



# WELCOME TO

## The NHS Patient Flow Conference 2022



Check Out Our  
Agenda Here...



Wednesday 6<sup>th</sup> July 2022- 08:00am – 15:30pm – Hatfield's Conference Centre  
Conference hosted by Convenzis Group Limited

A background image showing several hands of different skin tones cupping dark soil and small green seedlings, symbolizing environmental care and growth.

# Our Commitment to the Planet

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



**PLAY IT GREEN**



# Slido

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



Wednesday 6<sup>th</sup> July 2022- 2022- 08:00am – 15:30pm – Hatfield's Conference Centre  
Conference hosted by Convenzis Group Limited



## The NHS Patient Flow Conference 2022



# Event Chair – Opening Address



Douglas  
Hamandishe

“Alcidion Clinical Consultant  
and Broadcaster – Centric  
Health Media”





## The NHS Patient Flow Conference 2022



# SPEAKING NOW



Jenny Keane

Director for Hospital Discharge & Community Rehabilitation –  
NHS England

I will be  
discussing...

“Putting Patients at the centre of community services: how do we transform community services to support more people to stay well & independent at home?”

# Patient flow

Jenny Keane, Director  
Hospital Discharge and Rehabilitation  
NHS England





# Patient flow


Jenny Keane, Director  
Hospital Discharge and Rehabilitation  
NHS England





Tonight, across England, over 10,000 people will spend the night in an acute hospital who should be sleeping in their own bed at home, or in other more appropriate bed-based settings in the community



A photograph of an elderly man with white hair lying in a hospital bed. He is wearing a white hospital gown with a small brown polka-dot pattern. A clear nasal cannula is taped to his nose, and a pulse oximeter is attached to his left index finger. He is looking off-camera to the right with a thoughtful expression. The background is a blurred hospital room.

The majority of these people are still in hospital due to a delay in accessing post-discharge services in the community; this is ultimately down to a lack of capacity in both health and social care ‘step-down’ or ‘intermediate care’ services



Enable more people to recover  
and rehabilitate in community services  
and in their normal place of residence

#supportpeopletolivetheirbestlives



# Our ambitions

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Support more people to stay well and independent at home, wherever they call home, so that they can live their best lives.

When people do need be treated in hospital, community health services are crucial to supporting timely discharge, enabling people to recover at home. For those people who need ongoing care and support in the community, this assessment should be done at the place they call home, including care homes.

Funding for people's care arranged by the NHS is provided through NHS Continuing Healthcare. Local health and care systems also have access to funding through the Better Care Fund, bringing health and social care budgets together.

We are working with local systems to develop new models of care, including the expansion of virtual wards, urgent community response, anticipatory care and enhanced health in care homes



## Community capacity & capability

Legislation &  
Policy

Investment

Integration

Transformation

Identity

Societal  
Change

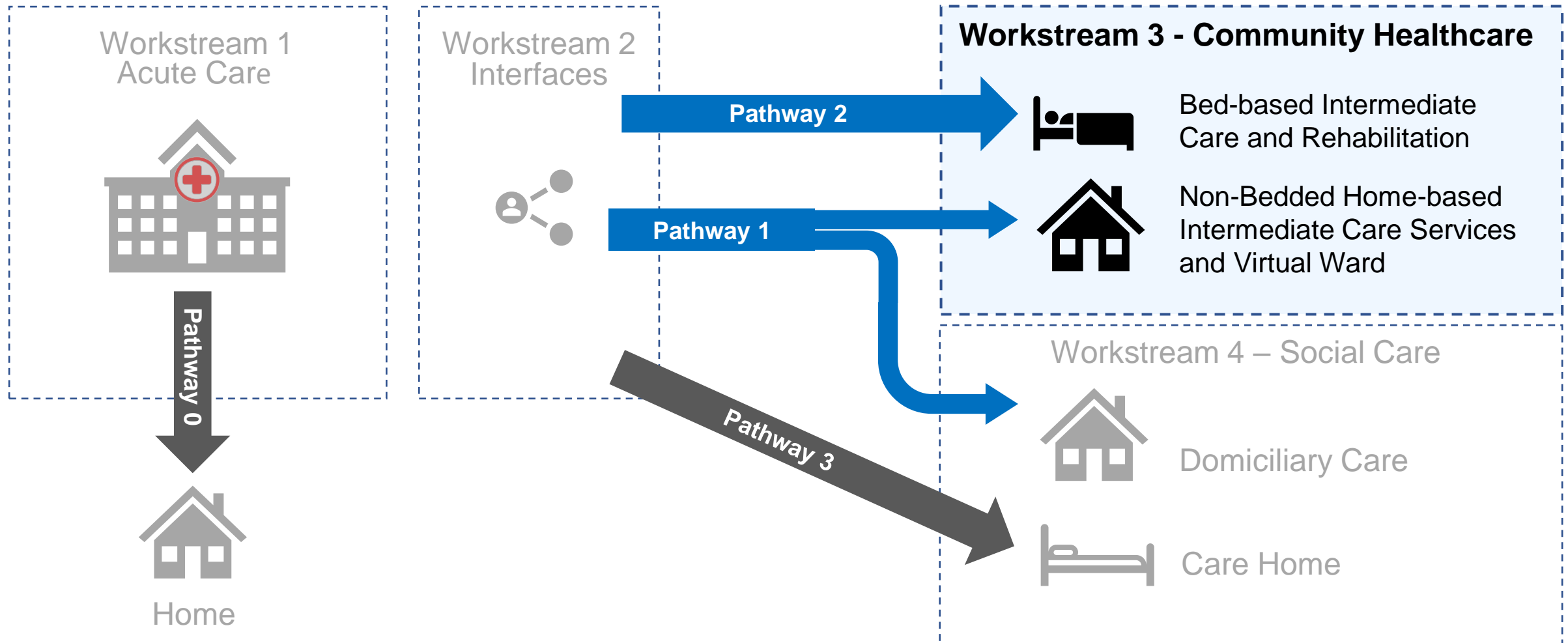
- In support of continued focus on discharge processes, a **national discharge taskforce**, supported by the Government, has been initiated to provide strategic oversight of hospital discharge initiatives.
- This has included the development of **4 distinct but interrelated workstreams across health and care**, underpinned by identification of a number of systems of focus.
- These areas have been identified through regional and national discussions and data analysis and are being supported through virtual and in-persons visits to identify key actions to support further improvements.

**Workstream 1**  
Hospital Only Discharge

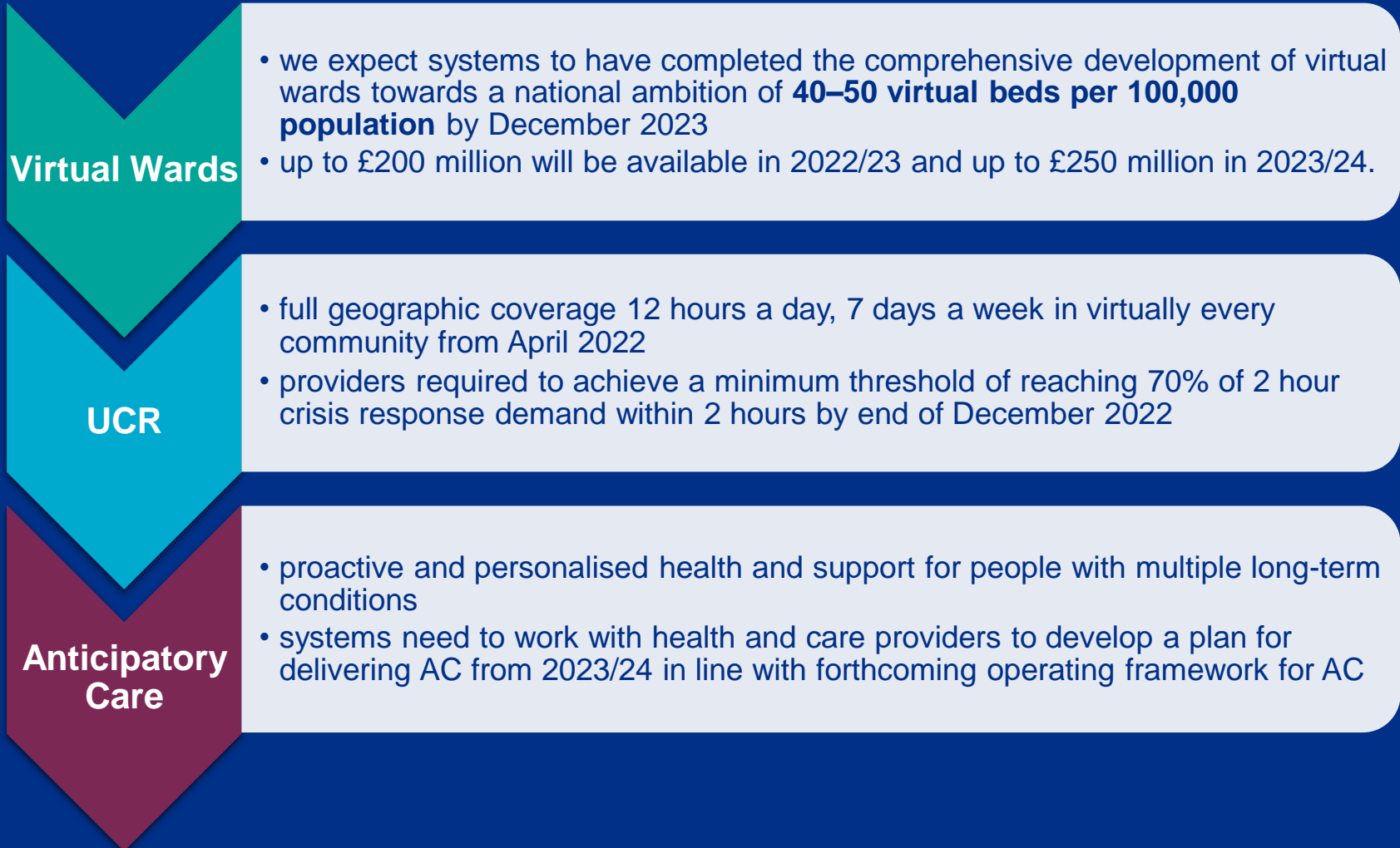
**Workstream 2**  
Discharge Interfaces

**Workstream 3**  
Community Healthcare

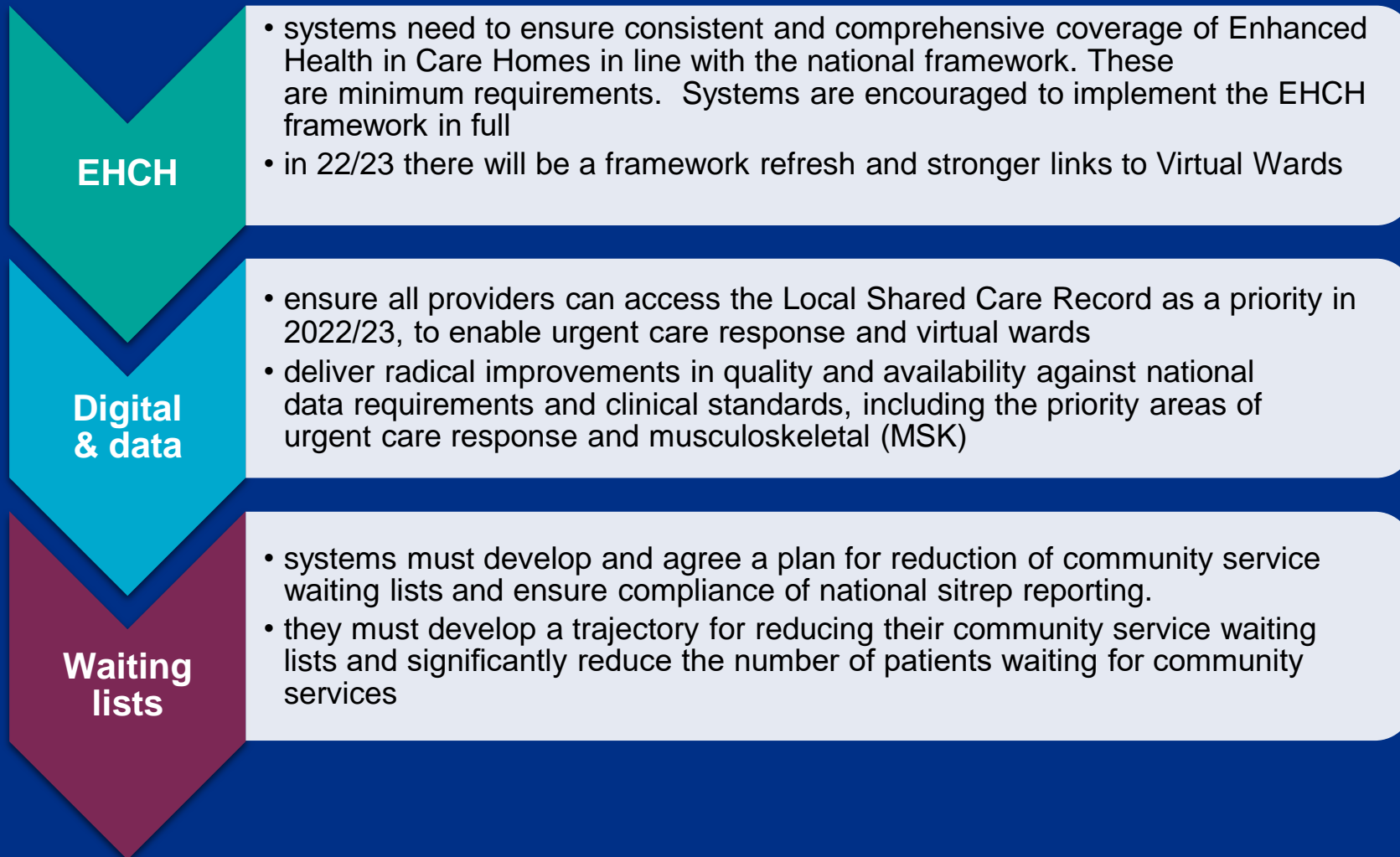
**Workstream 4**  
Social Care



# National priorities



# National priorities





# Virtual wards



A virtual ward is a safe and efficient alternative to NHS bedded care that is enabled by technology.

Virtual wards support patients who would otherwise be in hospital to receive the acute care, monitoring and treatment they need in their own home.

This includes either preventing avoidable admissions into hospital, or supporting early discharge out of hospital.

**The NHS has an ambition to extend virtual wards to more people across the country so that by December 2023 there are 40–50 virtual beds per 100,000 population.**

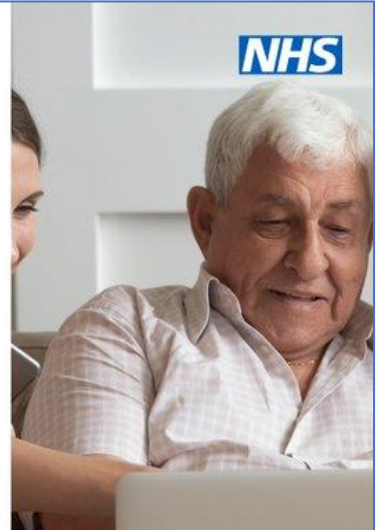
## **Better for people**

- People receive high quality care from a multidisciplinary team but in the comfort of their own home
- People are supported to be as independent as possible, helping to avoid deconditioning sometimes seen in a hospital environment.
- People can have visitors at a time that's convenient to them, eat their favourite foods and have their family and pets around them.

