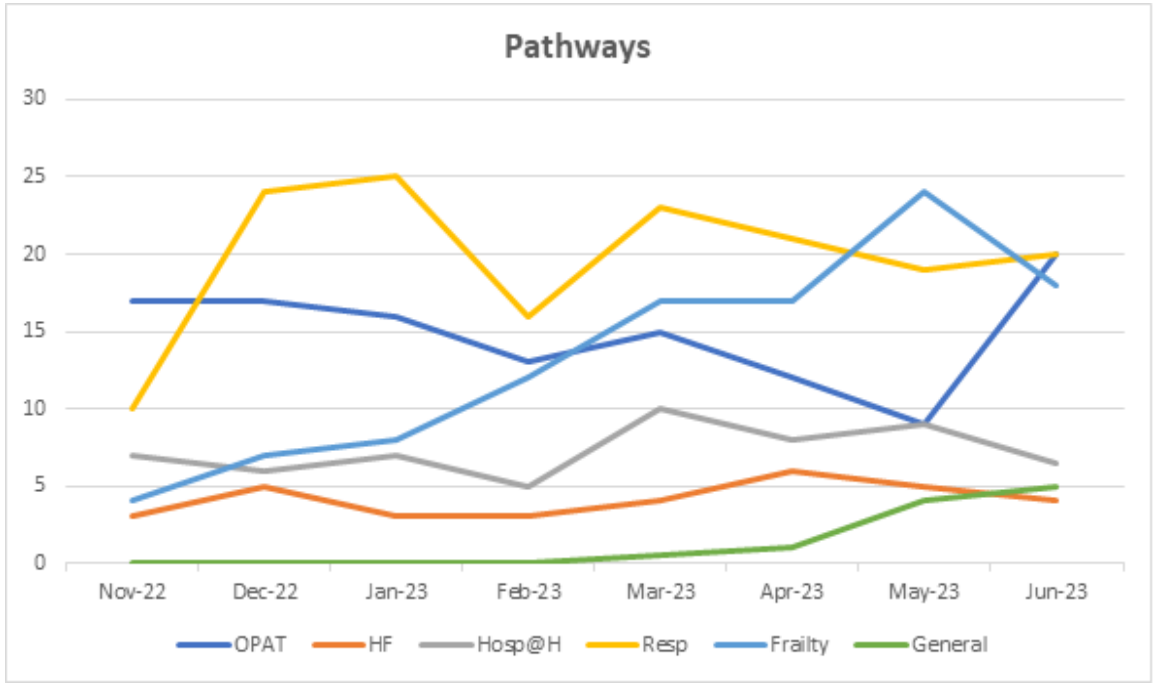
NHS @Home Referral routes



Bristol, North Somerset and South Gloucestershire

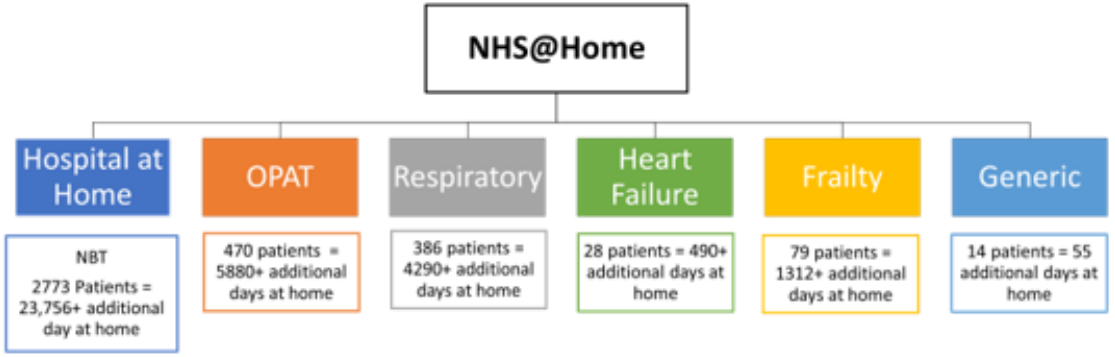
NHS@Home: The story so far.....





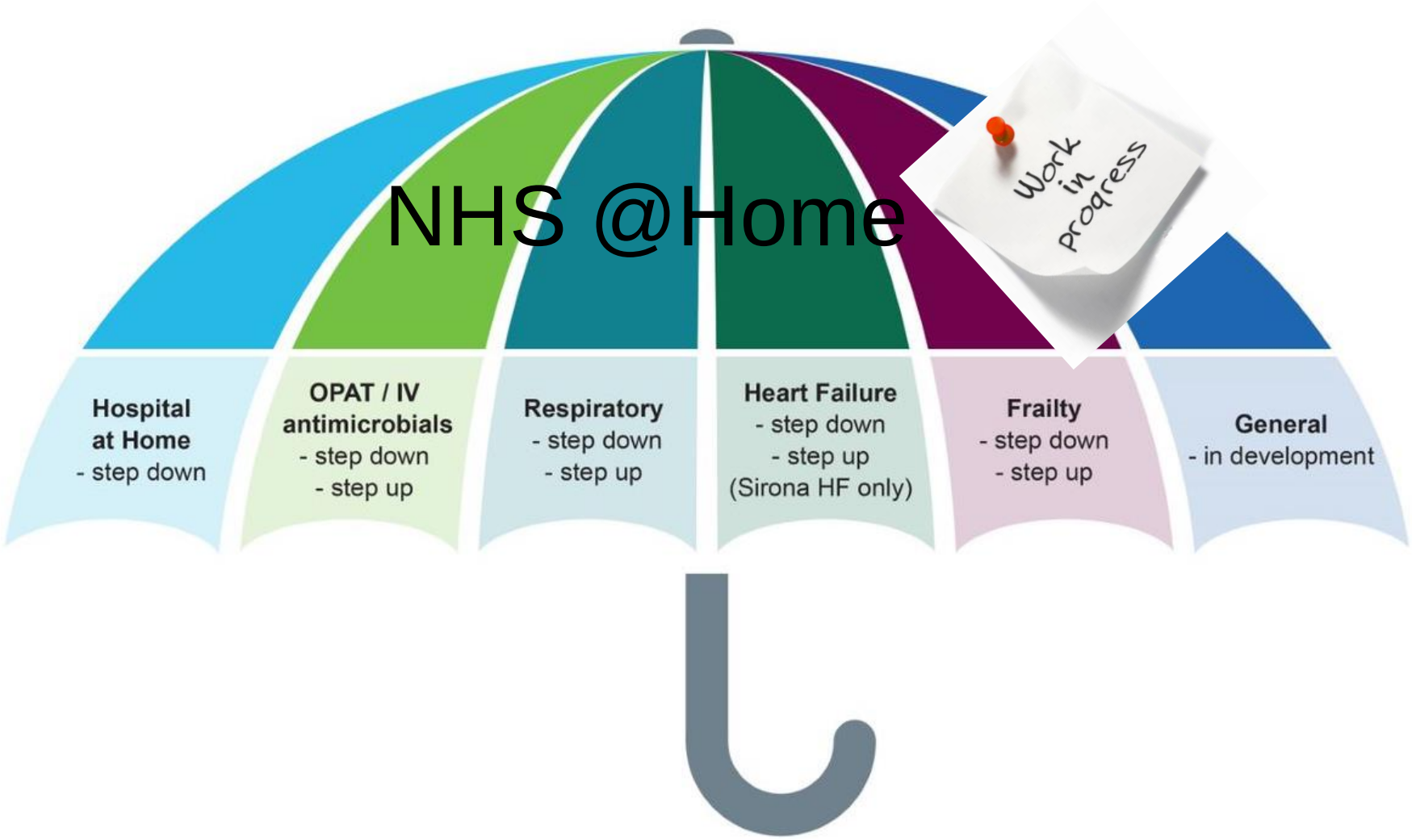
3750 patient transferred since 2018

35,783+ additional days at home since 2018 (bed days saved)



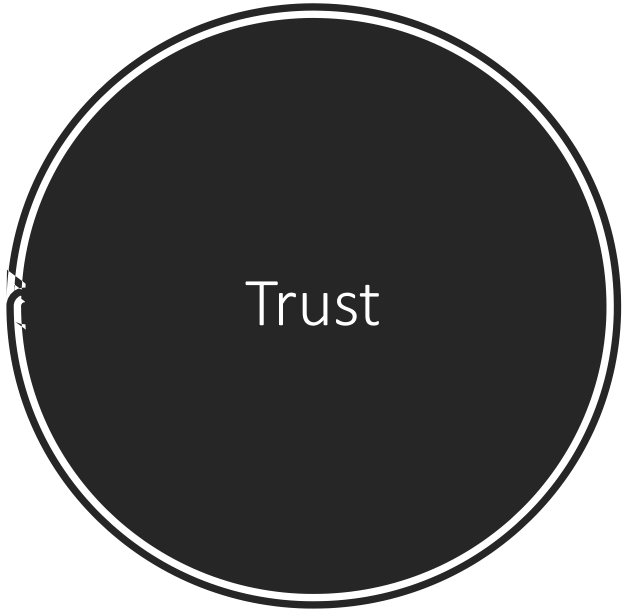
NHS
Bristol, North Somerset
and South Gloucestershire

NHS@Home: The story so far.....



NHS
Bristol, North Somerset
and South Gloucestershire

NHS@Home: The story so far.....



NHS
Bristol, North Somerset and South Gloucestershire

NHS@Home: The story so far.....

UHBW

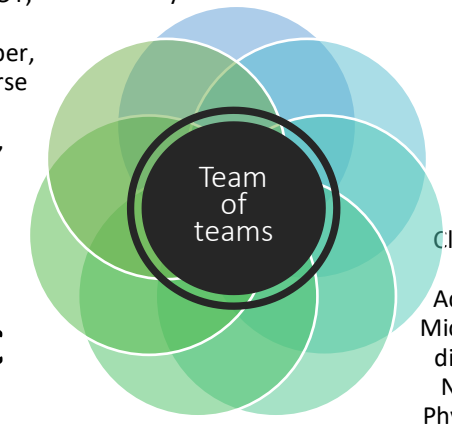
Clinical Operational Lead, Nurses, Pharmacy, Microbiology, Consultants – direct/indirect , Specialist Nurse and Practitioners, Physician Associate

Sirona

Clinical Operational Lead, hub managers, Nurses, OT, Physio, virtual team, navigator, social prescriber, NA, ACPs, Specialist Nurse and Practitioners, Programme Manager, Operational Lead NHS@Home

Doccla

Nurses – virtual monitoring and escalations, onboarding team



NBT

Clinical Operational Lead, Nurses, AP/TNA/NA, Administrator, Pharmacy, Microbiology, Consultants – direct/indirect , Specialist Nurse and Practitioners, Physician Associate, Clinical Lead NHS@Home