"It's a truly amazing feeling, when we treat someone with delirium at home with IV fluids and they improve within the hour, being **back to themselves**.

"Patients are so thankful to us for being able to stay in their own homes. It **means the world to them**."

**Trainee  
Virtual ward in east Kent**



Join our Virtual Wards workspace on [FutureNHS](#) to share resources, and discuss learning from those expanding or setting up virtual wards. To find out more please email [england.virtualward@nhs.net](mailto:england.virtualward@nhs.net)

# Anticipatory care



Proactive and personalised health and support for people with multiple long-term conditions of any adult age

**Systems need to work with health and care providers to develop a plan for delivering AC from 2023/24 in line with forthcoming operating framework for AC**



“

We are embarking on the largest cultural change seen in a generation, moving from reactive, single disease-based fragmented care to proactive joined-up care, personalised to the individual.

This is anticipatory care and our simple goal is to ensure that people can be happy, healthy and living independently for as long as possible.

No-one can challenge this aspiration but it takes a concerted and focused approach to achieve this for older people with a medical diagnosis of frailty, who are not as physiologically robust as a fit and well person of a similar age.

”

**GP David Attwood, GP Partner and Clinical Lead for integrated care of older people in West Devon**



# 2-hour urgent community response

Two-hour UCR teams provide assessment, treatment and support to people over the age of 18 in their own home or usual place of residence who are experiencing a health and/or social care crisis and who are at risk of hospital admission within the next 2-24 hours.

There are now UCR teams covering virtually every community in the country.

**For 2022/23 systems and providers are expected to:**

- maintain full geographic rollout and continue to grow services to reach more people
- increase the number of referrals from all key routes, with a focus on Urgent and Emergency Care (UEC), 111 and 999, and increase care contacts
- ensure workforce plans support increasing capacity and development of skills and competencies in line with service development
- providers required to achieve, and ideally exceed in the majority of cases, the minimum threshold of reaching 70% of 2-hour UCR demand within 2 hours from the end of December 2022
- improve capacity in post-UCR services to support flow and patient outcomes including avoiding deterioration into crisis again or unnecessary admission



**NHS**

## 2-hour Urgent Community Response (UCR)

Do you know there are teams of advanced clinicians in your community who can respond within two hours if someone's health or wellbeing suddenly deteriorates at home?

This can avoid the need for an ambulance and prevent hospital admission.

### Do you know your UCR team?



**Advanced nurses and therapists can carry out assessments, order tests, diagnose, prescribe and order equipment within two hours of referral. They usually work 8am-8pm 7 days a week.**

The UCR team can keep the patient safe at home with the support of GPs, geriatricians, social care and other specialists

### What conditions are suitable for referral to your UCR team?



**If you think the patient could be admitted to hospital unless they are seen within two hours, call your UCR team. Here's a list of the most probable scenarios:**

- Fall with no apparent serious injury
- Decompensation of frailty
- Reduced function/ deconditioning/reduced mobility
- Palliative/end of life care crisis support (where core services not available)
- Confusion/delirium
- Urgent catheter care
- Urgent support for diabetes
- Unpaid carer breakdown which if not resolved will result in a health care crisis
- Urgent equipment provision

### How can you make a referral?



**UCR teams have been rolled out across the country. There will be one in your area, improving patient experiences and outcomes.**

Check for local UCR services on the Directory of Service, PaCCS, MiDoS and NHS Service Finder or call [add local contact details for UCR]

Find out more:

[www.england.nhs.uk/community-health-services/community-crisis-response-services/](https://www.england.nhs.uk/community-health-services/community-crisis-response-services/)

Every person who requires and will benefit from non-acute rehabilitation are able to receive high quality, timely care and as close to home and community as possible.

We will embed rehabilitation as a core community offer that supports individuals and populations with recovery and restoration, maintenance and prevention or deterioration of health and wellbeing.

## Objectives:

- Optimising bedded and home models of care
- Developing digital and virtual models
- Improving data recording and reporting
- Strengthening the offer through community assets and levers

[england.communityrehab@nhs.net](mailto:england.communityrehab@nhs.net)



# Community Rehabilitation 22/23 priorities



## Levers

NHSE CHS Policy:  
Discharge, BCF,  
Virtual Wards



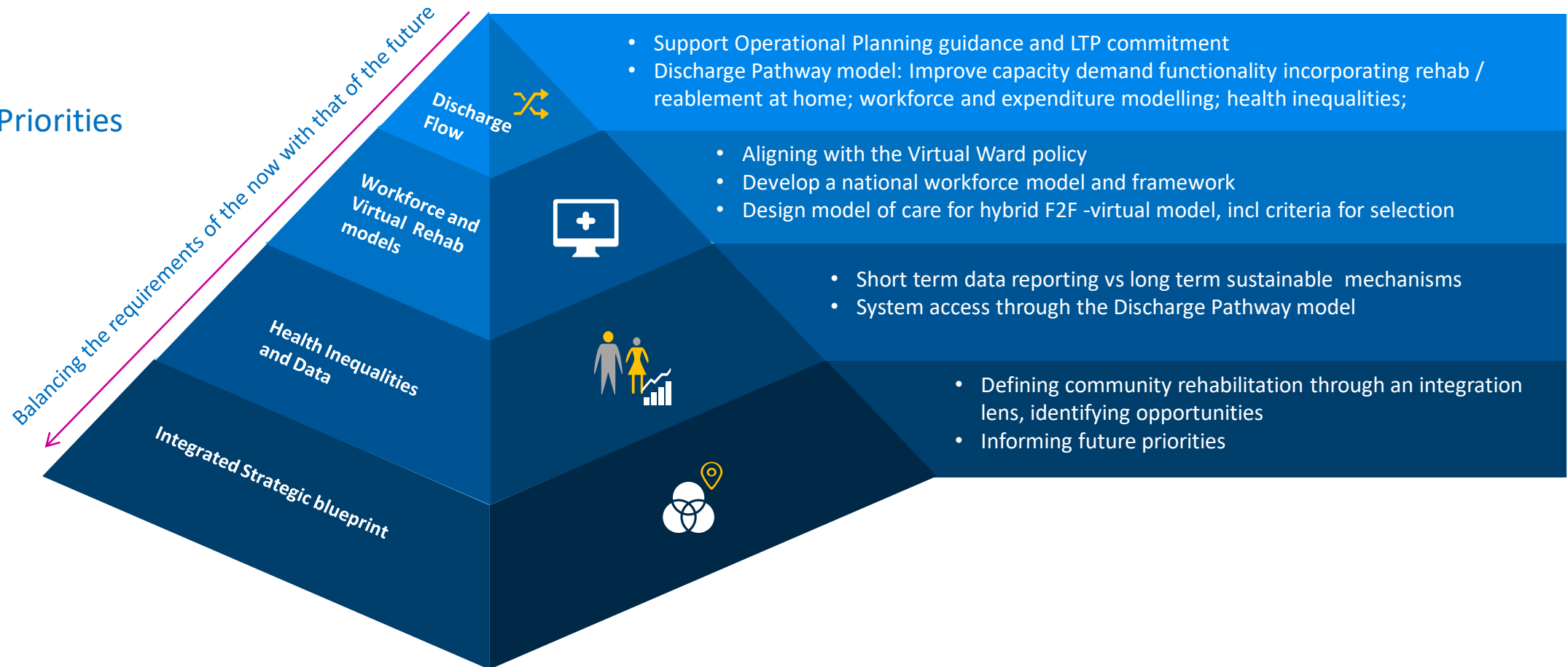
NHSE strategic levers:  
LTP, Elective Recovery  
Plan



Legislation: Health and  
Care Act, Integration  
White Paper



## 22/23 Priorities



# Optimising bedded and home care post discharge

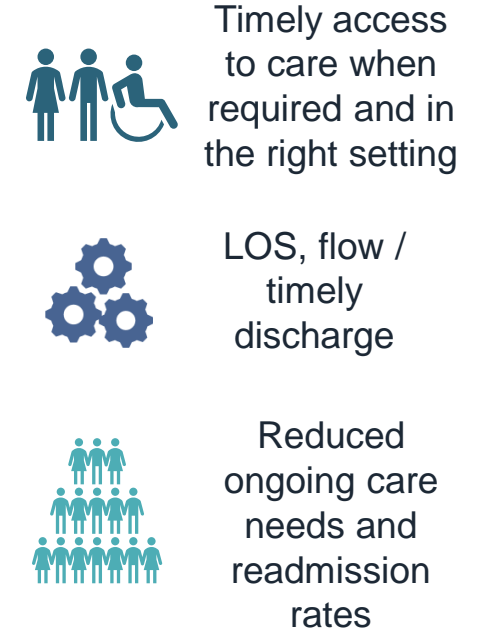
## Current model

- Various issues affecting current model:
- **Variation in bedded capacity** affected by various drivers: geography, estates, behaviours, funding, systems maturity
- Access to **home care** is varied and subject to workforce availability and maturity in system integration
- Variation in **local models** with no clear outcome measures hinders understanding of where it may be working and what good looks like
- **National oversight and benchmarking** of variation and inequalities in access is challenging without improvement in data quality and reporting

## Optimising bed & home pathways



## Improving outcomes





# Restoration and waiting lists



Over 900,000 patients are waiting for community services

**Systems must develop and agree a plan for reduction of community service waiting lists and ensure compliance of national sitrep reporting.**

Specifically, systems are asked to:

- develop a trajectory for reducing their community service waiting lists
- significantly reduce the number of patients waiting for community services
- prioritise patients on waiting lists
- consider transforming service pathways and models to improve effectiveness and productivity.



The waits for musculoskeletal conditions in the community are the highest for any condition in every region of the country. The Best MSK health programme has developed a comprehensive toolkit to support the management of back pain, shoulder pain and hip and knee OA , providing evidence-based resources and clear guidance on referral optimisation to support recovery of services and delivery of high quality care.

**Chris Mercer**  
Consultant Physiotherapist  
Clinical Lead, NHSEI Best MSKHealth





# Enhanced health in care homes

**People living in care homes should expect the same level of support as if they were living in their own home.**

EHCH provides a framework for delivering health care to residents through the support of a multi-disciplinary team (MDT) including primary care, specialists, community-based care services and care home staff.

Requirements included in:

- [2020/21 Network Contact DES](#) and [associated guidance](#) for primary care networks (PCNs)
- [NHS Standard Contract](#) for community health services and other NHS providers

Every care home should have access to:

- a weekly 'home round' or 'check in' with residents based on the MDT's clinical judgement
- a personalised care and support plan within 7 days of re/admission to a care home
- [Structured Medication Reviews](#) for residents who would benefit from the review.



# Patient flow



Jenny Keane, Director  
Hospital Discharge and Rehabilitation  
NHS England



## The NHS Patient Flow Conference 2022



# SPEAKING NOW



**Jyothi Nippani**

National Clinical Lead  
NHHE/I Emergency & Elective Improvement

I will be  
discussing...

“Impact of Managing Frailty on  
Patient Flow”

# Frailty – Impact on Emergency patient flow

**Rachel Williams**

Associate Director of Operations

South Warwickshire University Foundation Trust

**Jyothi Nippani**

Foundation Group AMD - South Warwickshire NHS FT

Clinical Director – NHSI (Elective and Emergency Improvement)

National Clinical Lead – Hospital Transformation

Today...

Why frailty? Impact  
on flow – some  
facts

Latest PDSA and  
recommendations...



# Headlines

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Weather

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## NEWS

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England | Local News | Regions | Norfolk

### East of England Ambulance boss sorry after waiting patient dies

🕒 4 days ago



#### Ambulance and trolley waits soar to record levels

By Alison Moore, Matt Discombe | 11 November 2021



8 Comments

> Heart attack and stroke patients face waits of nearly an hour despite 18-minute target

> Trolley waits in A&Es top 7,000 in October amid worst ever performance levels

Ambulance response times hit new lows last month, leaving heart attack and stroke patients waiting nearly an hour to be reached on average, despite the system having an





News

## Exclusive: Ambulance service will collapse by August, predicts its nursing director

25 May 2022

A struggling ambulance trust could face a 'Titanic moment' and collapse entirely this summer if the region's worsening problems with hospital handover delays are not taken more seriously, its nursing



News

## Multiple deaths due to care delays highlighted in damning CQC report

27 May 2022

Dozens of patients died or suffered 'severe harm' after long waits for ambulances during a three-month period in a health system facing 'extreme pressure' on its emergency services.

# Who can be harmed when patients are admitted unnecessarily?

Working backwards through the chain of events leading to admission



**The patient waiting at home**  
Pts at home waiting for an ambulance...



**The patient waiting to be handed over**  
Can't be off loaded  
No access to treatment



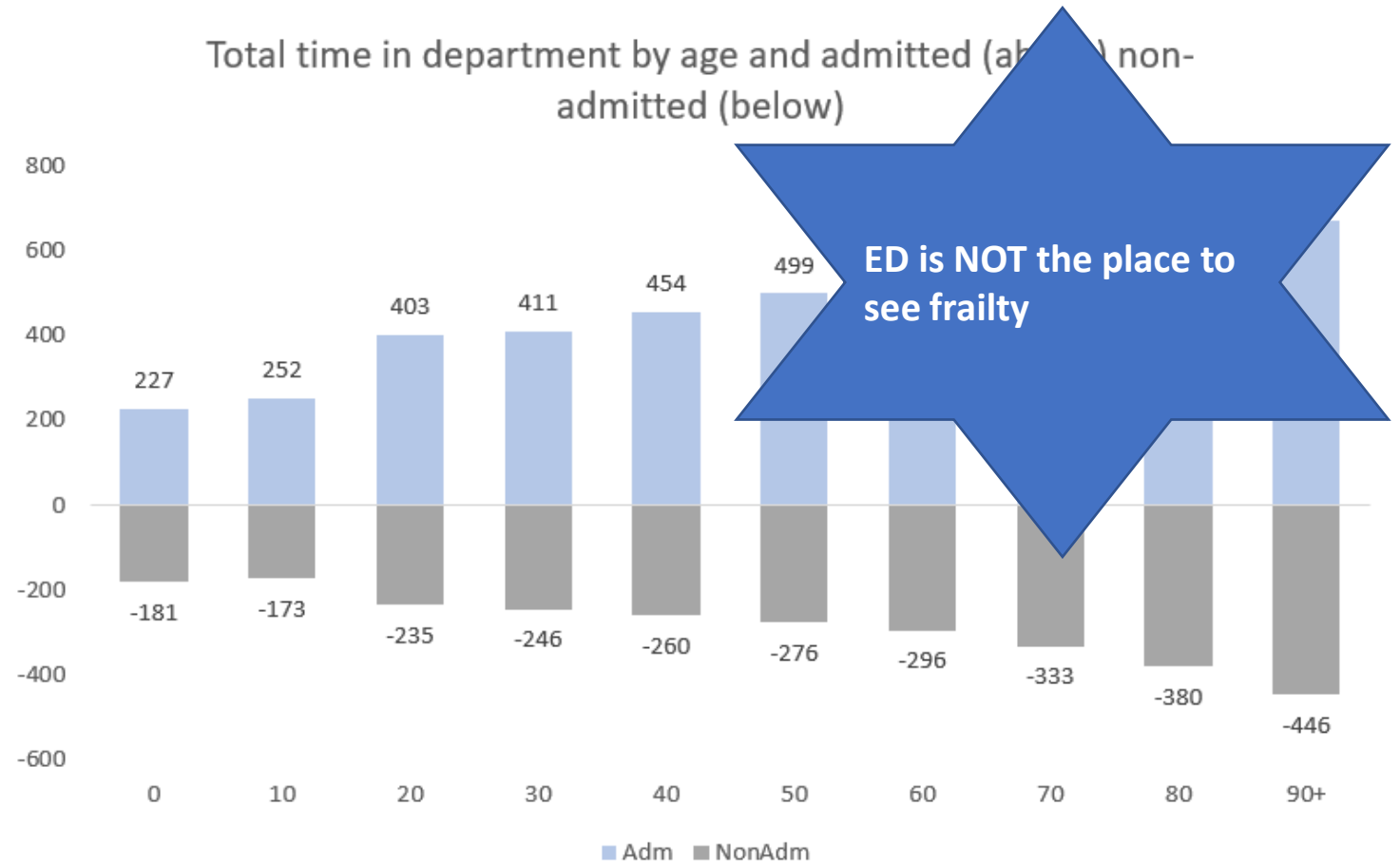
**The patient waiting for a bed**  
Sub optimal care  
>12hrs – significant harm



**The admitted patient**  
Deconditioning  
LloS  
Nosocomial infections  
Death

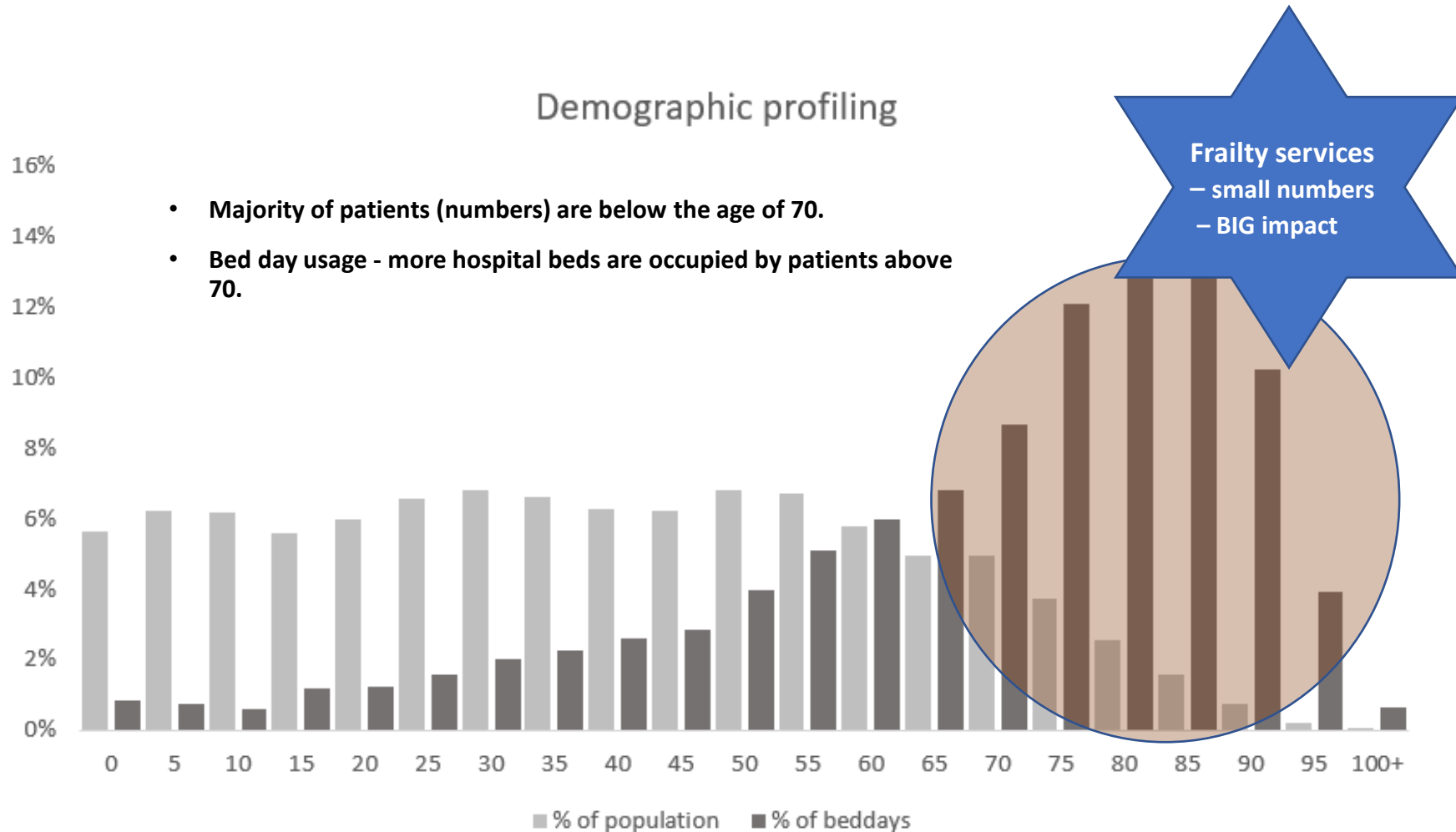
# National picture

- Admitted/speciality pathways spend more time in ED
- Older patients spend 10-11hrs if admitted and 6-7 hrs if not admitted



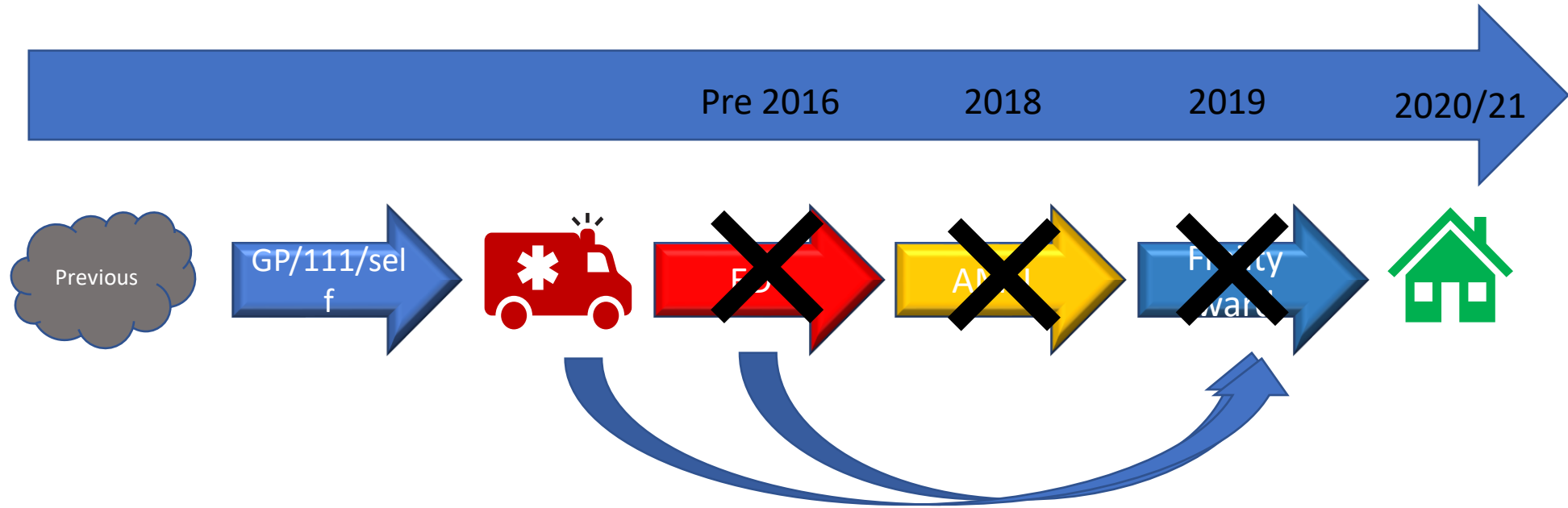
# Emergency care bed-day usage

- Over 70s**
- Population **13.5%**,
  - Attendances **22%**
  - Time in ED **30%**
  - Beds **66%**

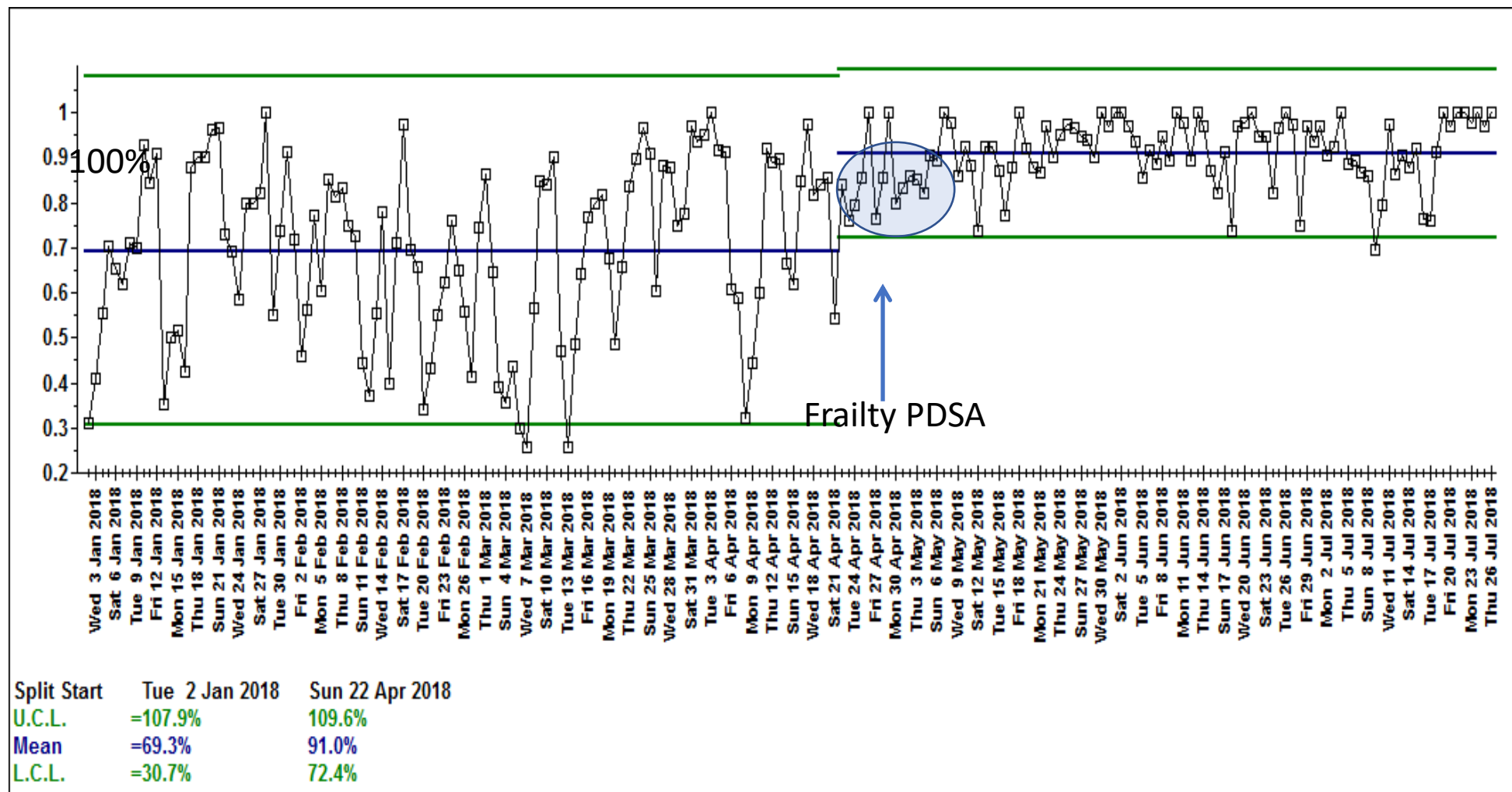




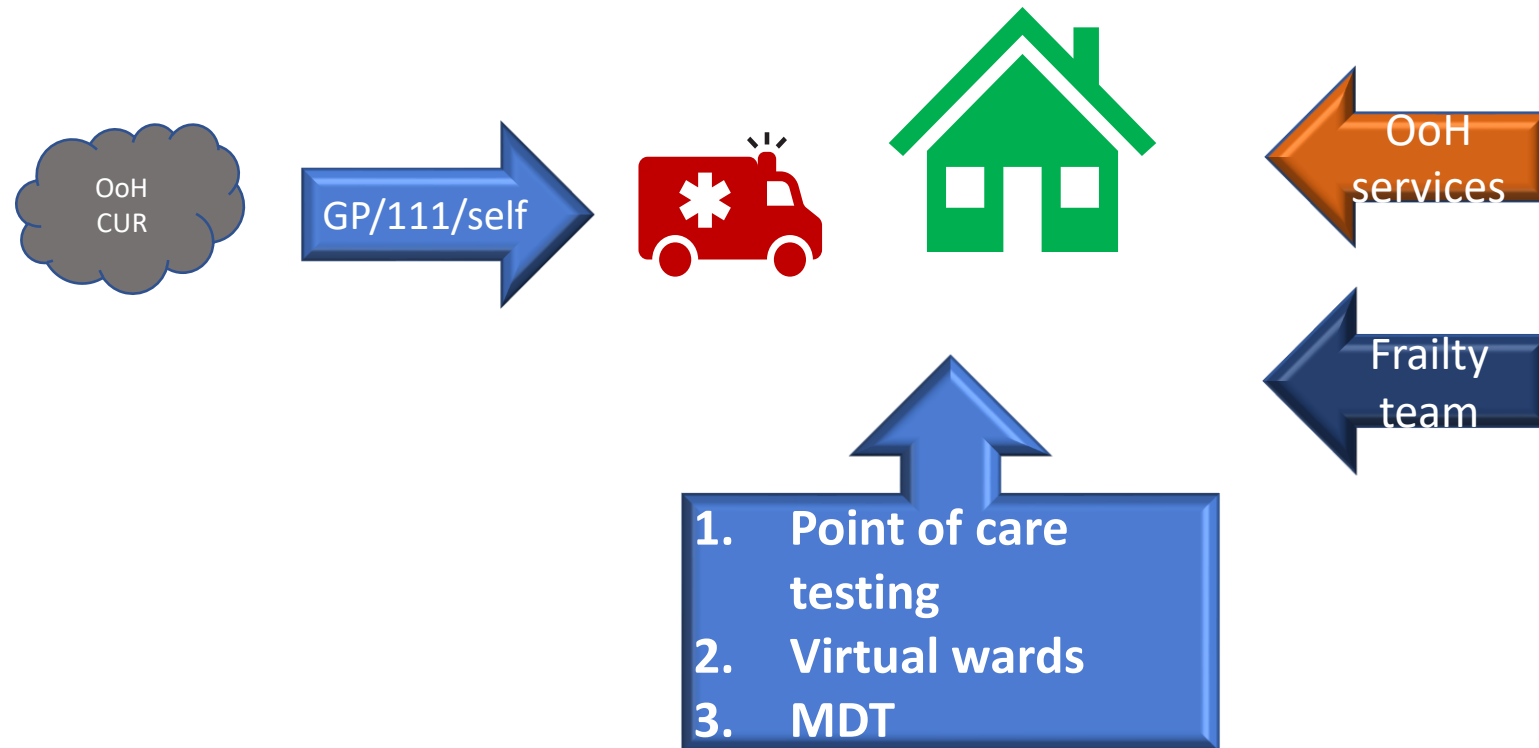
# SWUFT - Frailty Journey



# A&E 4 Hour Performance for over 75's – Pre Covid



# Frailty Journey – 2021/22





## Why Frailty?

### Impact on Elective and Emergency Flow

Age group	Proportion of beds occupied in SWFT	Proportion not meeting CtR within the age group
<18	1%	0%
19-74	42%	21%
>75	57%	34%

More than 50% occupied by older patients

A third of these don't need to be here

A significant number – don't need admission

Should not be conveyed to sec. care.