BrisDoc

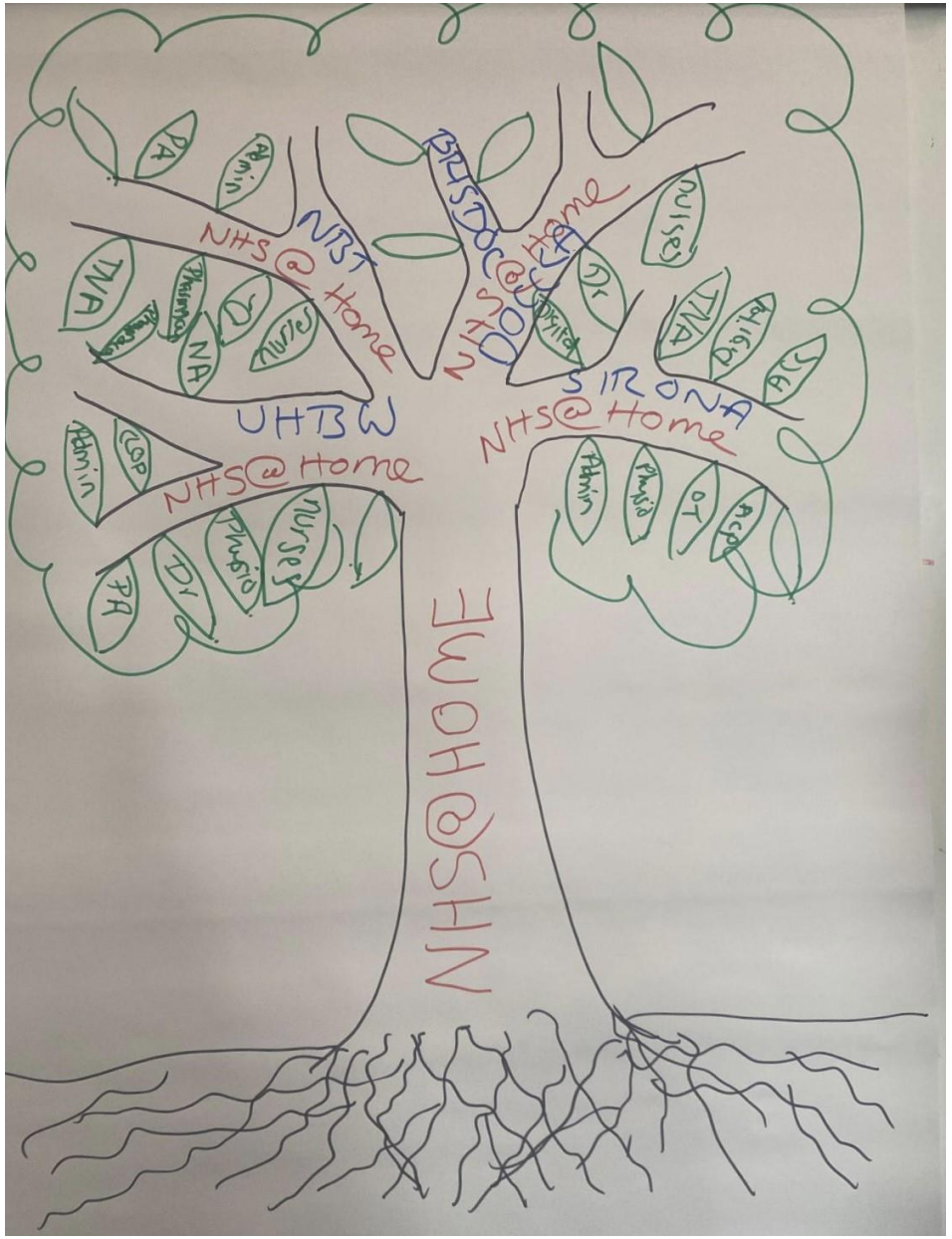
Clinical Co-ordinators

ICB

Senior Programme Manager

Bristol, North Somerset and South Gloucestershire

NHS@Home: The story so far.....



NHS
Bristol, North Somerset
and South Gloucestershire

NHS@Home: The story so far.....

Speaking Now…

Becky Housley
Consultant Nurse - **Hampshire Hospitals NHS Foundation Trust**

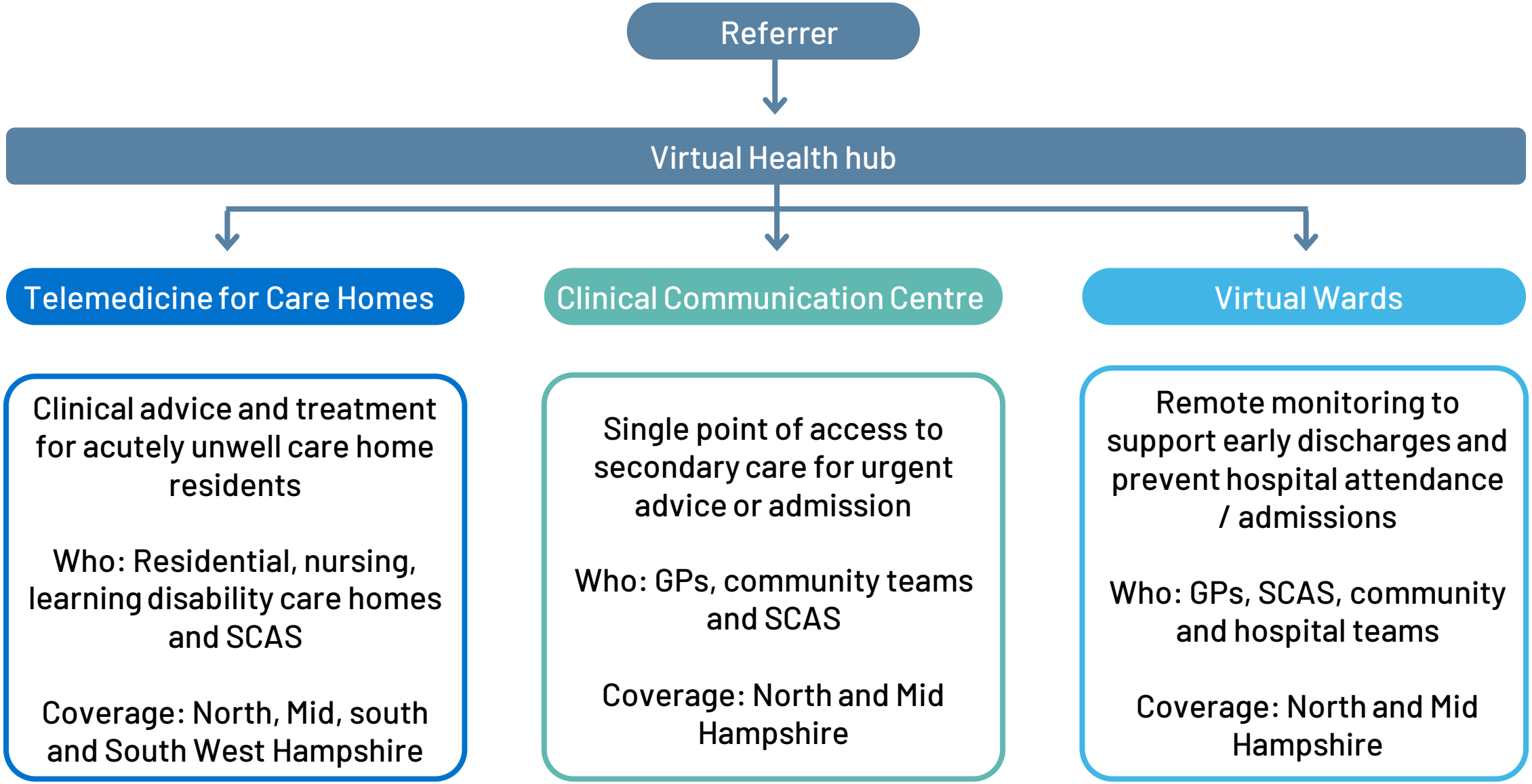
Claire Harman
Head of Patient Discharge and Flow - **Hampshire Hospitals NHS Foundation Trust**

SUPPORTING PEOPLE AT THE PLACE THEY CALL HOME & SAFELY REDUCING HOSPITAL ATTENDANCES

Claire Harman, head of integrated discharge
&
Rebecca Housley, consultant nurse

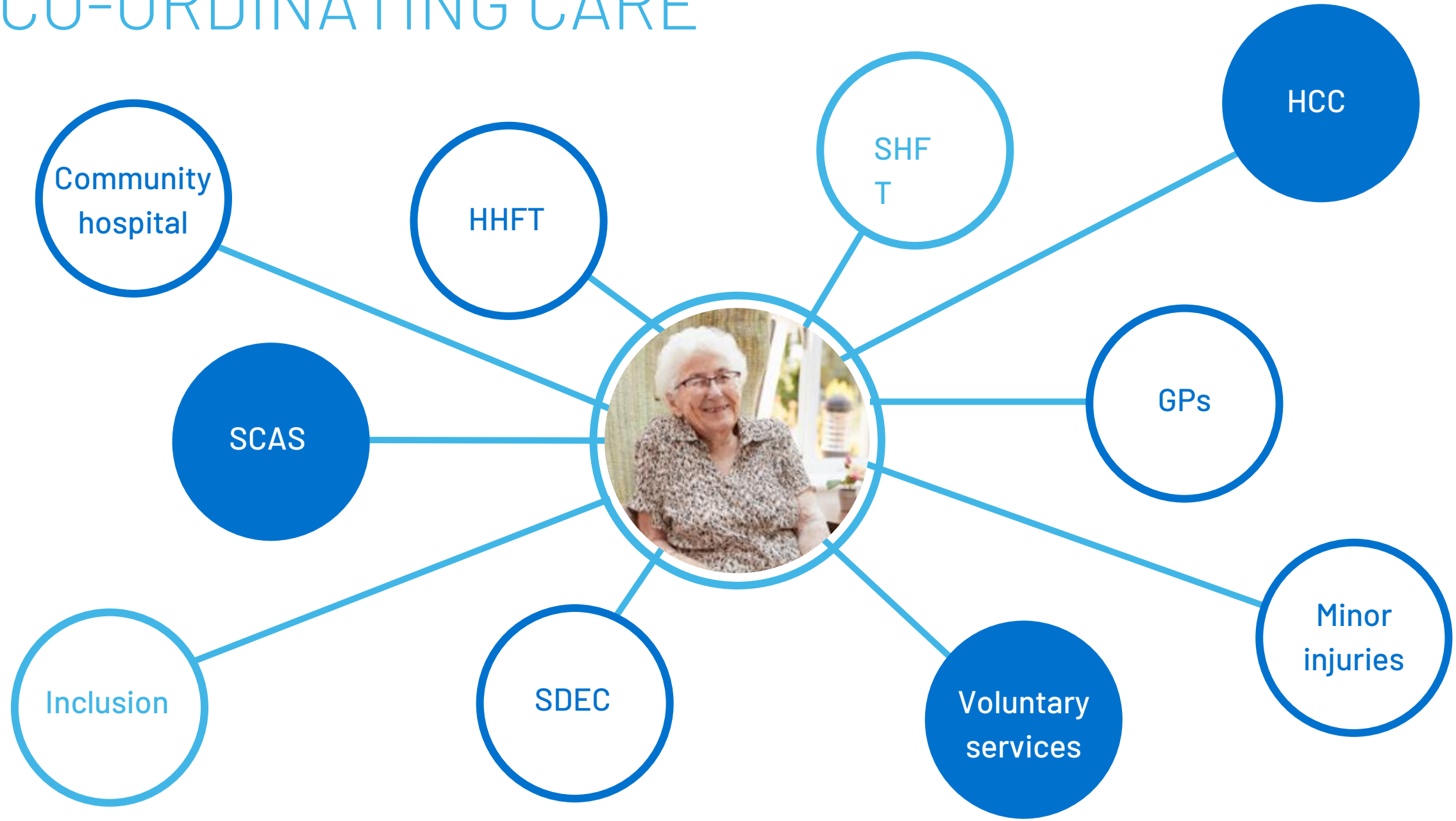
Virtual Health Hub

WHO WE ARE


Referrer
Virtual Health hub
Telemedicine for Care Homes
Clinical advice and treatment for acutely unwell care home residents
Who: Residential, nursing, learning disability care homes and SCAS
Coverage: North, Mid, south and South West Hampshire
Clinical Communication Centre
Single point of access to secondary care for urgent advice or admission
Who: GPs, community teams and SCAS
Coverage: North and Mid Hampshire
Virtual Wards
Remote monitoring to support early discharges and prevent hospital attendance / admissions
Who: GPs, SCAS, community and hospital teams
Coverage: North and Mid Hampshire