Most of them did not want to leave home

**Getting frailty right – best patient experience AND will release inpatient capacity**



However referred, majority of older patients come to sec. care via an ambulance

## The Problem...

- Ambulance services have three options when on site with a patient.

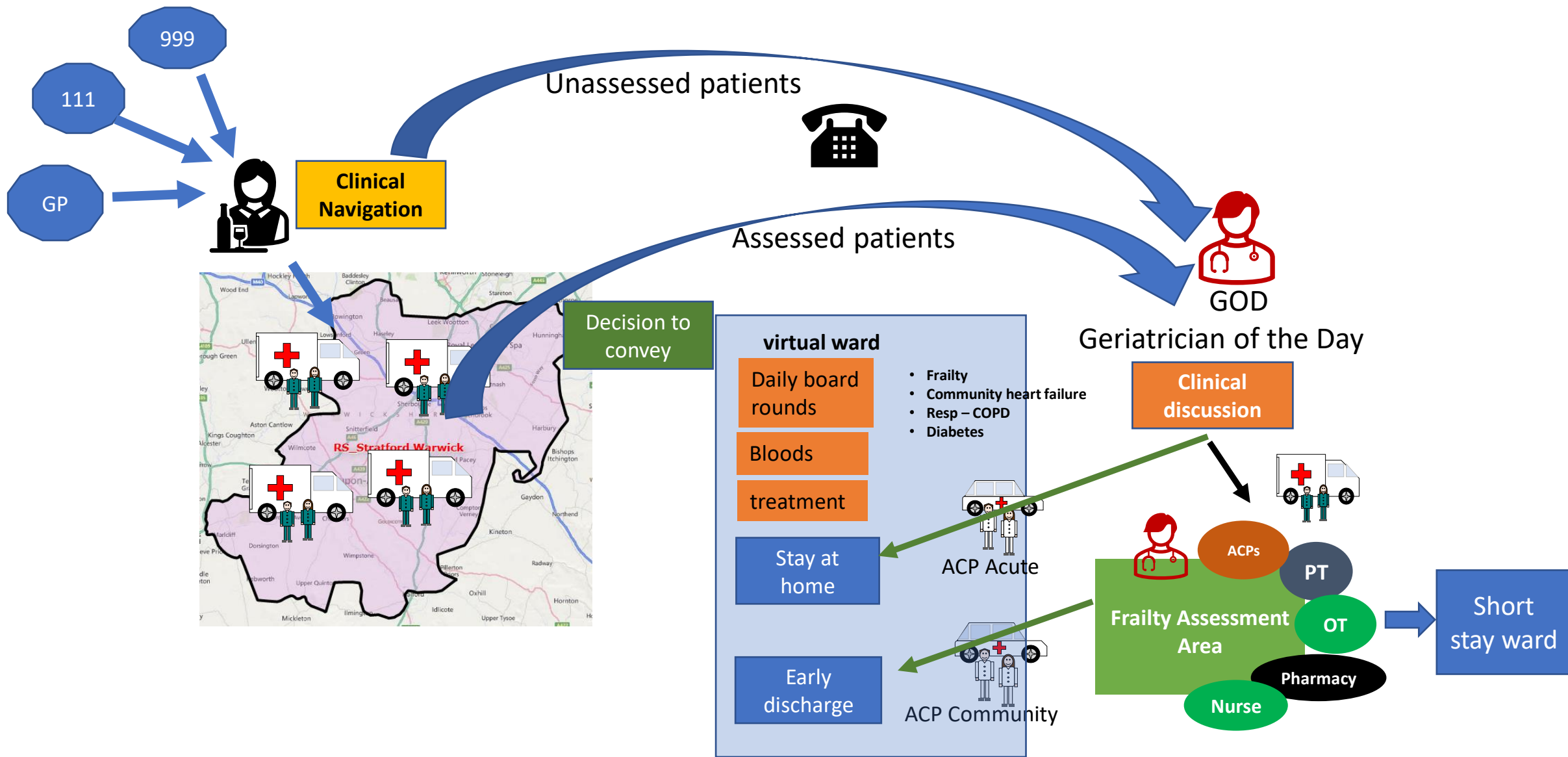
1. See and Treat
2. See and convey to ED
3. See and find an alternate

Seen as a safe option when 3 fails. The path of least resistance is often the path of most potential harm

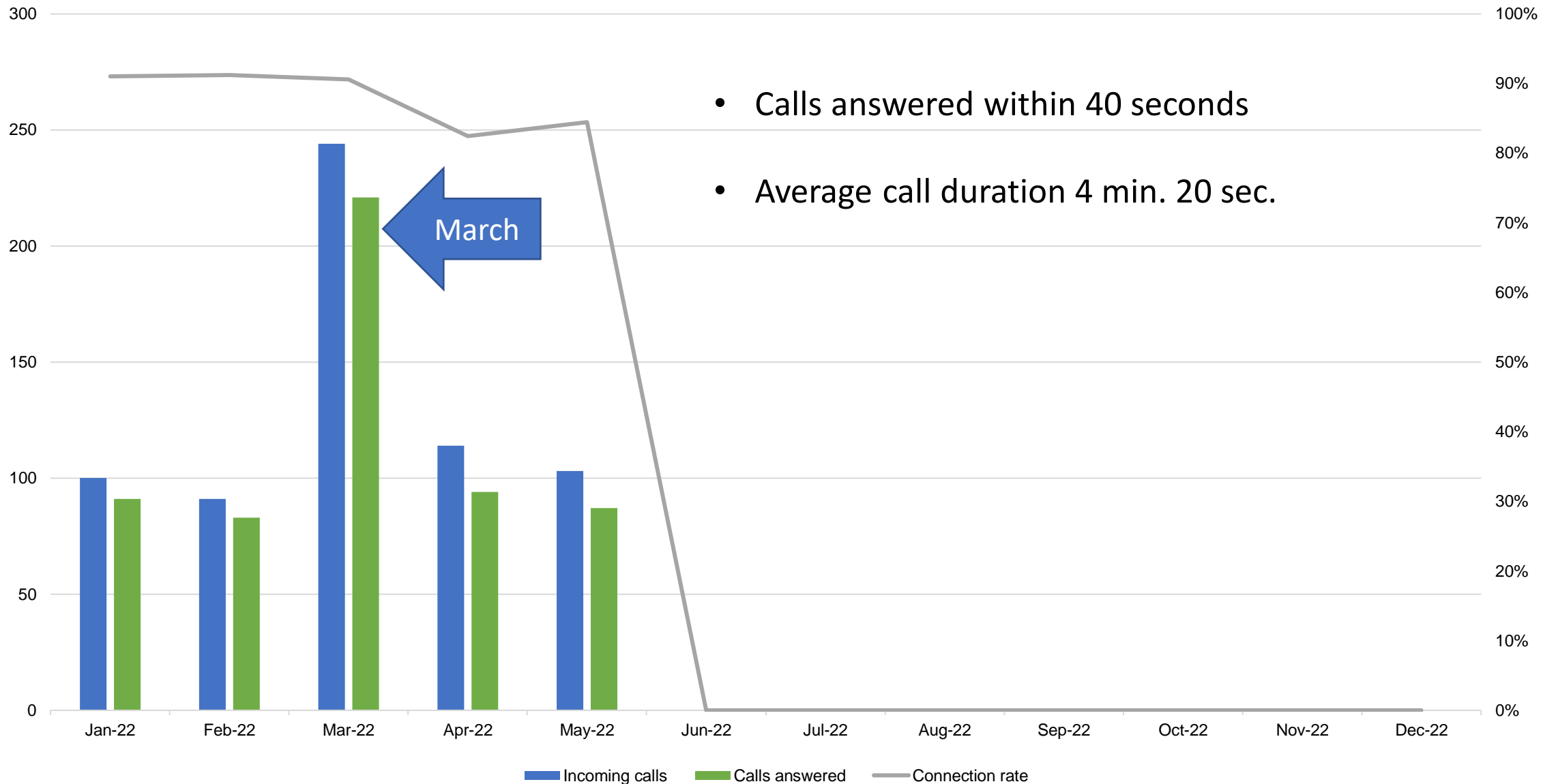
- The third option of 'see and find an alternate pathway' is often unreliable and so is used inconsistently leading to a vicious cycle of conveyance, admission, long hospital stays, deconditioning needing increasing packages of care and exit blocks, which in turn lead to delayed ambulance handover times.

# PDSA and criteria

- Patients
  - over 75 yrs age
  - frail and under 75
  - SW postcode
- All categories of WMAS patients
  - Assessed and Unassessed patients
  - 0800- 2000hrs
- Dedicated consultant taking the calls – high quality decision making



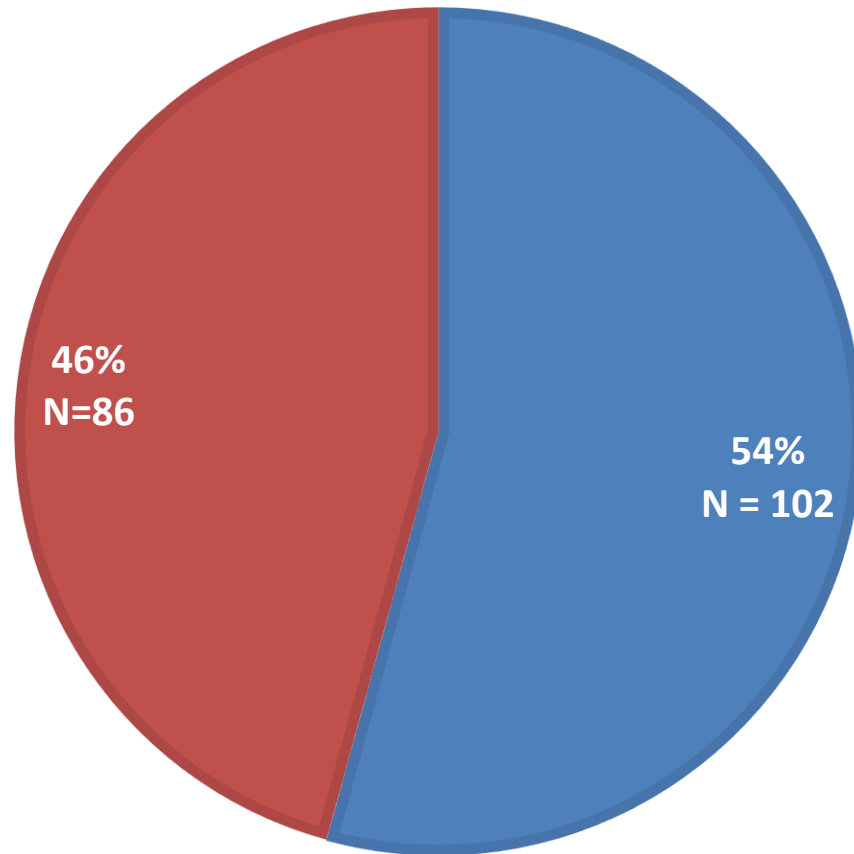
# Consultant connect – calls





## FRAIL - CONVEYANCES AVOIDED – 54%

■ frail conveyance avoided    ■ frail conveyed



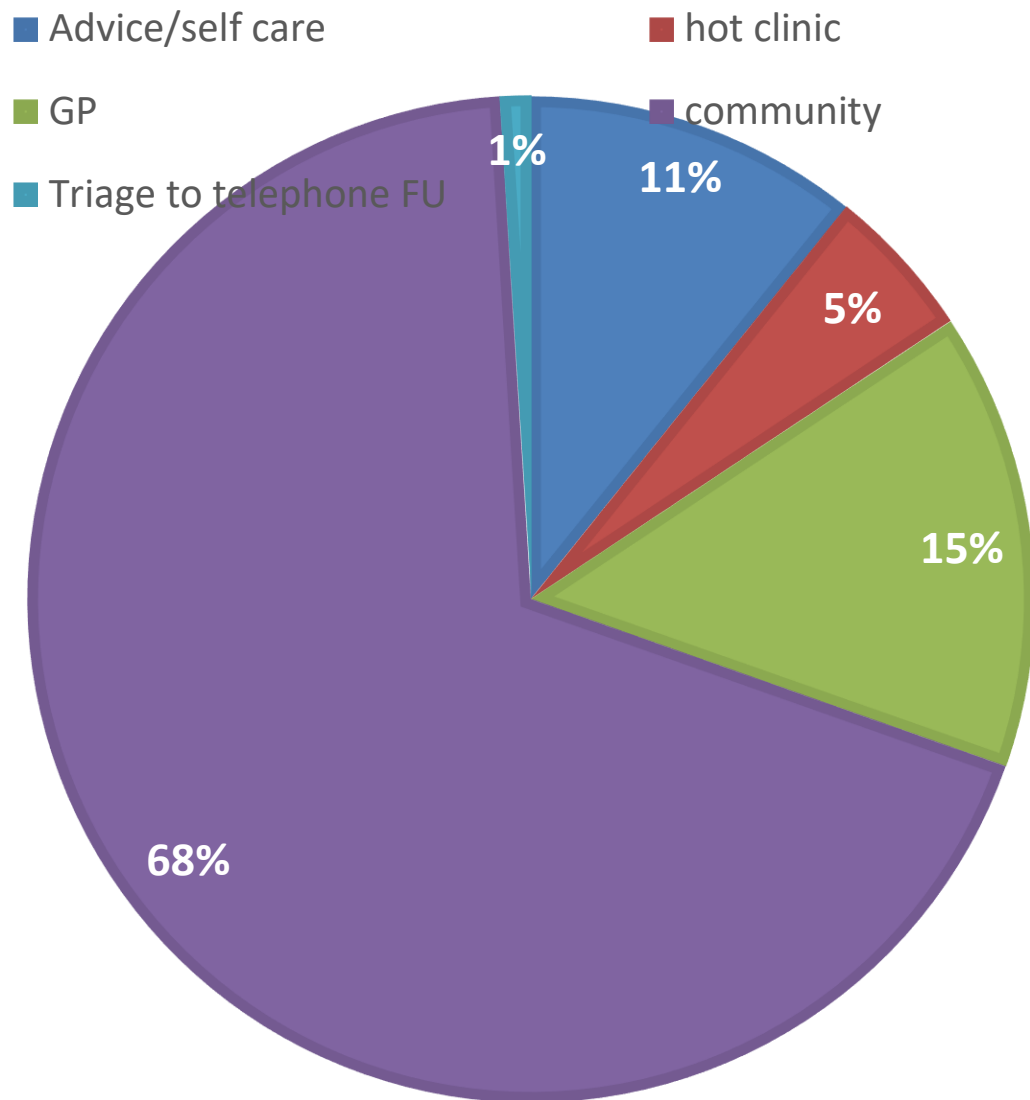
Of the 209 patients over 75 yrs –  
21 not frail