WHO WE ARE

CO-ORDINATING CARE



FEBRUARY 2023 IN NUMBERS

200 calls (86% SCAS)

53% ED alternative 106/200

All alternative pathways

Balancing measures **1** (+3 direct admissions via clinic or UCR)

15% non-acute HHFT management 29/200

23% avoided ED 46/200

Excluding direct to admission take

All patients 'direct to speciality take' have been assumed to have landed in ED – in reality this will be split ED and ward

Remained at home with additional management via GP, UCR, VW, direct speciality access advice / rapid access clinic

PATIENT FEEDBACK

“I knew that they were there if I ran into any difficulties and as soon as I did run into difficulties they responded.” Patient

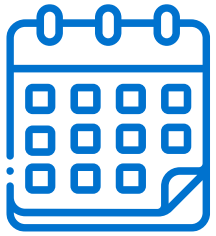
“They were very approachable… I just thought this is a fantastic idea, why didn’t we think of this before?… It just gives the carer, i.e., me, the confidence and the strength to carry on.” Carer

VIRTUAL WARDS IN NUMBERS

2134

patients have been admitted to virtual wards

Lower 30-day



mortality rate than patients not on virtual wards

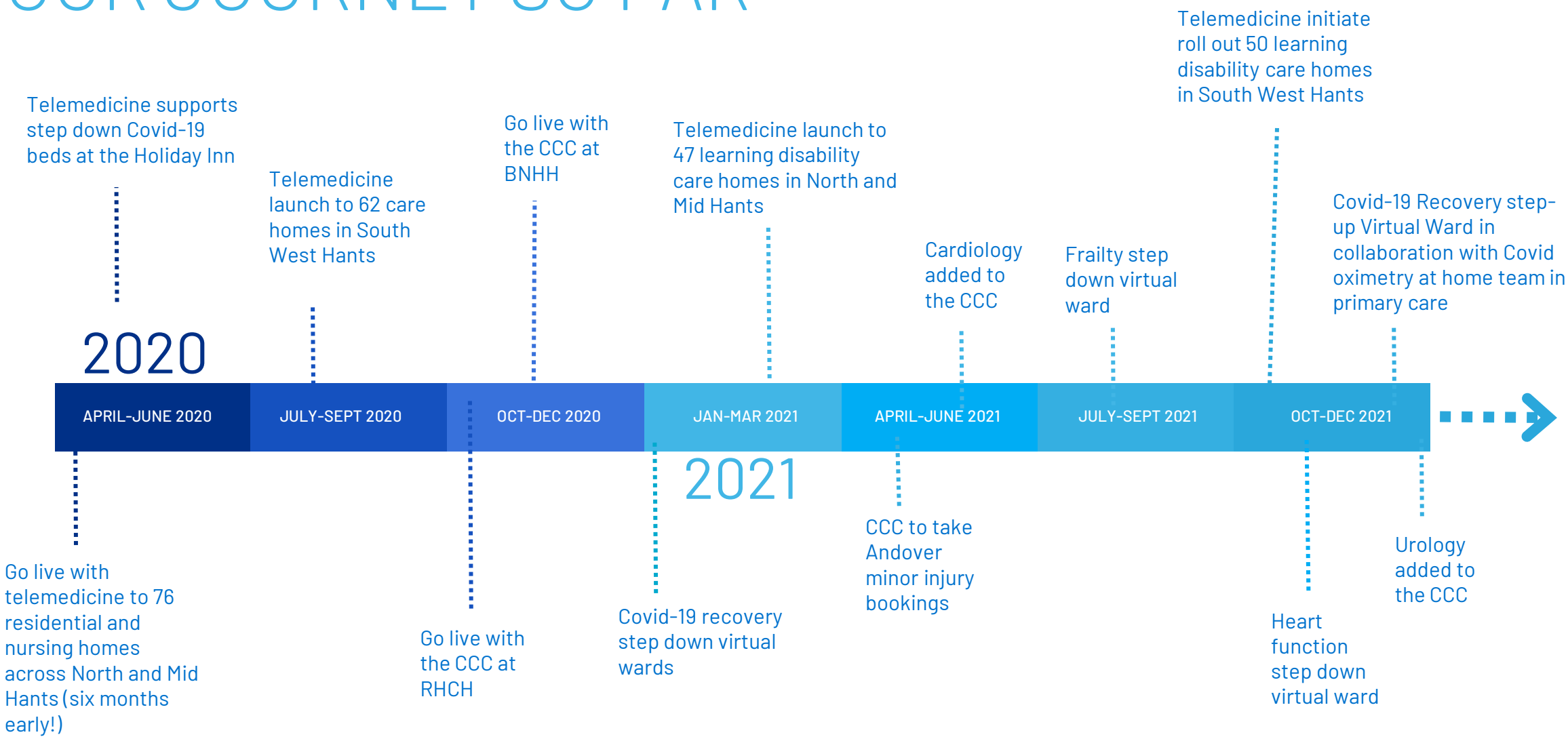
Lower

re-admission rate than patients not followed up on virtual wards

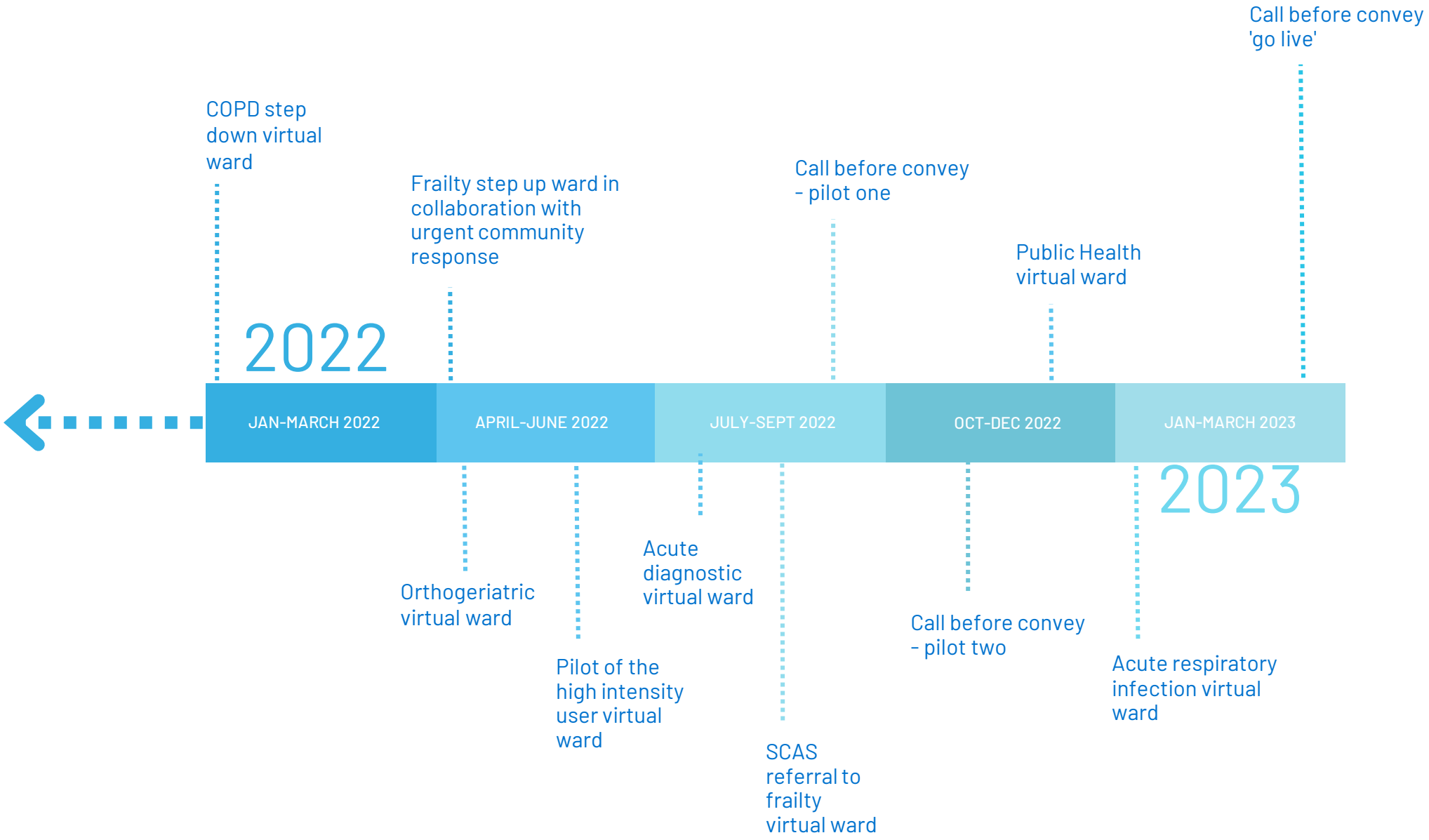
7 days

is our average length of admission

OUR JOURNEY SO FAR



OUR JOURNEY SO FAR



WHAT?

- Demarcation in life before, during and after COVID
- Process and attitude changes in interface with patients, wards and system partners
- Getting to know you – VHH meets IDT
- Education and training – pincer movement
- Shadow working and shared space

HOW?