102 patients not conveyed out  
of the remaining 188



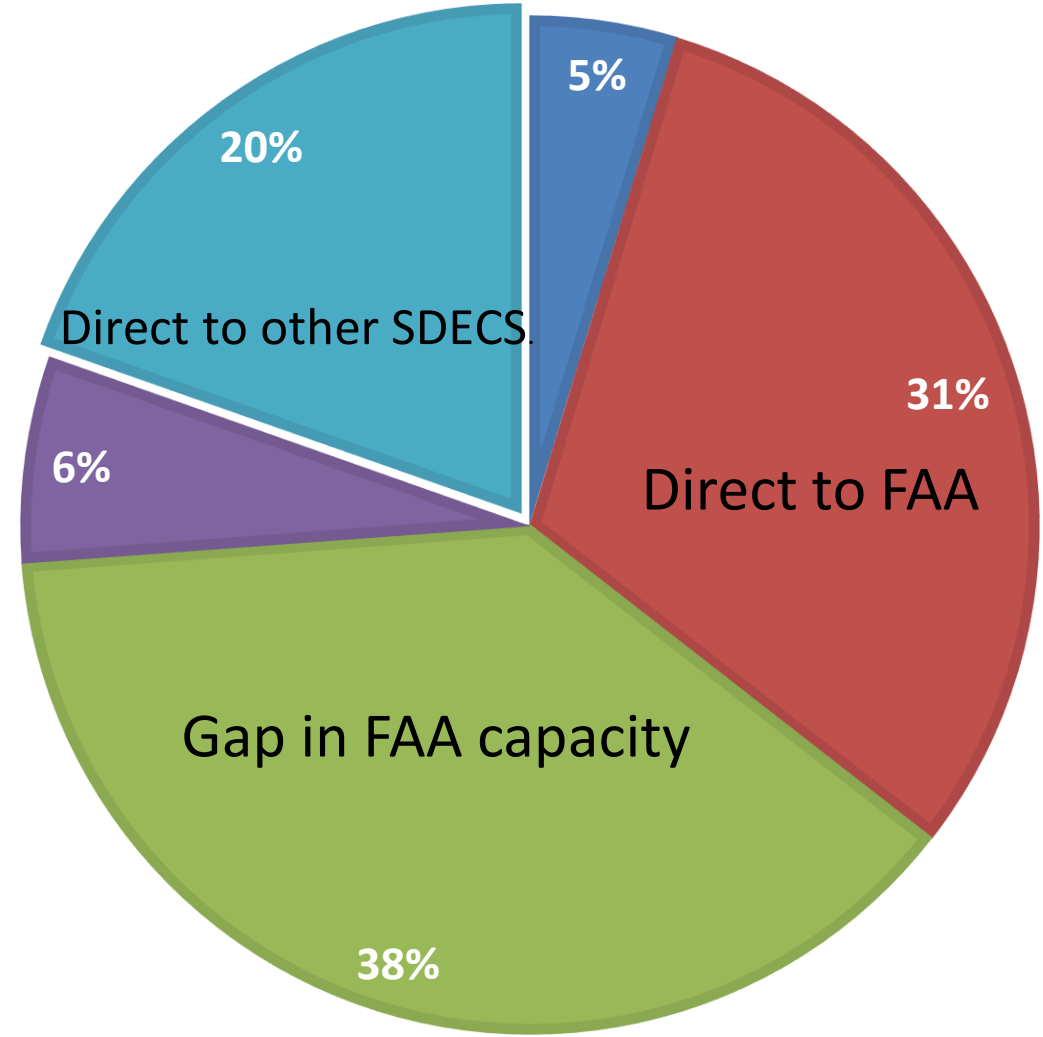
**SWUFT over 75's  
conversion rate is 63%**

## NON CONVEYED - OUTCOMES



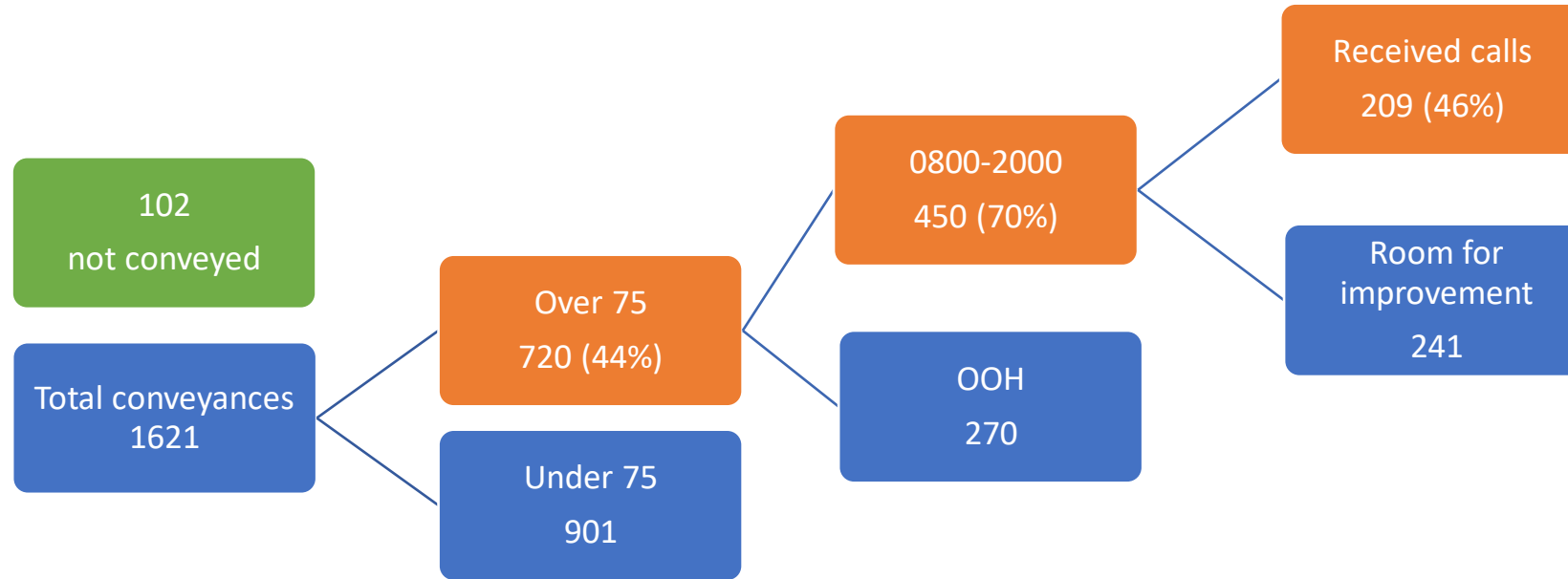
# CONVEYANCES – TRIAGE DESTINATIONS

- ED - No UCR capacity
- Triage o FAA
- ED - No beds on FAA
- ED - need -X-ray
- ED - not frailty



Only 11%  
potentially  
left in ED

# March 2022- SWFT – WMAS conveyance data

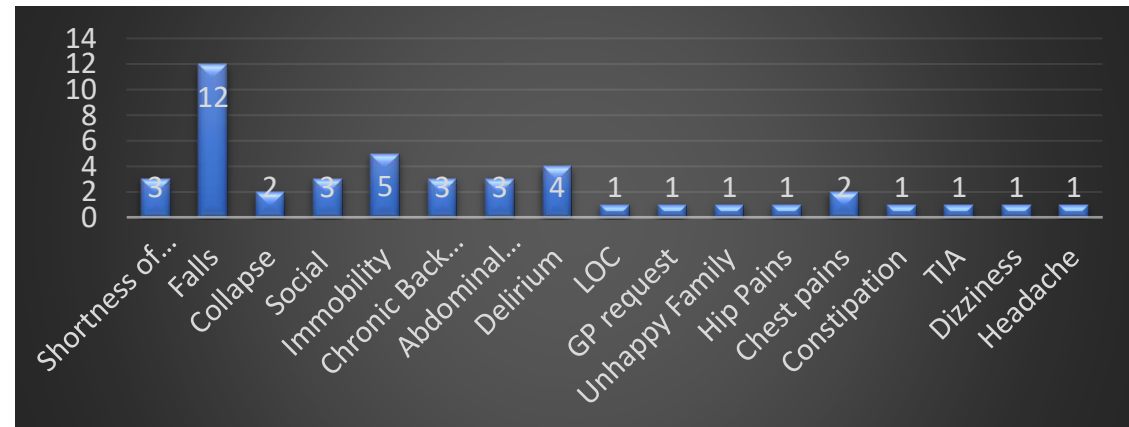
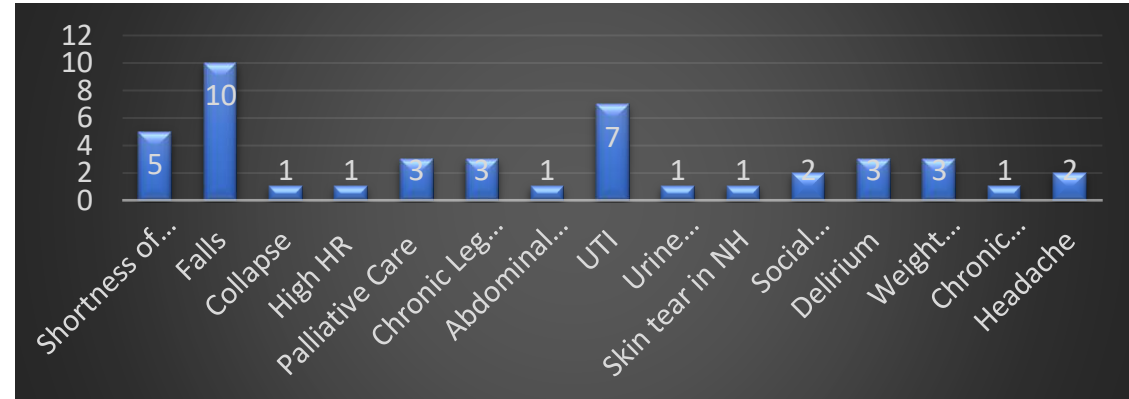


450 patients over the age of 75 were conveyed to SWFT, instead of 552 (450 +102)

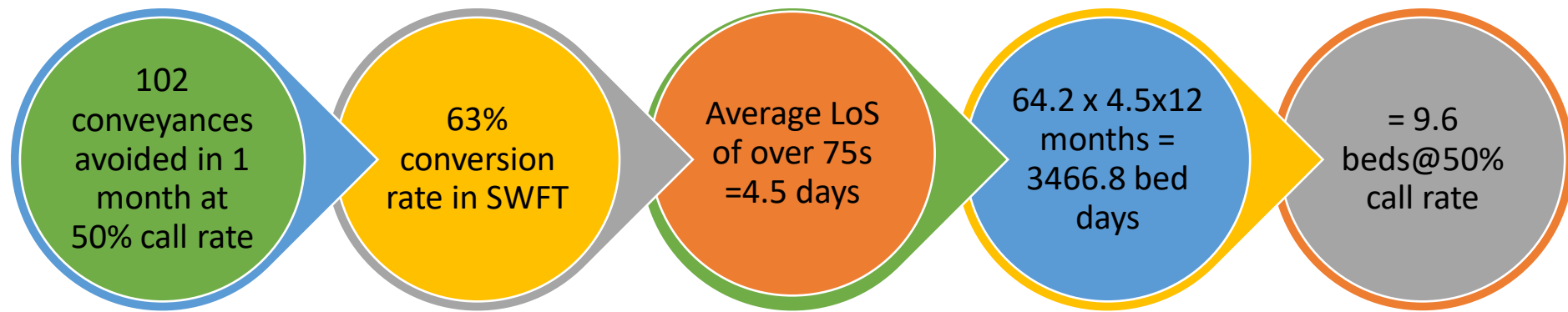
## Comparing symptoms - non conveyed and conveyed

Presentation	Non conveyed	Conveyed
Shortness of breath	5	3
Falls	10	12
Collapse	1	3
High HR	1	
Palliative Care		
Chronic Leg pain		4
Abdominal pains		4
UTI		
Skin tear in NH		
Social prob		1
Delirium	3	4
Wt. loss	3	
Chronic /Chest pain	1	2
Headache	2	
Immobility		5
GP request		1
headache	2	1
TIA/dizziness		2

What makes the difference is having someone at home 24/7 to keep an eye on the patient





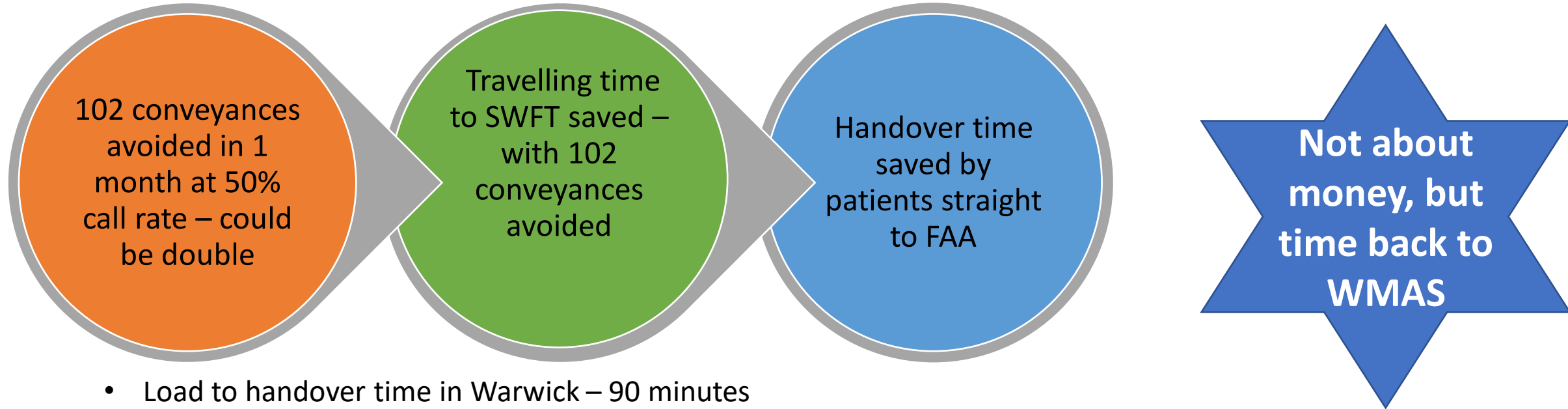


Current conveyances avoided	3.4 patients per day	9.6 bed days saved
If calls doubled	6.8 patients per day	19.2 beds saved

**Potentially saved 10-20 acute beds while doing the right thing for the patients.**

# Potential Quality improvement for WMAS

Refer- current national headlines slide



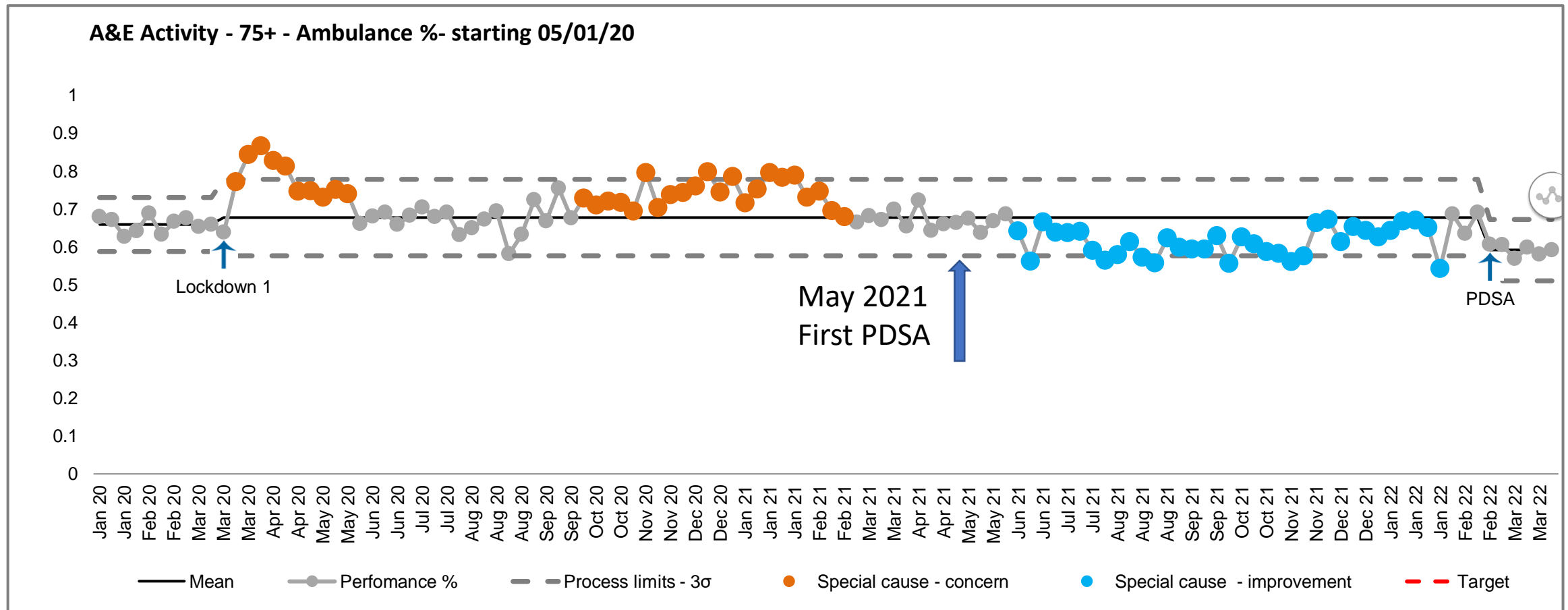
- Load to handover time in Warwick – 90 minutes
- Average ambulance unit hour cost - £500
- 102 conveyances avoided
- **102 x 750 = 76.5K**
- spent ?? out of the 50K - saved - 76.5K in one month alone through non conveyance.
- Waiting time also reduced through direct drop in FAA rather than ED

# Some Myths on 'barn door conveyances'

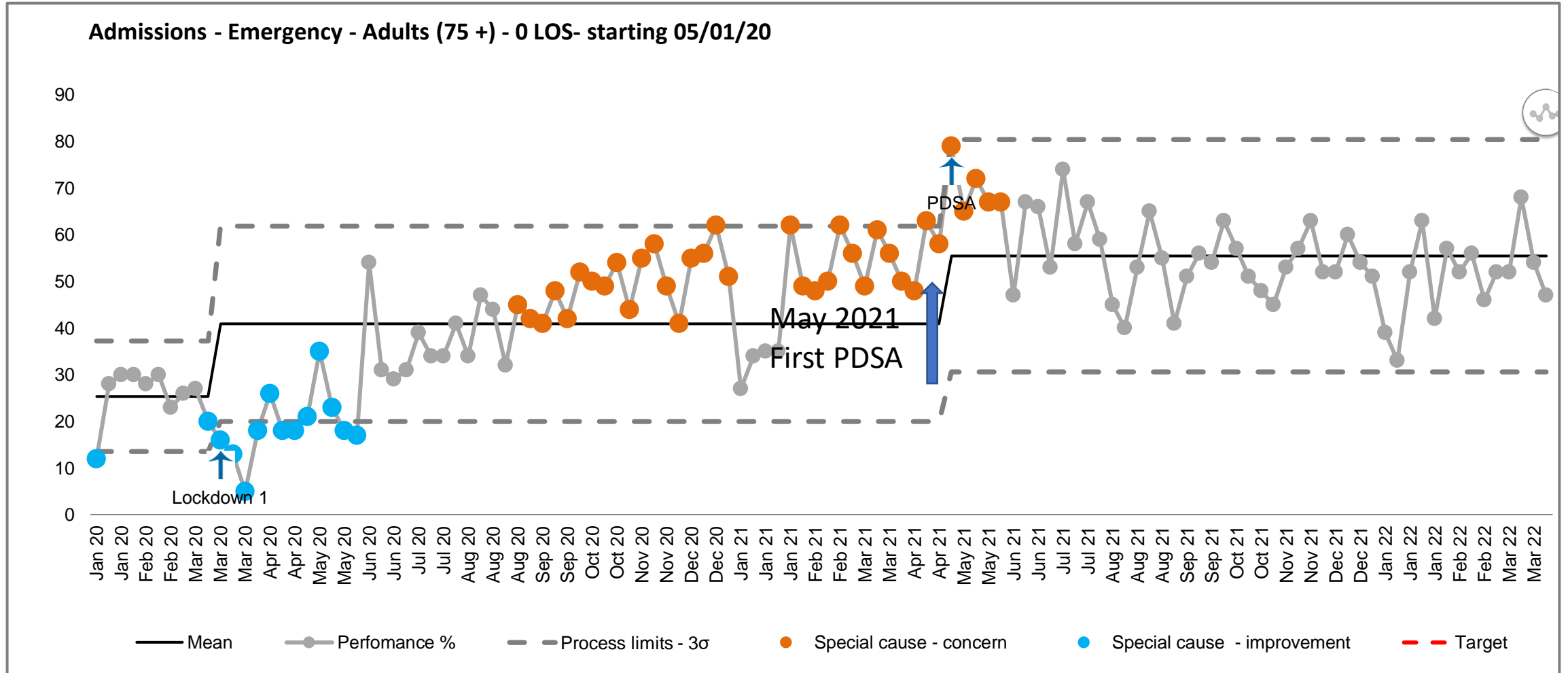
Long lies –more than 4 hrs need bloods	We can do the bloods at home and treat appropriately
Short of breath – saturations < 90%	We can provide treatment and monitoring at home – worth a discussion
Need CT /Xray	If well enough can be brought in the following morning for CT
Frailty unit full – no point calling	Even greater need for calling as we may be able to <ul style="list-style-type: none"><li>• Avoid an admission</li><li>• Arrange to be seen the following day</li><li>• Seen in ED by the frailty team which still avoids delay</li></ul>
GP called for the ambulance – has been treating for UTI, now needs investigations	These are most suitable for management at home on a virtual ward



# Proportion of ambulances to SWFT with over 75s



# SDEC activity in the over 75s



# Hospital to Home

## Warwickshire Fire Rescue Service

- Commissioned by Warwickshire County Council
- Transport patients home
  - Wheel chair crews
  - 2 man chair
- Not just a taxi service
  - Safety checks
  - Fit smoke alarms
  - Assess for Trips and falls
  - Multiagency Hoarding
  - Assess for vulnerability
  - Food in the fridge
  - Can refer to District nursing/Age UK/CERT
- <https://youtu.be/EYozOCOQ-uw>
- [Warwickshire Fire and Rescue Service Hospital to Home | Fab NHS Stuff](#)



# Key messages for Frailty

**Avoid**

Using 999 where possible – call local frailty services directly

**Avoid**

Conveyance where possible – hospital@home /virtual ward

**Avoid**

ED and Acute Medicine where possible – direct to frailty unit

The background features a series of concentric circles that create a tunnel-like effect, receding towards the right. The color palette is a gradient from a muted blue on the left to a light green on the right. The circles are composed of multiple thin, overlapping bands of slightly different shades of the gradient colors.

Questions?





## The NHS Patient Flow Conference 2022



# SPEAKING NOW



**Dr Katherine Henderson**

President of the Royal College of Emergency Medicine  
Royal College of Emergency Medicine

I will be  
discussing...

“Facing up to Reality in  
Emergency Care”