Aim	To reduce length of stay for HHFT adult inpatients (Model hospital criteria) to 9 days by January 2024	Purpose:	To reduce delays relating to processes integral to the patients admission, to include assessment, treatment and access to the discharge support services to promote safe patient flow and discharge.				
Out of Scope	Delays and blockages to reduce patient flow and discharge from the acute adult beds of the Trust	What is patient flow:	The clinical decision re the need for diagnostics to progress and inform the treatment and therefore reduce length of stay and promote patient discharge				
In Scope	Assessment and clinical decision making and diagnostics to maintain discharge and flow	HHFT Improvement Approach	Define	Diagnose	Design	Test	Sustain

INTEGRATED DISCHARGE IMPROVEMENT PLAN

Six day, short day service	Seven day, long day service	In progress
Receiving and validating SATs	Direct SAT submission to the TOCH	Complete
Old style SAT	New style, streamlined SAT	Complete
Office based Integrated Discharge Team	Ward focused Integrated Discharge Team	In progress
Partial reporting of discharges and statistics	Twice a day full reporting, internally and externally	Not started
Partial overview of 1b and 3b pathway patients	Full oversight of 1b and 3b patients returning/ restarting care (exc CHC)	Complete
Limited information on the SAT	This is Me' style document for complex placement patients to reduce declines	In progress
No admission pack to support discharge	Full admission/ transfer pack in place as soon as patient is on the ward	In progress
Partial waiting list/ accepted patients for pathway two beds	Agreed waiting lists and pull model from Kingfisher and Alton	In progress
Limited/ ad hoc contact between wards and placements/ homes	Integrated Discharge Team liaison service between care providers and the wards	In progress
Reviewing SATs for P1,2,3 on submission - when the patient is medically optimised	Review of all P1,2,3 patients pre PDD	In progress
Partial support of confirmed and query P1,2,3 patients.	Daily patient specific tracking of all confirmed and query discharges for T and T+1 to ensure no failures or delays.	In progress
No follow up of discharged patients.	Improved liaison with placements and care agencies, contact details for post discharge support in conjunction with telehealth and the CCC.	In progress
Audit tool monitoring for SATs/ progress at SPOA	Integrated tool in EPR that enables live updating by wards and Integrated Discharge Team and power BI reporting.	In progress

Section	No.	Milestones	Owner
Integrated Discharge Team (1)	1	Redesign SAT and its submission to the SPoA	Gill Massey
	2	Restructure the CDT working practise, rolls and resposibilities	Claire Harmen
	3	Redesigns the Privacy Dignity and Respect leaflets to include information sharimg for booking transport	Gill Massey Adam Laurence
	4	Redesign the Leaving Hospital Leaflet	Claire Harmen
	5	Design and implement the discharge page on EPR	Gill Massey Andrea
	6	Pull a working document from the EPR page to provide a Trust overview of discharge data and Trust status data	Claire Harmen
	7	Design and implement Trust discharge training on Green Brain	Claire Harmen
	8	Measurement of 'Lost Bed Days' in Power BI	Gill Massey
	9	Implement a 'Pull Model' for system partners	Claire Harmen
	10	Complete the Afina Team Journey with the Complex Discharge Team new structure	Gill Massey Andrea
	11	Mangement of patient choice and the discharge policy	Gill Massey Andrea

HOW?

What we did:

- Group made up of 11 Members from across the system including HHFT, ICB, SPOA, HCC
- Pool of 170 patients with NCTR were identified.
- Detailed review on 56 patients from the cohort, summary of current situation, review of next steps, identification of where improvements can be made.

NCTR review against improvement projects
4 May 2023

What we are doing in the next 4 weeks:

- Weekly face to face partners meetings
- Understanding all roles that work towards complex discharge across the system
- Ops View implementation
- Education on the wards
- Developing 'lost bed days' dashboard
- Understanding and working through CHC pathway changes

NCTR review against improvement projects 4 May 2023

CHC pathway changes:

- Value of costs incurred across partners to mitigate
- Training for the acute teams
- Managing risk for those patients remaining in the acute
- Leaflets for patients and families
- Communications from all partners

SAT pipeline – readying patients for discharge so that when medically optimised, they have plans in place:

- RAG rated system to ensure plans that can be actioned prior to medical optimisation, do take place
- Ensuring the SPOA can see the upcoming 'pipeline' of patients that will require onward care.
- Capacity modelling

Supporting self-funding patients and families

Training and education on the wards Reinvigorating the process:

- Supporting board completion and accuracy
- Checklists for pre and post SAT submission
- Challenging medical optimisation to prevent stop/ start issues

Delirium Pathway:

- Review
- Compare to other areas
- Impact of CHC changes

Ongoing opportunities for Virtual Wards to support with early discharge

Demonstrating risk:

- Datix for fall
- Cost of additional staff to support complex needs

Communications within HHFT and to/from the acute:

- Check in/ out vis the IDT hub
- Calls from providers and partners via the IDT hub to ensure consistent approach

Escalation pathways, trigger points for delays:

- Looking at LoS since SAT submitted, not LoS for total stay
- Clear escalation routes and meetings to highlight
- Triggers for unreasonable mount of time/ blocks that cannot be mitigated

Understanding why SATs are declined:

- Changing the form that goes to placements
- Understanding the reasons for decline
- Talking to the managers of care providers before they leave

Berkshire

Data quality:

- Providing professional challenge
- Ensuring consent
- Quality of information
- EPR reflecting the SAT

Therapy input for the SPOA

Integrated discharge team resource changes:

- 7 day working
- Case worker approach for patients with complex needs/ ongoing health needs
- Pathway specialists

Meeting structures and timings:

- SPOA calls
- Leadership calls
- Top 10 LoS meeting
- Joint working space

7 day working:

- Direct SAT referral
- Resource plan to support 7 over weekends to maintain discharge flow

Quarterly events to review and update projects

THANK YOU

Any questions?

Speaking Now…

Tony Latham
Matron - **Guys and St Thomas'**

Mr Gerry Burke
@Home Service Lead - **Guy's and St Thomas' NHS Foundation Trust**

London Remote Monitoring and Virtual Wards

Virtual Wards Conference 11th July 2023

Francesca Markland
Senior Programme Manager
Remote Monitoring and Virtual Wards

London
Digital Team
england.londondigitalteam@nhs.net

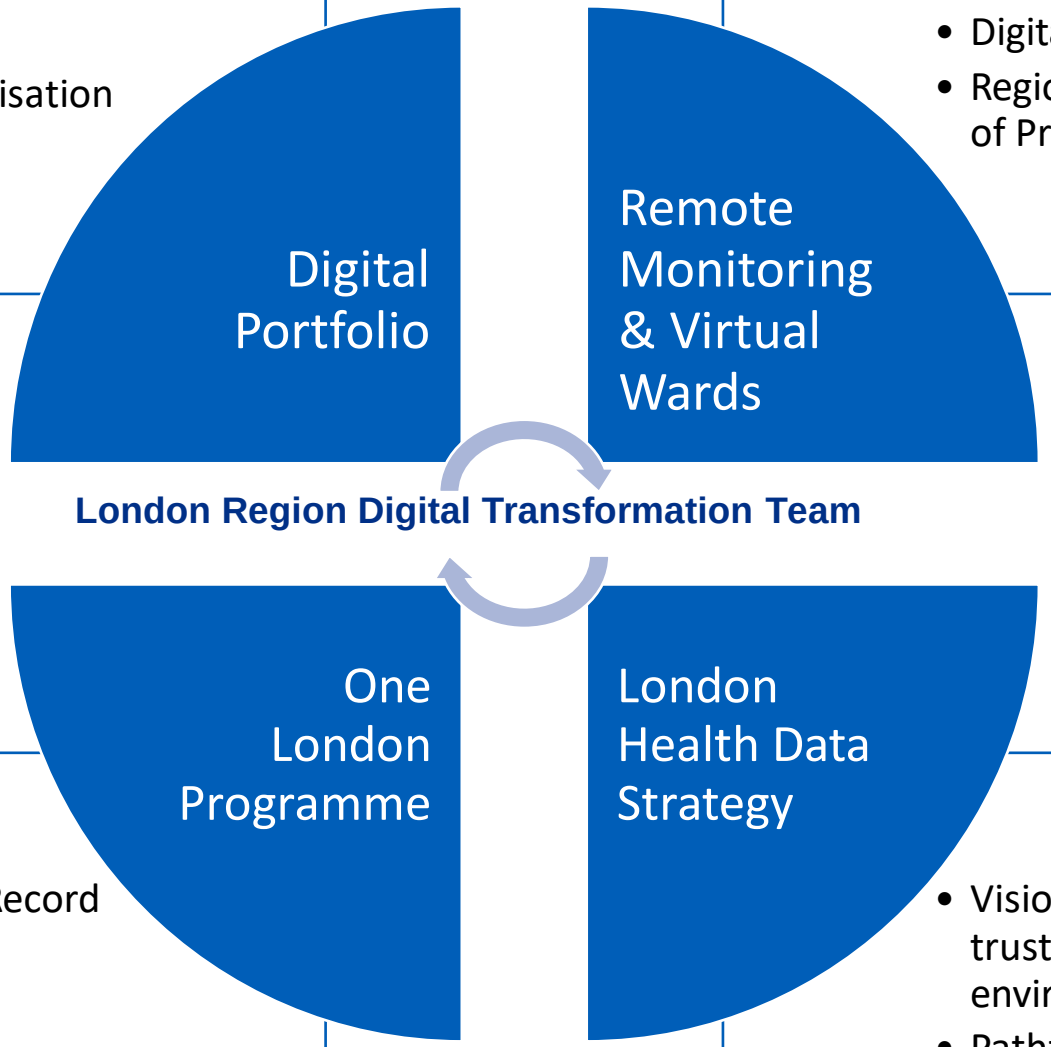
Dr Joe Barker PhD
Project Manager
Digital Transformation
Health Innovation Network

What is the London Digital Transformation Team?

NHS England London Region

- Digital First
- Digital Social Care
- Community
- Frontline Digitisation
- Mental Health
- UEC/111

- Clinical Technology Steering Group
- Digital RM/VW Lead
- Regional Community of Practice



Luke Readman is the London Region Director of Digital Transformation

Stephanie Boafor is the London Digital Lead, and **Francesca Markland** is the Senior Programme Manager for Remote Monitoring and Virtual Wards.

- London Care Record
- London Data Services
- Urgent Care Plan

- Vision to create a trusted health data environment
- Pathfinders programme

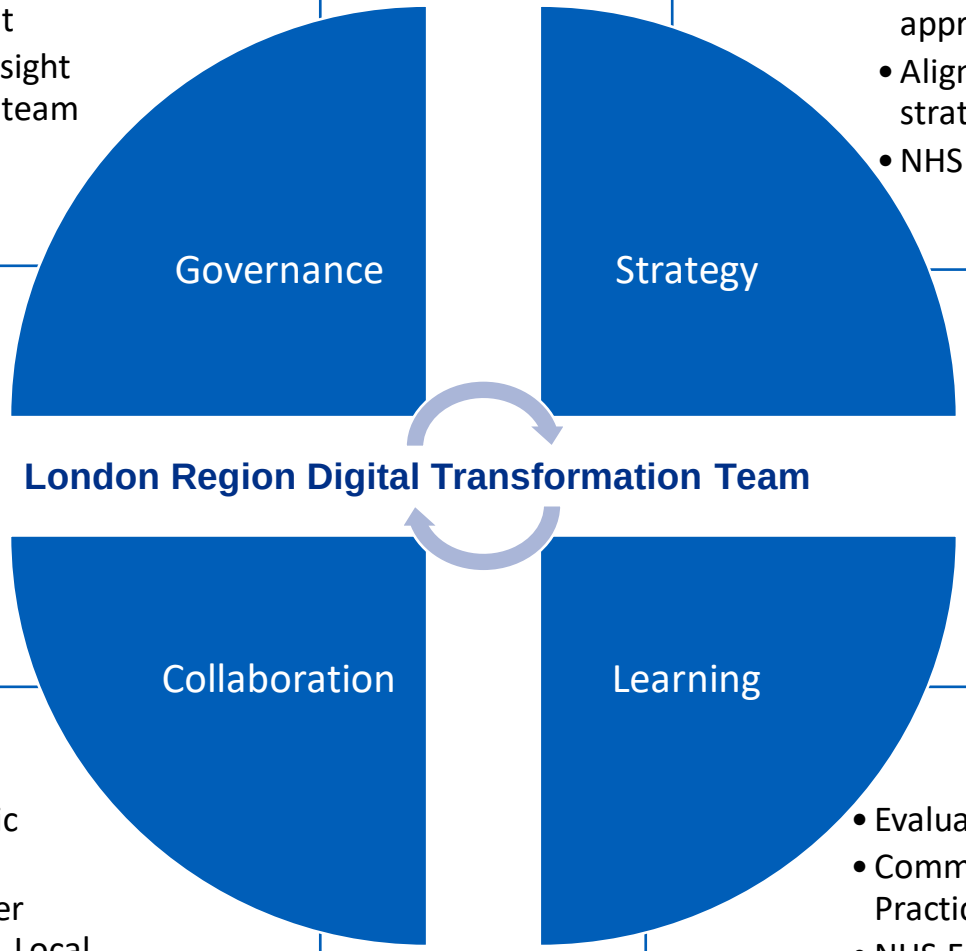
How does the London Region Digital Transformation Team support with remote monitoring and virtual wards?

NHS England London Region

- Regional Groups & Boards
- Risk management
- Programme oversight with Clinical VW team

- OneLondon vision
- Pan-London strategic approaches
- Alignment with national strategies
- NHS Greener Agenda

Risks, issues and challenges are brought to the Clinical Technology Group.



Regional partnership working with ICBs and AHSNs, facilitates sharing and learning across London

- Patient and public engagement
- Wider stakeholder relationships e.g. Local Authorities
- Communications

- Evaluations
- Communities of Practice
- NHS Futures site
- AHSN partnerships

What did London learn from the Regional Scaling Programme?

NHS England London Region

Regional Scaling Programme

- **London delivered to 90,604 patients** from Nov 2020 to Jan 2023.
- **Tech-enabled virtual ward projects were rolled out in NWL and SWL** implementing remote monitoring hubs to support multiple pathways
- Care Sector projects to **Care Homes** including LD homes
- **Long-term condition management** including primary care hubs
- **Digital annual physical health checks** to support people living with severe mental illness

Key Learnings

- **Considerable variance** in remote monitoring systems deployed in London
- **Interoperability** emerged as a key issue early on
- **More evidence needs to be generated** to support remote monitoring use cases
- **Patient acceptance of remote monitoring was good**; device usability and training was an important factor in this
- **Digital transformation resources are key** to successful implementation and embedding of remote monitoring

Key ICB Feedback

- **Solutions must integrate easily with existing EPR** (Trust, community & primary care)
- The need for **significant customisation requires additional resourcing** (staff and time) and can be a significant risk to implementation
- **Supplier relationships are key to the success** (or not) of a programme; sharing soft intelligence can help inform decisions
- Procurement was impacted by quick turnaround expectations and **supplier evidence limitations**

Regional Scaling Programme

NHS England London Region

Programme

Delivery to over 90K patients

- Care Sector LTC/VWs Mental Health
- 12 Remote Monitoring suppliers
- 9 clinical pathways and conditions

Benefits

Benefits coaching programme

- ICS Benefits registers and logic maps
- Individual ICS AHSN evaluations

Evaluation

Care Homes report
VWs and LTC report

- Pan-London Reports summarising local evaluations

NHSE London
Remote Monitoring and Virtual Wards

@HINSouthLondon
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healthinnovationnetwork.com

Summary of report by the Health Innovation Network for NHS England (London Region) Digital Transformation

Health Innovation Network South London

NHS England London Region

The Health Innovation Network

Speeding up the best in health and care, together

The HIN is the Academic Health Science Network for south London, hosted by Guy's & St Thomas' NHS Foundation Trust.

Working closely with our partners, we deliver a wide range of projects and programmes aligned to our strategic priorities:

- Ensuring south London benefits from national innovation priorities which address health inequalities
- Supporting innovators and the health and care workforce to achieve faster adoption of innovations and drive economic growth
- Delivering health and care change programmes, with a focus on long-term conditions and mental health
- Evaluating the effectiveness of innovations in real-world settings and generating evidence to identify which innovations should be adopted in health and care
- Building a sustainable, resilient, diverse and joyful organisation

Innovator support and industry partnerships

Innovation selection and implementation support

Health and care programmes

Capability and community building

Evaluation & Implementation Science

Why Virtual Wards and remote monitoring?

Capabilities of remote monitoring technology

Clinician-facing features

- Monitoring
- Sorting patients
- Dashboard features
- Configuring alerts

Patient-facing features

- Clinician-patient interaction
- Patient notifications
- Patient journey support & education

Additional & advanced features

- Hardware agnostic
- Behavioural and environmental monitoring
- Fully customisable protocols & pathways
- Extensive device integration

NHS England – London Region and the Health Innovation Network's Virtual wards/remote monitoring technologies work programme

Review of the remote monitoring market and technology adoption in London

Technical specification for procuring virtual ward technologies

Research into **partnership working** to accelerate the remote monitoring market

Getting the right **data** in the right place at the right time to deliver care and evaluate services

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The landscape in London

KEY

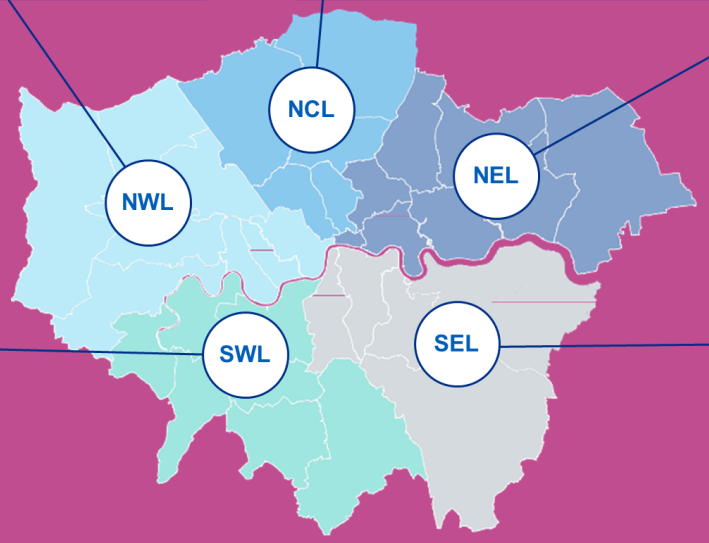
- Virtual Ward
- Long Term Condition Management
- Care Homes
- Mental Health

Additional information in bold
Suppliers in italics

Acute sector, COVID; *Huma*
Early Supported Discharge; *CurrentHealth*
Frailty; *Inhealthcare*
Diabetes; *Huma and Inhealthcare*
COPD, Heart Failure; *Luscii*
Annual Physical Health Check (APHC); *Inhealthcare* (Planned; not yet live)

COVID; *Huma*
Frailty; *Whzan*
COPD; *Mymhealth*
Diabetes; *Mymhealth*
APHC; *PKB Abbot/Whzan*
ECG; *Kardiamobile*

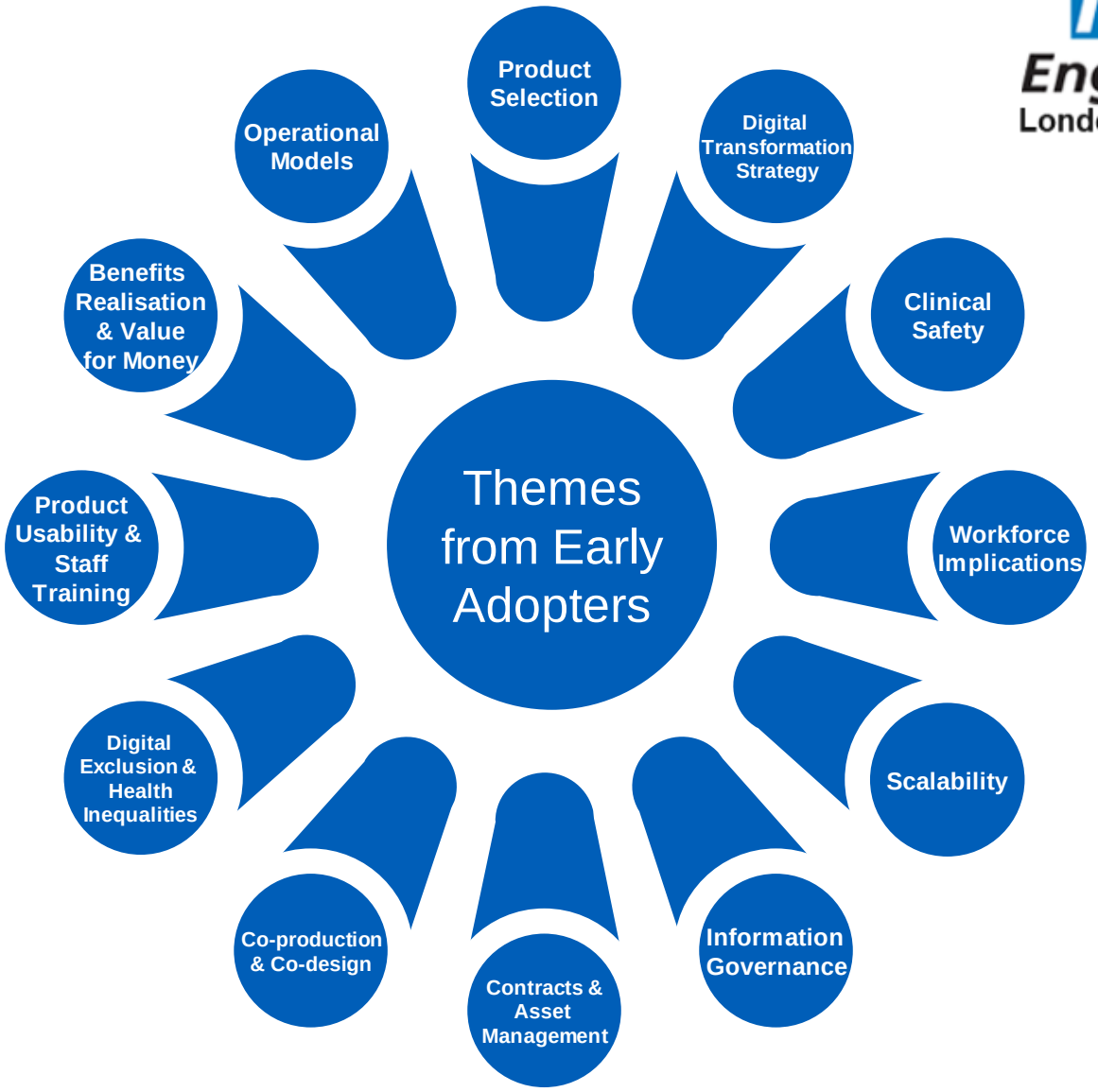
COVID; *OneContact*
Frailty; *Feebris & Inhealthcare*
Check ups; *OneContact*
ECG; *Kardiamobile*
APHC; *PKB Abbot, Whzan*



Central SWL hub; *CurrentHealth* (Planned; not yet live)
COVID, Frailty, LTC; *Vcare*
Frailty; *Whzan*
Frailty; *Vcare*
Diabetes; *You & Type 2*
Croydon; *CurrentHealth*
Sutton; *Vcare*
APHC; *Whzan* (Planned; not yet live)
ECG; *Kardiamobile* (Planned; not yet live)

COVID; *Doctaly*
Frailty; *Docobo & Doctaly*
Diabetes; Docobo
Ashthma, COPD, Diabetes, Hypertension; *Doctaly*

Lessons learned



Examples of lessons learned

Product Selection

- Map local pathways
- Produce a detailed specification
- Engage with existing users