**RCEM**  
Royal College  
*of* Emergency  
Medicine

# Facing up to the Reality of Emergency Care

Dr Katherine Henderson

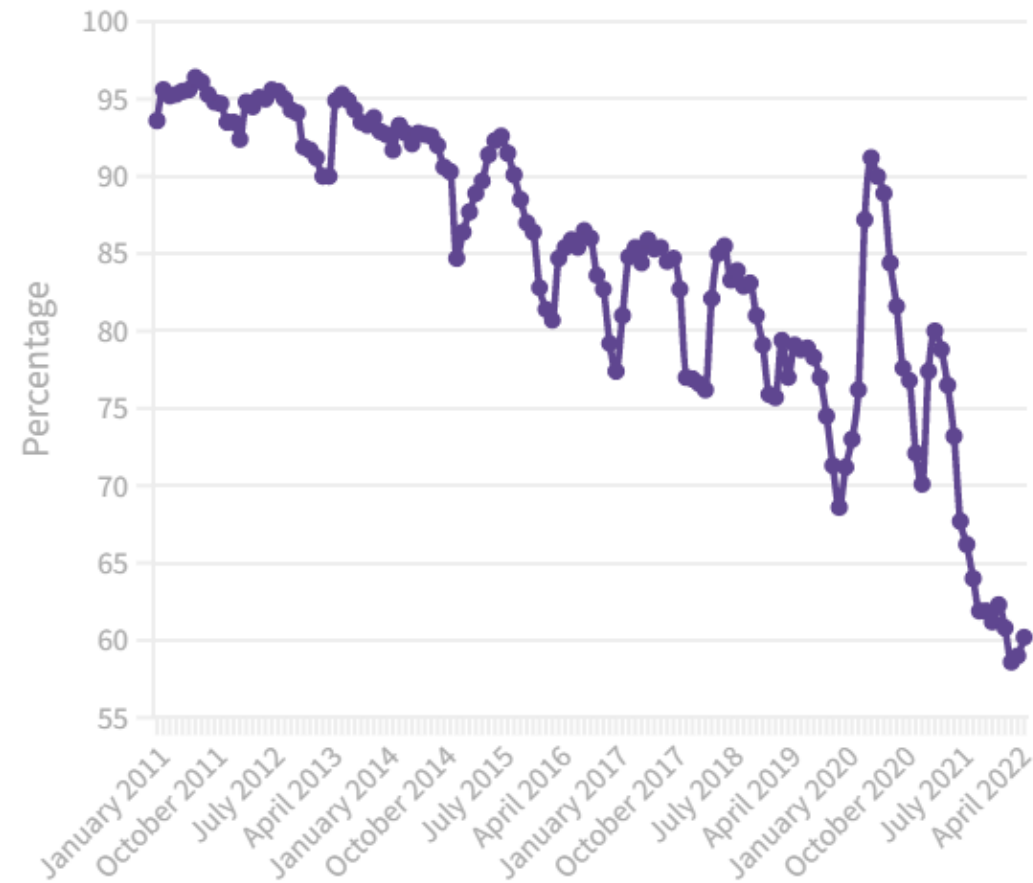
President RCEM UK



July 2022 Emergency Care - Reality - How we all feel at the moment

## 4-Hour Target in Type 1 EDs

■ Percentage in 4 Hours or Less



✶ A Flourish data visualization



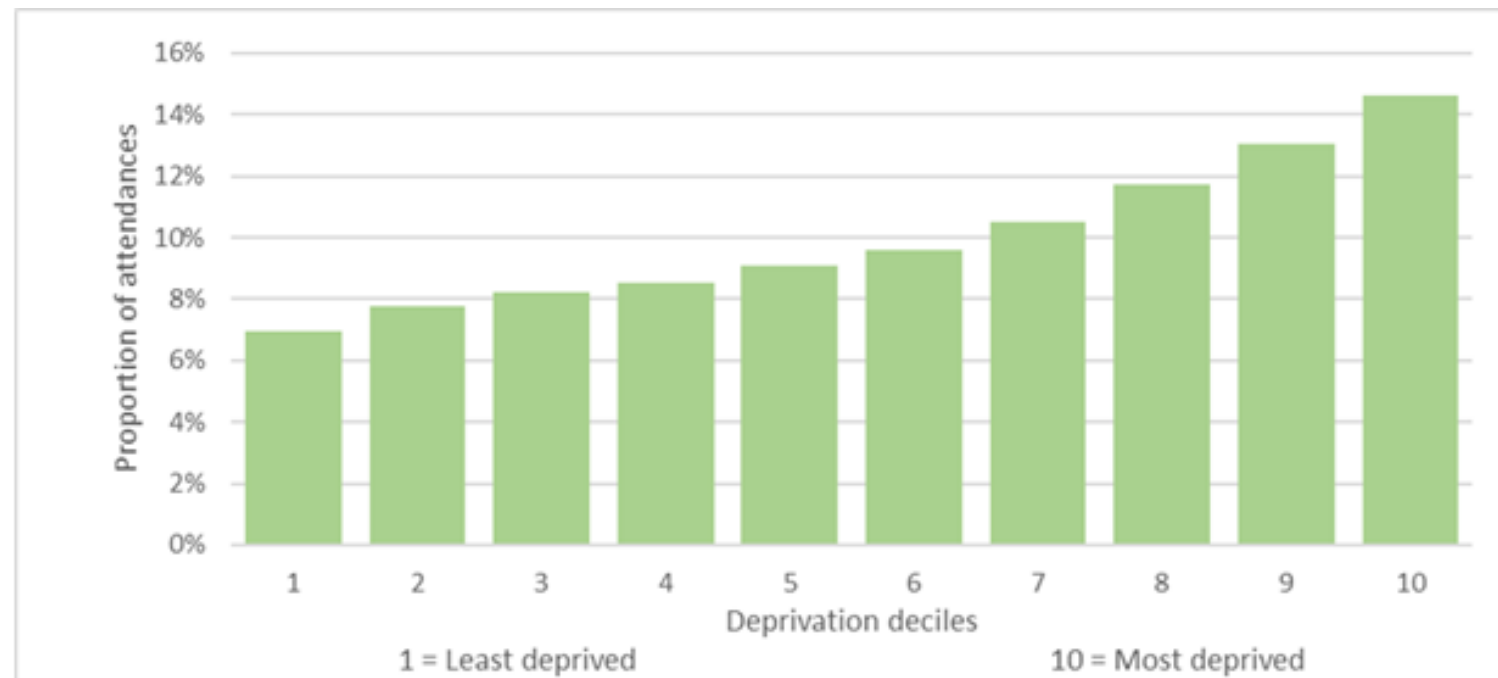


# Emergency Medicine

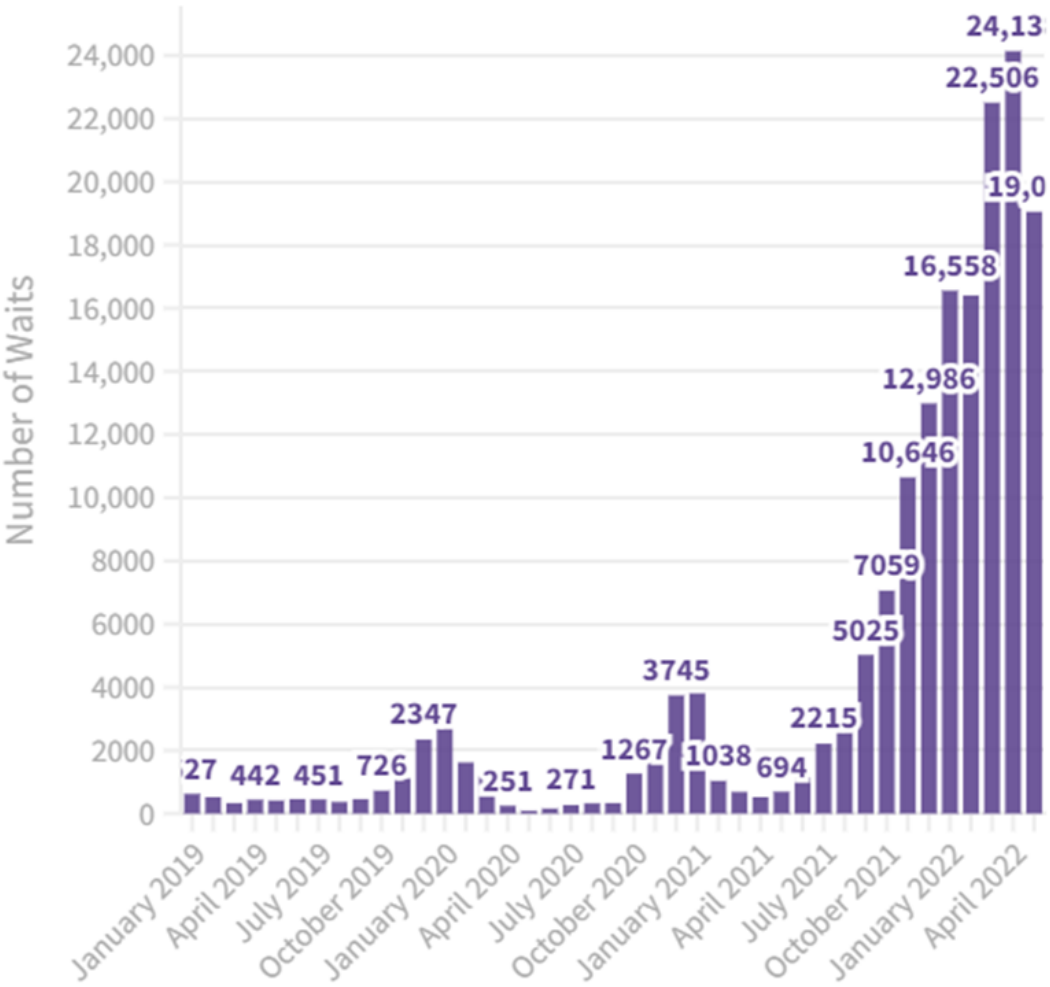
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Proportion of  
ED  
attendances  
by level of  
deprivation



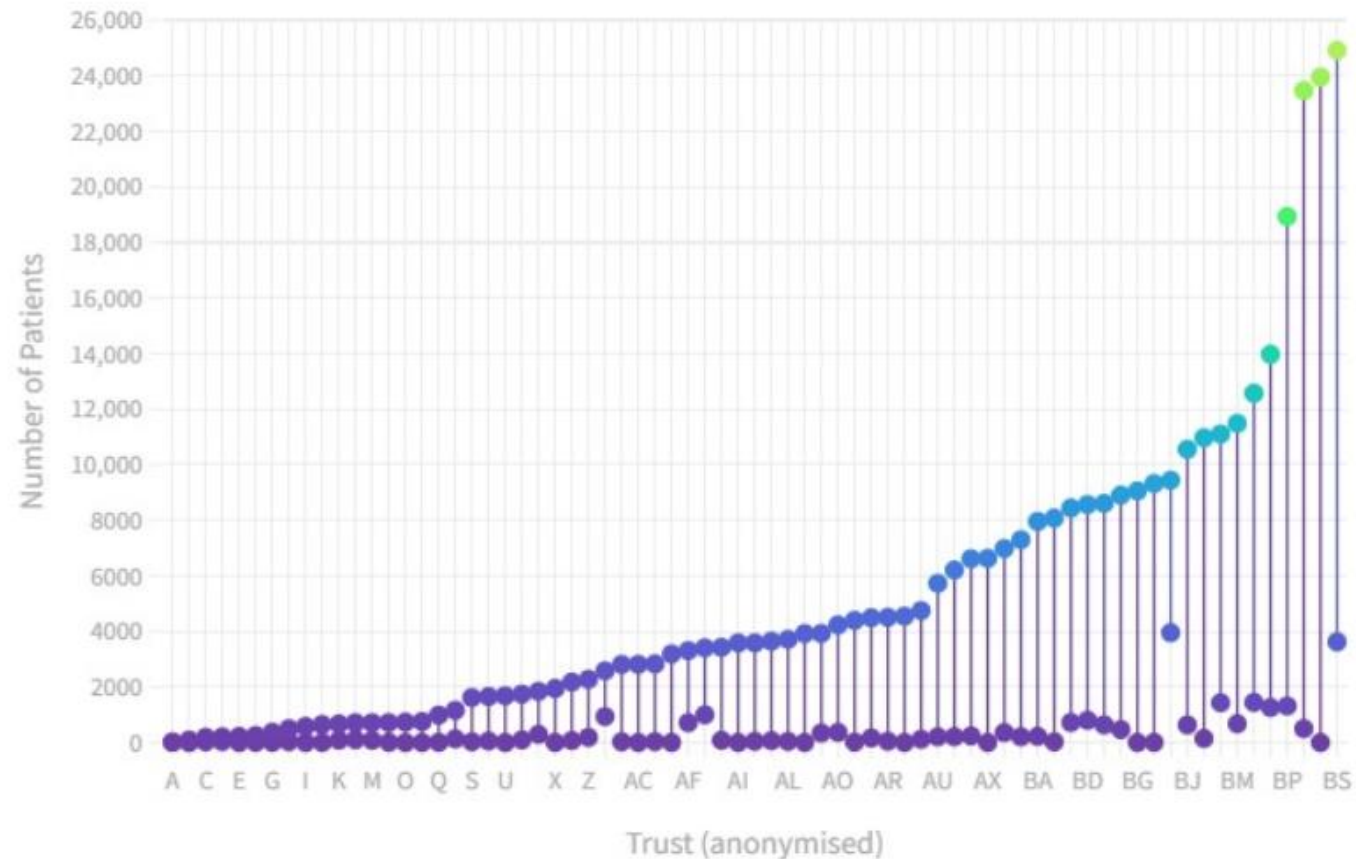
# 12-Hour DTA Waits Since 2019



## Comparison of 12 Hour Figures by Trust

2021 yearly aggregate of 12 Hour from Decision to Admit VS.  
12 Hour from Time of Arrival




DTA vs TOA 0 24,912



## The Tip of the 12 Hour Iceberg

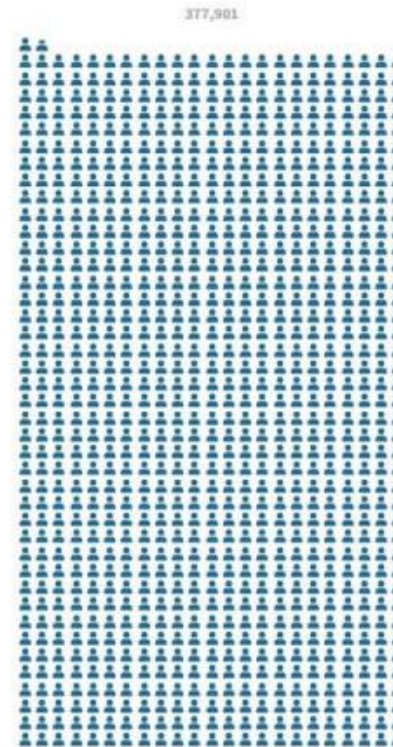
Patients waiting 12 hours from the decision to admit them to hospital, versus the number of patients waiting 12 hours from their time of arrival

Each Icon represents 400 patients who waited in an ED in 2021.

 = 400  12 hours from time of arrival  
 12 hours from decision to admit



12 hours from decision to admit



12 hours from time of arrival

**Most people do not plan an  
Emergency Department  
visit  
but  
everyone is a potential  
patient**





# The 10 point plan Sept 2021

Commitment	Assessment	Status
Supporting 999 and 111 services	This commitment was backed by £150 million funding to support 999 and 111. The time taken to answer NHS 111 calls was lower in the first three months of this year than the preceding three months and the proportion of calls abandoned also fell. However, this did not help to ease crowding in EDs. Ambulance response times continue to exceed national standards although in May only 387 patients waited 10 or more hours for hospital handover down from 700 in March 2022. There should be none over 60 mins.	
Supporting primary care and community health services to help manage the demand for UEC services	Capacity needs to be expanded to allow primary care to take ownership of unscheduled patients that do not require urgent or emergency treatment. The plan did not detail steps the NHS would take to expand capacity in the primary care service and the size of the GP workforce is falling. Community health teams have not been adequately supported as data published on urgent response services for April 2022 revealed huge regional variation in the number of referrals for a two-hour response.	
Supporting greater use of Urgent Treatment Centres	Attendances to UTCs increased when compared to winter 2020/21, however they were still well below pre-pandemic levels. Despite this, 4-hour performance declined, raising questions about the role and suitability of UTCs in increasing slack in the UEC system.	
Increasing support for Children and Young People	Although there has not been a significant increase in mental health presentations for children aged 5-14, young patients presenting to EDs with mental health concerns requiring admission continue to endure long stays in the inappropriate environment of a busy ED.	
Using communications to support the public to choose services wisely	There is no indication of whether the communication campaigns helped the public make informed decisions about where to access urgent and emergency care. Furthermore, even if patients were successfully informed, this does not mean that there are services available.	
Improving in-hospital flow and discharge	The plan failed to address and improve patient flow through hospitals. This winter, average bed occupancy stood at 91.9%, six percentage points higher than the year before. This winter also saw the highest numbers of long stay patients in hospital for seven, 14 and 21 days or more since winter 2017/18. There was a substantial increase in ambulance handover delays. By week 13 of the Winter Sit Reps, delays as a proportion of arrivals were 2.7 times higher than the previous year.	
Supporting adult and children's mental health needs.	Mental health patients continue to endure long stays in the ED. There is no transparency on whether commitments were met and no indication whether NHS England shared data with providers and ICS' on total attendances and 12 hour waits in ED for mental health patients. If this commitment was met, the data was not published. This was intended to bring transparency and identify systems with highest mental health pressures for the first time.	
Reviewing Infection Prevention and Control (IPC) measures to ensure a proportionate response.	Despite the plan outlining an expectation of no corridor care, in March 2022, NHS England reported the largest monthly increase on record for the number of 12-hour waits from decision to admit, with an increase of more than 6,000 from the 16,404 recorded in the previous month. Most IPC measures have now been removed, yet EDs continue to experience high instances of corridor care. Any future UEC strategy must tackle the root causes of crowding by eliminating exit block. High numbers of covid associated admissions is adding to staffing and capacity pressures.	
Ensuring a sustainable UEC workforce.	The Secretary of State's workforce plan is yet to be published, which presents a major barrier for UEC recovery, impacting staff morale and capacity in the system. Same Day Emergency Care (SDEC) can help to prevent unnecessary admissions and ease workload pressures on already strained staff. RCEM's November 2021 Snap Survey of Clinical Leads revealed only 10% had wide ranging SDEC in place for 12 hours a day, seven days a week. 81% of Trusts that responded had limited or no effective SDEC in their department.	

The 10 Point Action Plan has failed in its aims to mitigate against current pressures and improve performance in all settings. The plan itself acknowledged that full recovery of the UEC pathway "will take time and require actions



Emergency  
care in trouble

Patient Safety is compromised

# *NHSE CEO Amanda Pritchard speech*

- Frankly, the situation we see at the moment in emergency departments and ambulance services is as challenging as any winter before the pandemic. To those colleagues .....who are immersed in this every day, let me assure you... ..when you tell us about the immense pressure you are under, we hear you.
- April was the busiest ever for ambulance services in terms of calls and Category 1 incidents, and the second busiest for Accident and Emergency Departments.
- But demand isn't the whole story here.
- **The unacceptable rise in 12 hour waits for admission from A&E underlines that the issue is, as you know, flow.**
- **You can trace the line from delayed discharges... ..to A&E crowding... ..all the way through to slower ambulance response times.**



Community/  
Primary care

Prehospital  
carers/Paramedics

Emergency  
Medicine

Inpatient  
teams



Team EM and the future

Face up to  
the 12 hour  
data and act  
on it



This Photo by Unknown Author is licensed under [CC BY-SA](#)

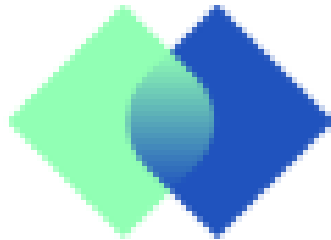




## The NHS Patient Flow Conference 2022



# UP NEXT...



# DNV Imatis



## The NHS Patient Flow Conference 2022



# SPEAKING NOW



Michael Fjelstad

Solution Consultant  
DNV Imatis AS

I will be  
discussing...  
“Case Study  
Haralds plass Diaconal  
Hospital”