Usability and Training

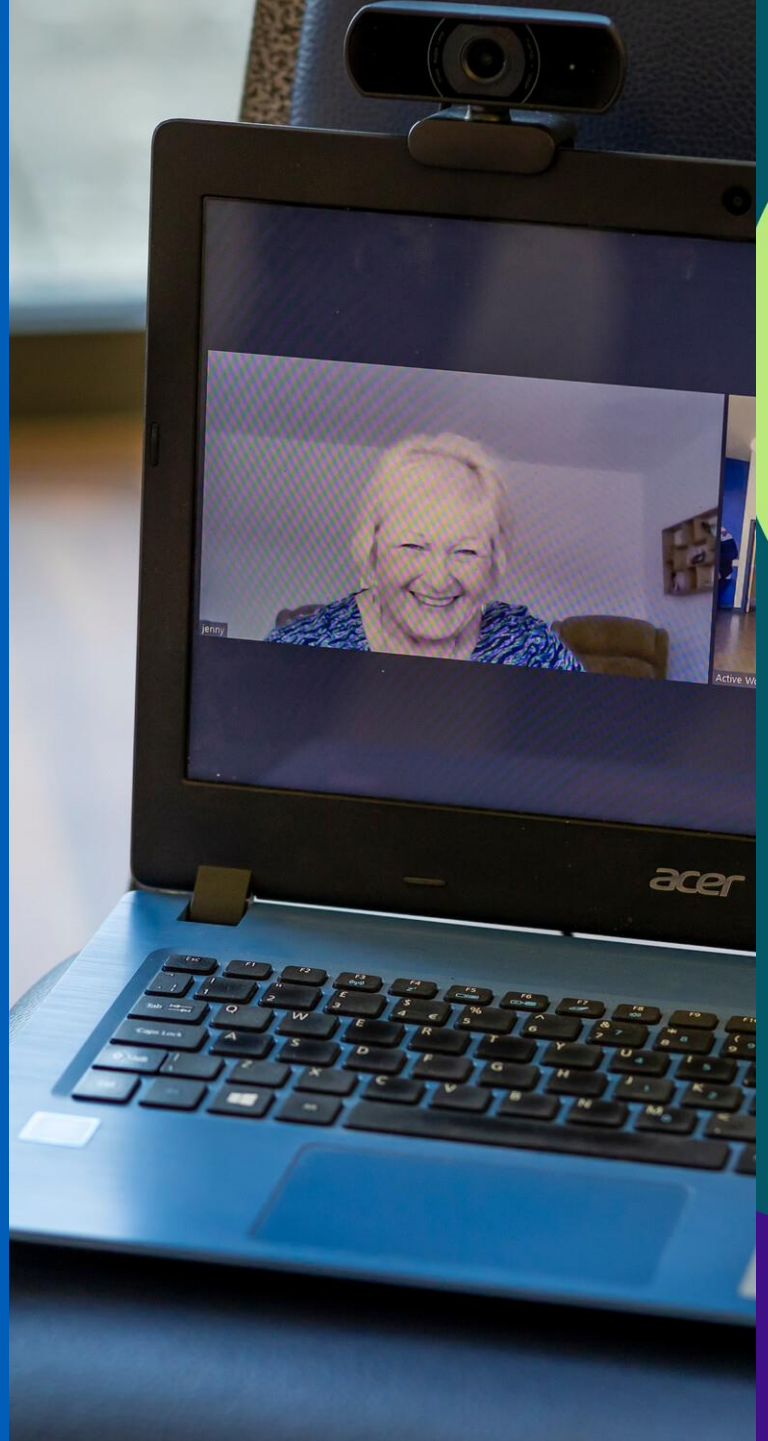
- Ease of use is foundation for success
- Engage with leaders to manage change
- Provide training through a variety of delivery methods

Contract Negotiation

- Agree a collaboration approach
- Define integration timeframes
- Consider the implications of contract length

Market review

- Overview of the Market
- Maturity, trends, and trajectory
- Acuity of disease and remote monitoring use cases
- Conformity with standards
- Interoperability
- Medical device integration
- Indicative costs and contracts

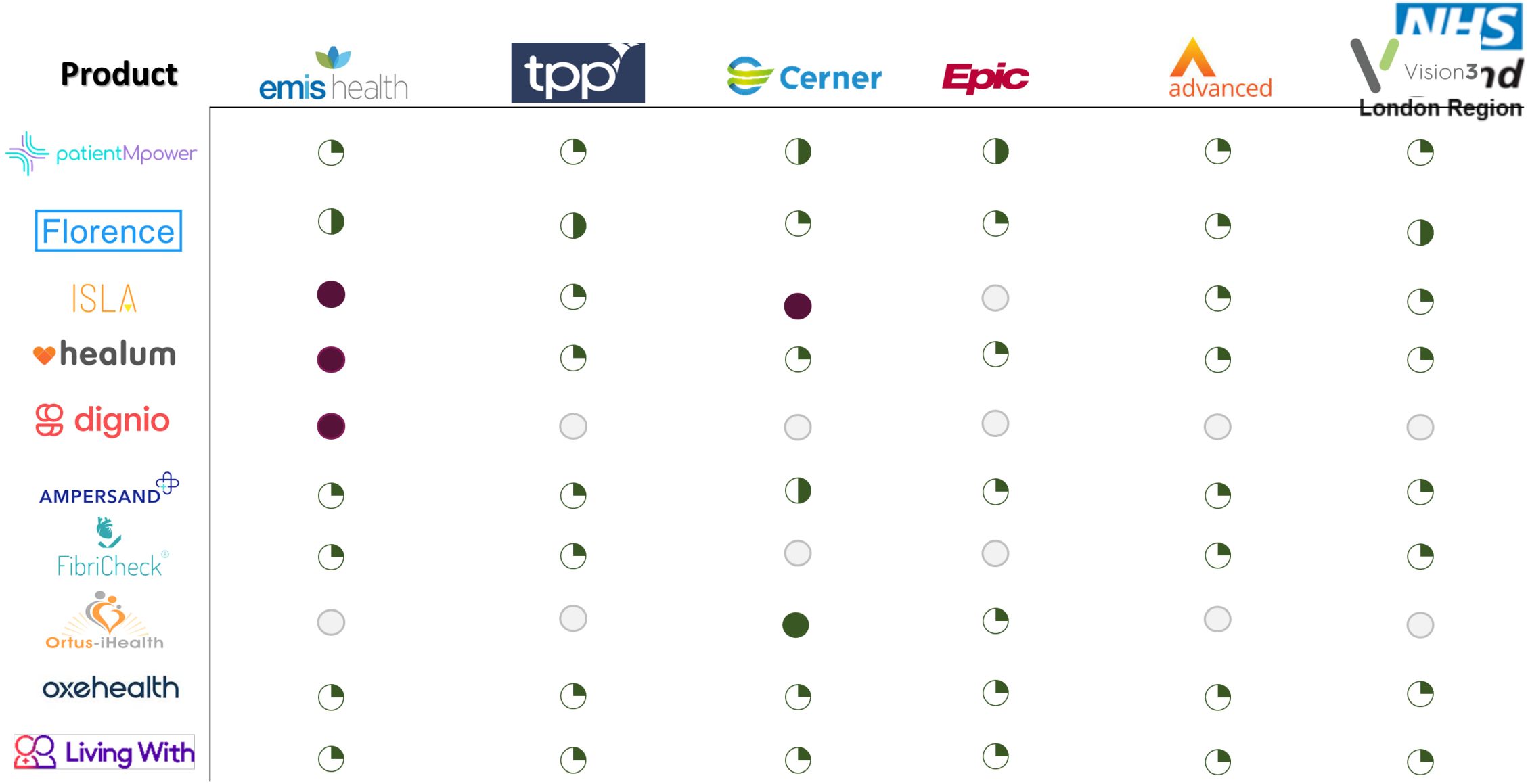


Interoperability Overview

Product	emis health	tpp	Cerner	Epic	advanced	NHS Vision3 London Region
accuRx.	●	◑	◔	○	○	◑
current health	◔	◔	◔	◑	◔	◔
inhealthcare	●	●	●	●	◔	◔
HUMA	◔	◔	◔	◔	◔	◔
Care	●	◔	◔	◔	◔	◔
whzan DIGITAL HEALTH	◑	◑	◔	◔	◔	◔
doctaly ASSIST	●	◔	◔	◔	○	◔
Docobo towards a better quality of life	◔	◔	◑	○	◔	◔
my mhealth	◔	◔	◔	◔	◔	◔
OneContact	●	○	◔	○	○	○
feebris	◔	◔	◔	◔	◔	◔

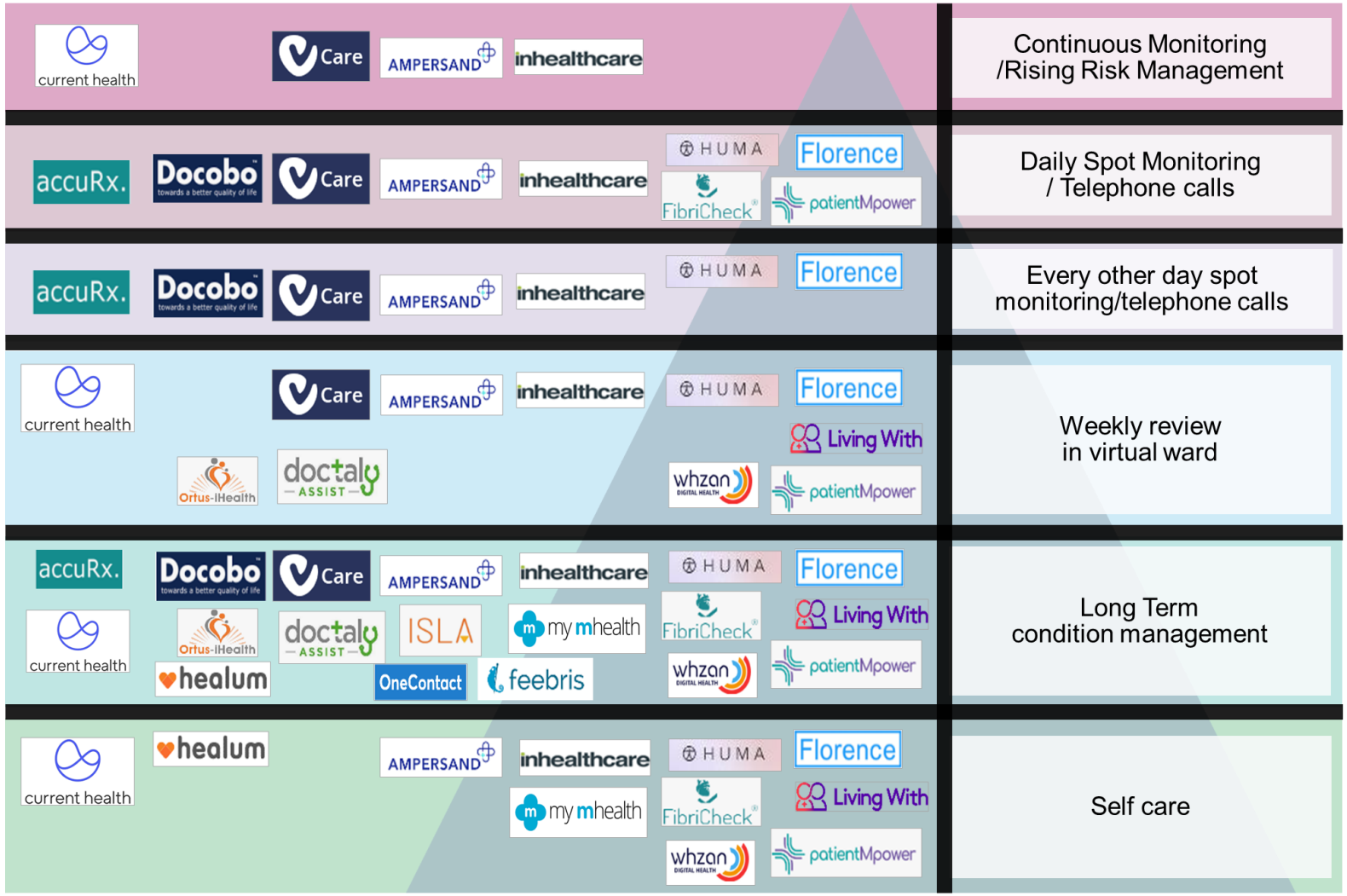
● Direct Interoperability ◑ Partially Interoperable ◔ No Current Interoperability (In progress/Technical readiness evidenced/No current plans) ○ No Data

Interoperability Overview



Direct Interoperability | Partially Interoperable | No Current Interoperability (In progress/Technical readiness evidenced/No current plans) | No Data

Product offerings across the acuity pyramid



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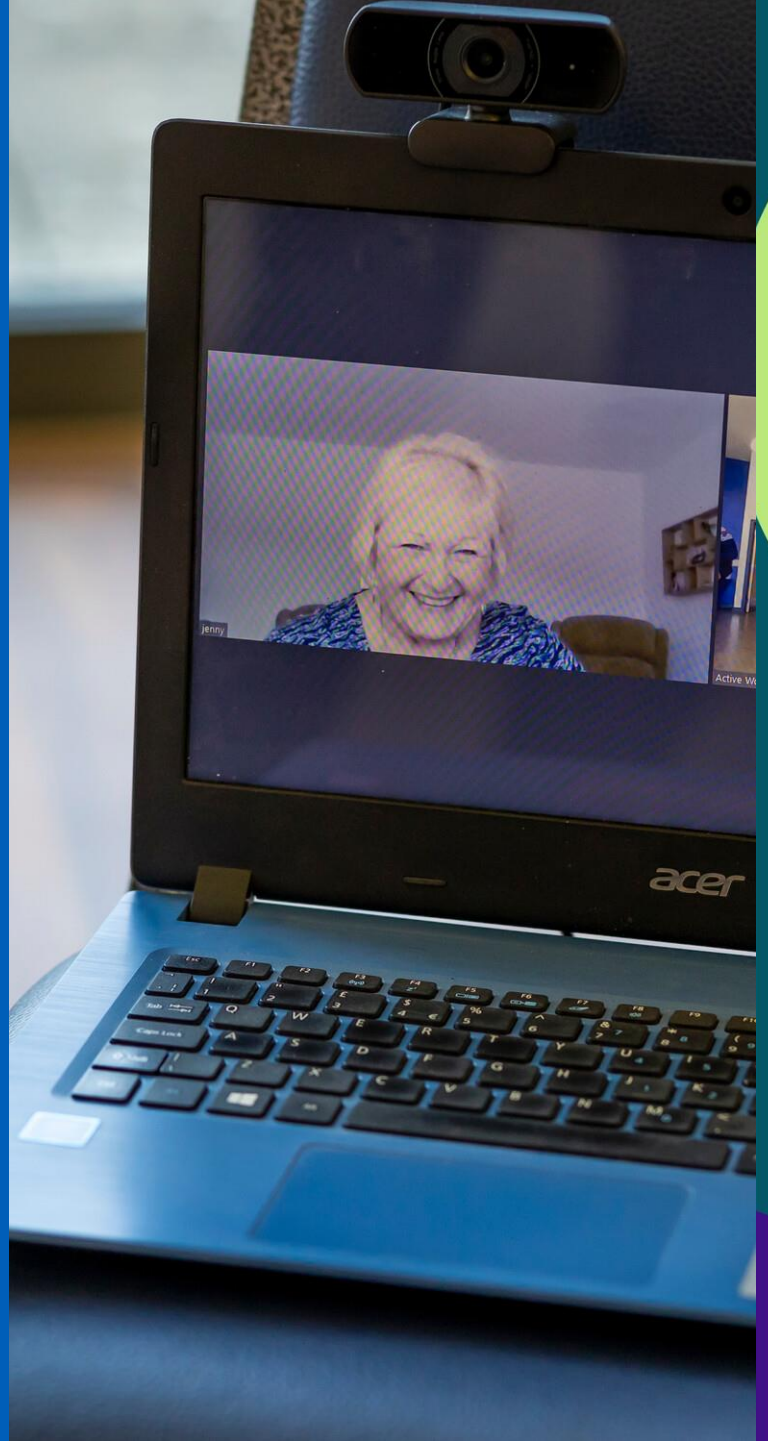
Technical Specification Contents



Example of Technical Specification (functional requirements)

#	Theme	Details	Guidance	MoSCoW
		Patient Flow		
2.1.1	**Registering patients using PDS/NHS number**	The ability to securely select and register patients using the NHS Digital Personal Demographics Service (PDS) lookup capability to guarantee effective use of the NHS Number. Any patients without an NHS Number should be traced by registering a minimal set of demographic data. This should be done to avoid the Shared Care Record having to utilise the PDS. Registration updates should take place in near real-time and not in batches.	DTAC (C4.2)	M
2.1.2	**Confirm identity without email address**	The ability to confirm identity of users without depending on the user's email address.		M
2.1.3	**Capturing pathway data (referral/consent/triage)**	The ability to capture full end-to-end pathway data for referral, consent, triage, etc.		M
2.1.4	**Inbound HL7 feeds (for registration & integration)**	The ability to support inbound HL7 feeds from multiple services to enable patient registration and integration between referring organisations.		S
2.1.5	**Easy to set up**	The ability for the devices to be easy to set up with simple instructions.	NCL	M
		Roles and Access		
2.2.1	**No separate login for professional users**	The ability for professional users to launch the remote monitoring platform without the need for a separate log in to the local system when searching for an individual patient, ideally using smartcards to access where possible. There should also be no need for a separate login when searching for other patients once the system has launched.	NWL	M
2.2.2	**Single patient login**	Patients should only have to log in through a single portal, ideally through integration with NHS Login, either directly or through a third-party intermediary, Patients Know Best, to allow patients to provide NHS Login verified digital proof of identity to access their account and health record	NWL	M
2.2.3	**Multiple clinicians & organisations to view/add/edit**	The ability for multiple clinicians working across multiple organisations to view, add to or edit information within the remote monitoring platform.	NWL, NEL	M

Principles for using the technical specification

1: Pathways

2: User Experience

2a: User Experience: Patients

2b: User Experience: Staff

3: Interoperability

4: Resourcing & Strategy

5: Information Governance & Standards

6: Safety

7: Convergence

8: Collaboration

9: Health Inequity

10: Learning and Knowledge Sharing

Principles: Example

1: Pathways

For some early adopters, RM pathways became limited by the technical functionality when patient and clinician needs were not clearly mapped. During procurement, local clinical pathways and digital needs should be defined so that requirements can be clearly articulated for suppliers. ***Clinical leadership should support the procurement process early on through clearly defined governance structures and working groups. Given the relatively immature and emergent nature of many pathways, it is important that specifications require agile ways of working, evidence of supplier responsiveness, the ability to modify the RM solution based on system needs and the flexibility to reconfigure the solution as the pathways evolve***. Suppliers have increasingly recognised the importance for clinicians to have control over parameters at patient and pathway levels, and the market is moving towards increasingly flexible solutions.

Key specification sections: Flexible Implementation (#2.3); Service Requirements (#4.2).

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Why (and when) to seek developmental partnerships

A need for supported care outside the clinical environment

Pathways are evolving

The market is growing

High level recommendations

Market-shaping

Transition from a reactive approach to the market to a proactive strategy that provides direction

Developmental partnerships

Facilitate a continuous dialogue with industry that incorporates cross-functional perspectives

Cross-functional capability

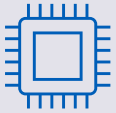
Build partnership capability and capacity across functions

"A partnership is not something that you enter into 'on a first date.' You must have a level of courting, a period of time to get that trust on both sides before you commit"

Procurement Director
Central Government Department

How to build developmental partnerships

Invest in pre-procurement market engagement



Utilise existing 'developmental' procurement mechanisms

Procure a relationship, not just the tech

Key Recommendations

1. Set up for success	2. Invest in pre-procurement market engagement	3. Use existing procurement mechanisms	4. Procure a relationship
Be guided by users, ensuring patient and clinician involvement from the outset	Invest time and resource in pre-procurement market engagement	Remain open to evolving platforms and new functionality	Prioritise cultural fit, agility and relationship building
Form a multi-disciplinary team that can advise on people, process and product	Co-define the challenge, goals and terms of the intended partnership	Divide the activities for the supplier(s) into work packages along a roadmap linked to milestone payments	Develop and refine criteria through pre-procurement market engagement
Bring in specialist procurement expertise and validate the intended approach with external experts	Initiate a dialogue on the risks and rewards for the NHS and industry	Link pilots to procurement	Include criteria in tender documents to evaluate cultural fit and agility
Build commercial understanding in operational and clinical teams	Bring suppliers together to explore the potential of supplier collaboration through a single partner	Gather outcomes data to prepare for future value-based procurement	Include expected ways of working and measures to track this within contracts
Define the challenge and articulate the desired outcome	Seek collaboration across the NHS to achieve efficiency in procurement and risk sharing	Consider the partnership implications of various pricing models	
Define what is fixed and what is flexible	Test integration and user experience		
	Define and communicate needs around standards and integration		

Working in partnership to accelerate the remote monitoring technologies market

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Data on Virtual Wards: Findings so far

Evaluation focus

The data focus around the country is on establishing the data items needed for evaluating Virtual Wards to support business cases for 24/25

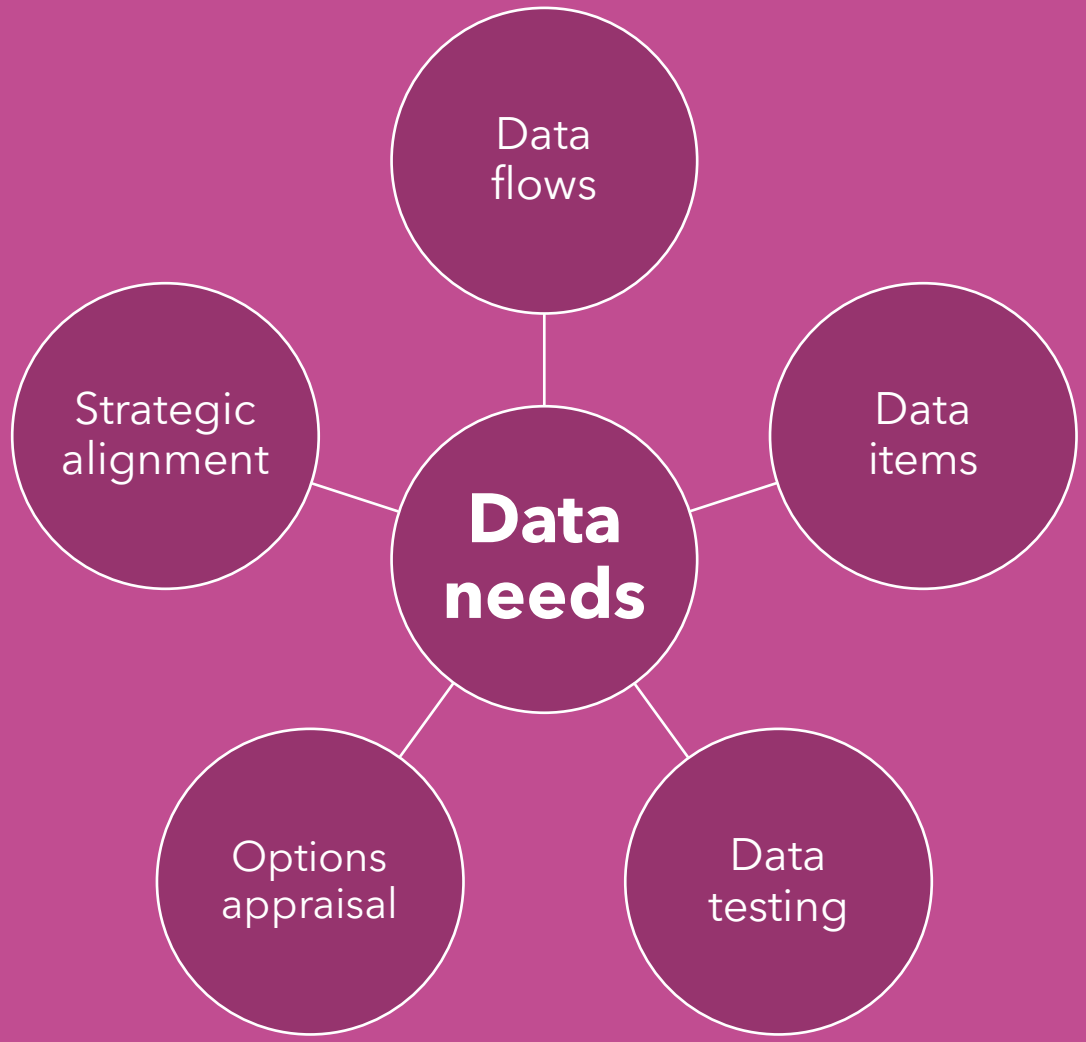
Interoperability complexity

Significant effort invested in understanding VW interoperability nationally has yet to establish an optimal approach

Significant variation

Variation in data needs due to variation in models, scale, infrastructure, integration and stakeholder interests.

Report themes



Next stage: building consensus around key data items to realise the benefits of Virtual Wards

DATA FOR DELIVERY AND EVALUATION

DATA TO DRIVE BUSINESS CASES

DATA ON PATIENT EXPERIENCE AND INEQUALITIES

Resources

remote monitoring resources from the NHSE London Digital team and the Health Innovation Network:

- Read the full report on building partnerships with the remote monitoring industry here
- Remote Monitoring Developmental Partnerships – Expert Roundtable Report
- Review of the Remote Monitoring Market and Technology Adoption – Report
- Guide Virtual Ward Specification for London – link (considerations document available here)

Keeping in touch

Please contact the HIN or NHSE London Digital teams for further information:

hin.technology@nhs.net

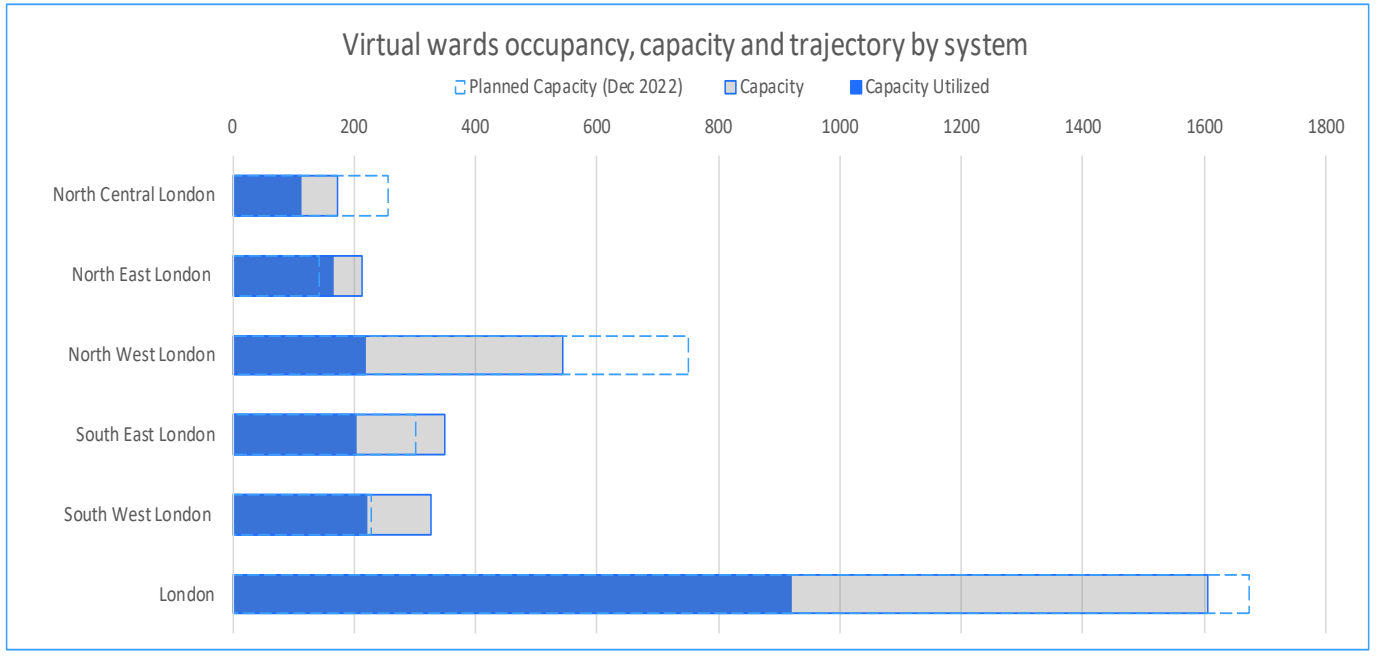
england.londondigitalteam@nhs.net

Virtual Wards: Snapshot of Activity in London

NHS England London Region

Submission as of the 16th of June 2023

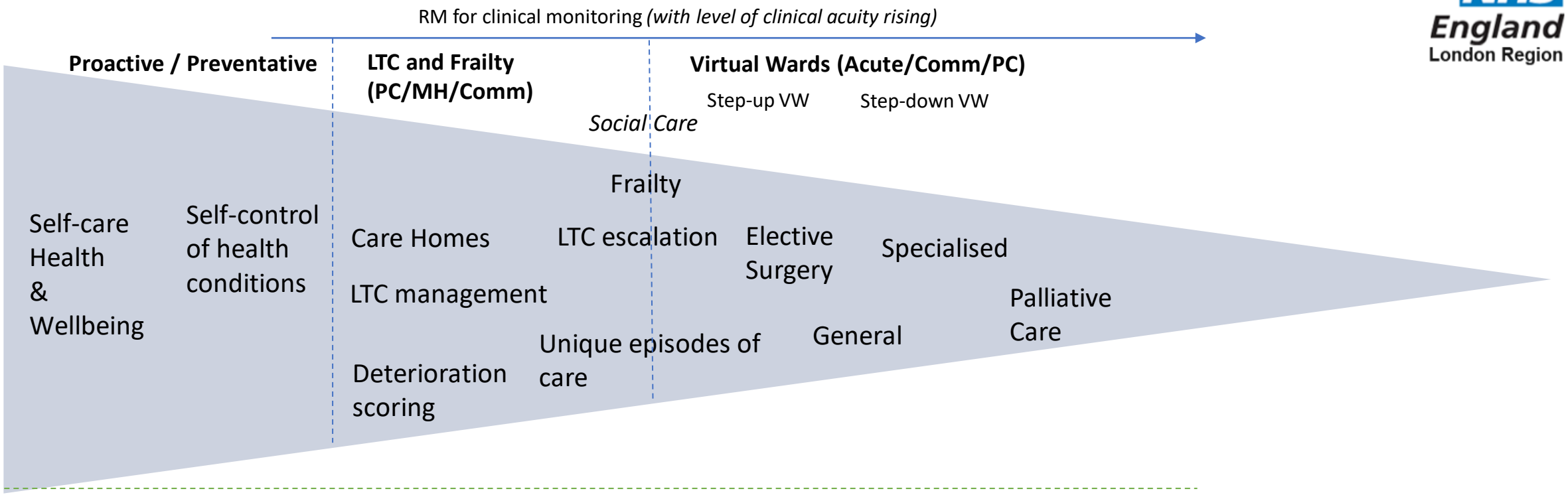
System	Planned Capacity (Dec 2022)	Capacity	Capacity Utilized	Capacity Utilized (%)	Tech Enabled (%)
National	8265	9001	5407	60%	29%
London	1675	1605	919	57%	43%
North Central London	255	173	113	65%	17%
North East London	141	212	166	78%	0%
North West London	750	543	218	40%	85%
South East London	301	350	202	58%	20%
South West London	228	327	220	67%	70%



- **London has 43% of Patients using Tech Enabled Services, with the national average at 29%.**
- Capacity utilized in London is currently at 57%.
- Current capacity is at 96% of the planned capacity for Dec 2022.

Remote Monitoring: Continuum of Care and Data Use

NHS England London Region



RM interface(s) e.g. wearable, app, POCT device, sensors and passive monitoring equipment etc

Currently multiple RM interfaces with likely duplication and inconsistent patient and clinician user experience

Opportunity for single system solution* for consistent patient and clinician user experience

RM data → *Local EPRs / HIEs / SNSDE*

- Social Care
- Primary Care
- Secondary Care
- Community / Mental Health / Third Sector Specialist Care
- NHSE national, regional and ICS bodies; Public Health; Local Authorities; Other Public Sector data use cases

Care providers and data use case owners

(Data is also needed by R&D and Industry to continue the development of remote monitoring technologies.)

** Such a solution would need to be able to act as a gateway to multiple 3rd party solutions and services, and share data in a secure and standardised way, avoiding duplication whilst retaining data quality and integrity.*

Virtual Wards: Future Aspirations and

NHS England London Region

- **Procurements:** Further engagement to **support ICBs with technology procurements** and developmental partnerships with Industry
- **Evaluation and Benefits:** Regional evaluation work; defining, identifying and mapping for **benefits realisation** of digital transformation
- **Patient/Public Engagement:** Work with a range of patients and carers to ensure delivery is seen through the lens of the patient, and **put into practice co-design principles**
- **Data:** Standardisation; defining regional minimum data set; **interoperability challenges**; data sharing solutions; alignment with regional/national data strategies
- **Technology:** **Scaling and embedding of technology** for VWs (RM and POCT) with BAU funding
- **Digital Inclusion:** Evidence gathering and sharing for **digital inclusion initiatives**, benefits/exclusion disbenefits
- **Governance:** Review and consider where **wider stakeholder involvement** could be needed (e.g. Local Authorities)
- **Communications:** System and patient facing positive messaging about clinical safety and patient experience to **build clinician and patient confidence**

Q&A Panel

Thank you for attending The NHS Virtual Wards Conference North 2023!

CONVENZIS

Register for the next Virtual Wards Conference in November 2023….