# Haraldsplass – a Journey

Real-Time Clinical Operations Management

A “must” in every new hospital



Michael Fjeldstad

Product consultant DNV Imatis





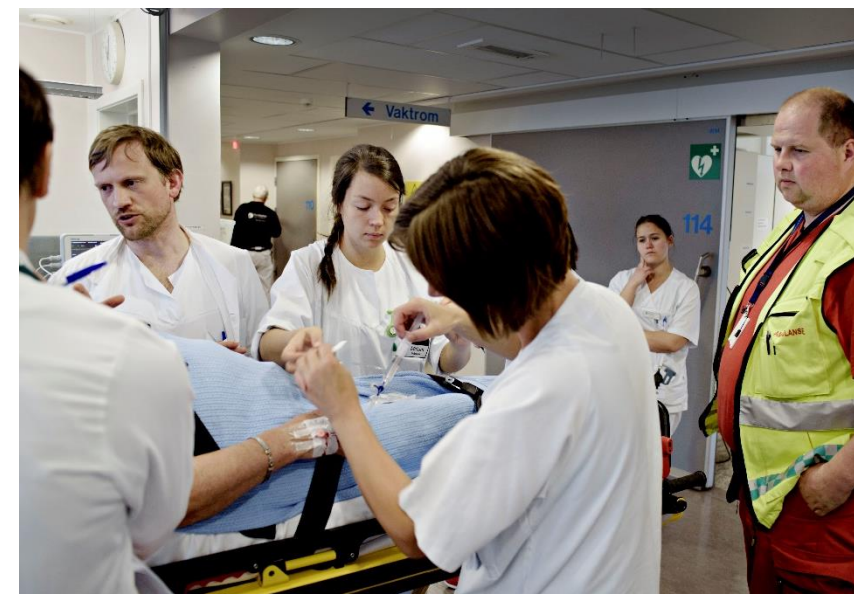
# About Haraldsplass Diaconal Hospital



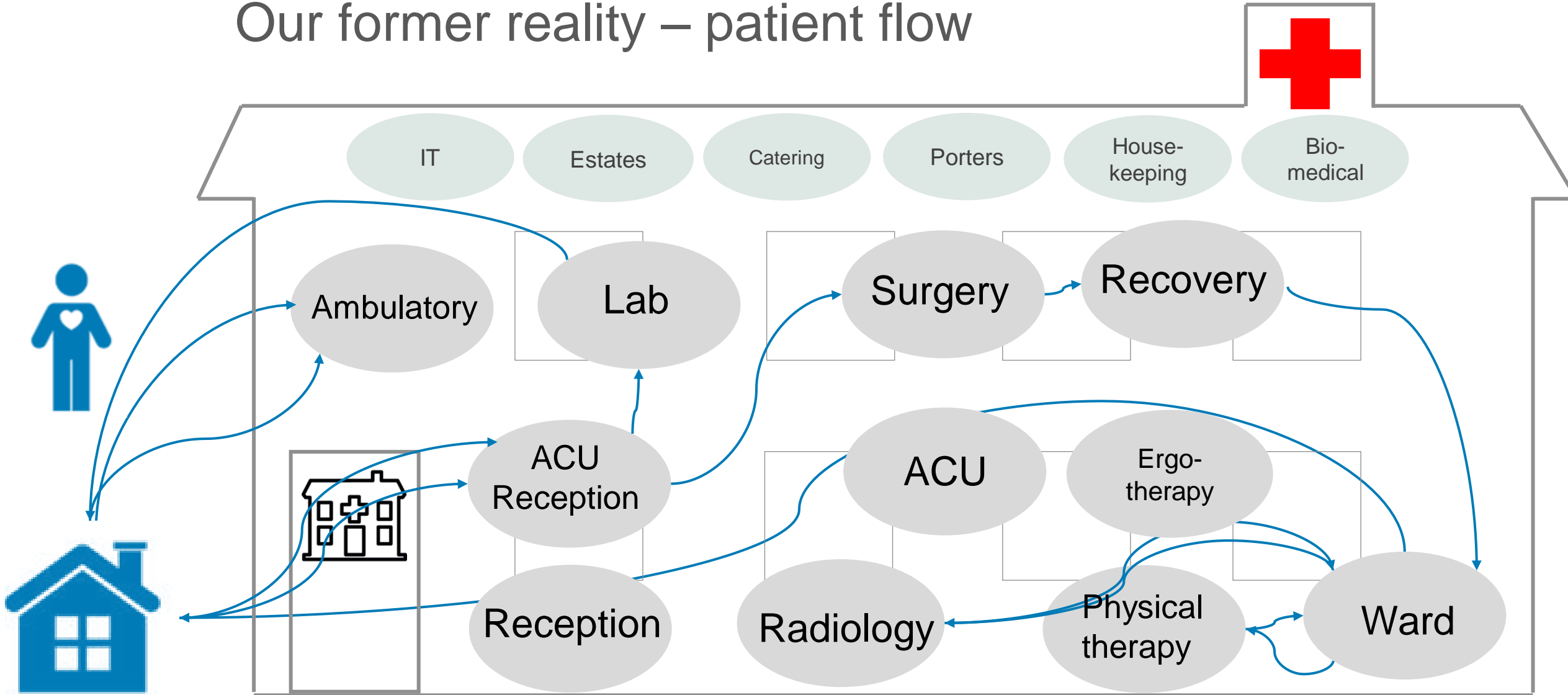
## Acute Care Hospital

- Internal medicine hospital for 145.000 inhabitants
- 1200 employees
- Part of region Helse Vest
- 33.000 employees
- High competence in advanced knee, shoulder and prosthetic surgery

100.000  
visits a  
year



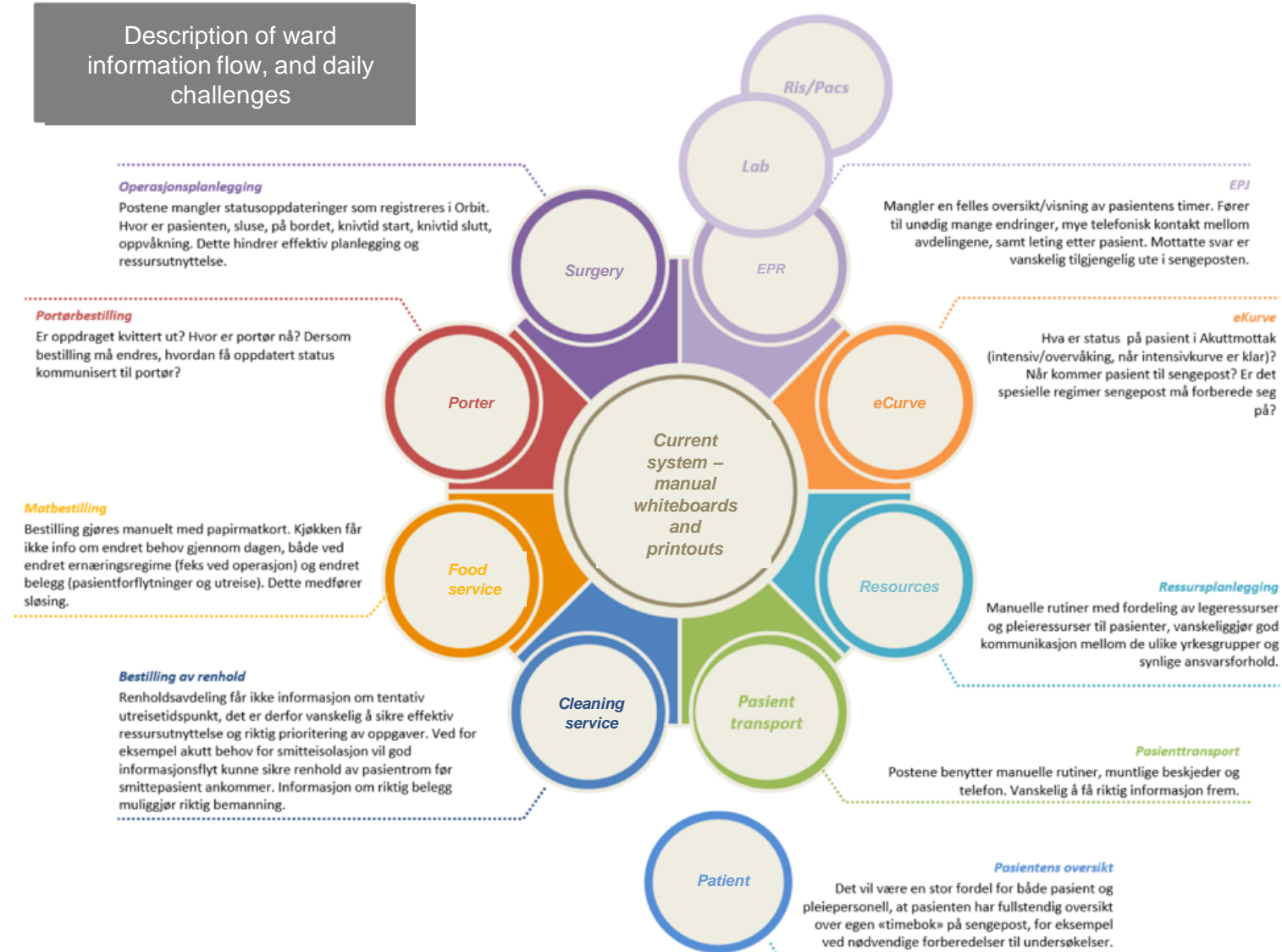
# Our former reality – patient flow





# Our former reality – systems in silos

- Many systems
- Manual workflows
- Time to obtain information
- Quest for resources (people, equipment)
- Time for coordination

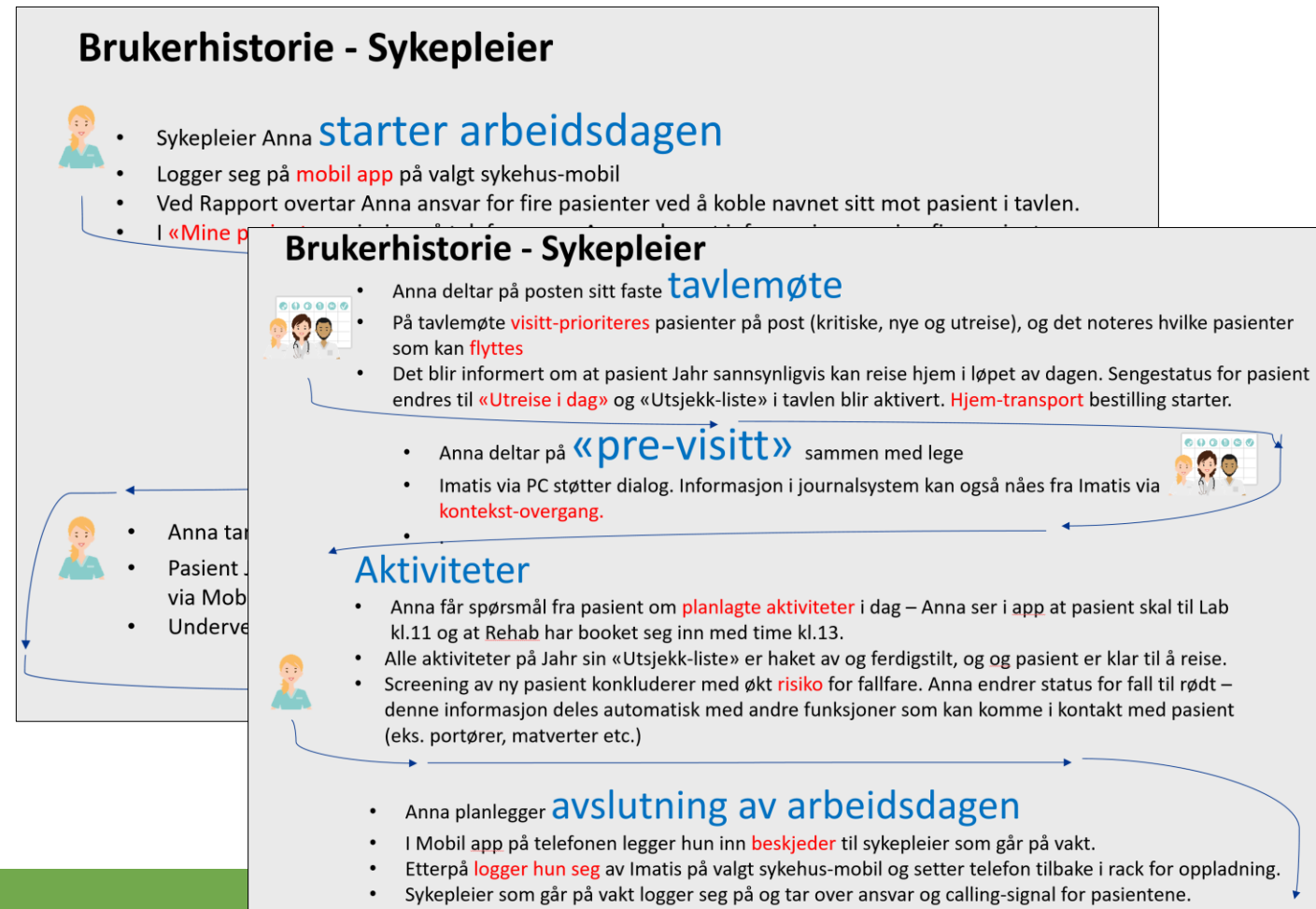


# How would we like it to be?



# How did we find out what we wanted?

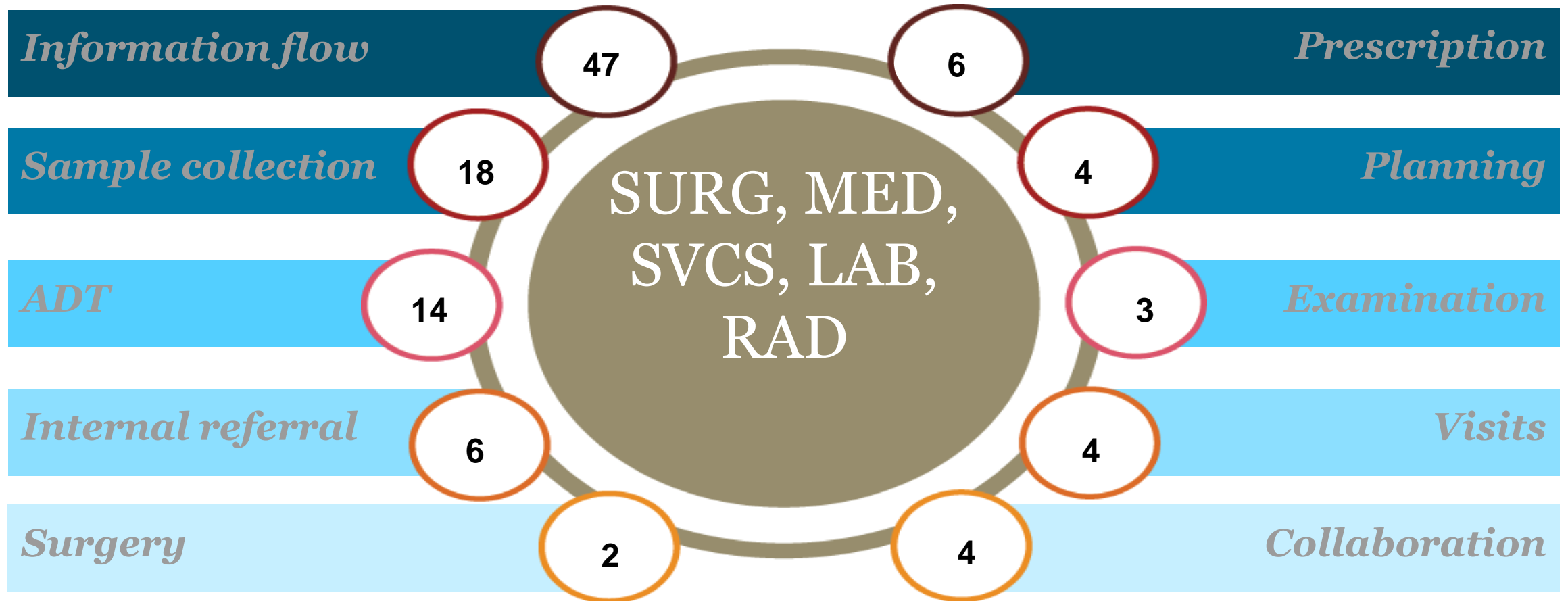
- We collected a lot of user stories (84 pages)
- How we work today and what is our “dream scenario”
- Met with all professional groups
- Observed how they work
- Documented



# How did we find out what we wanted?

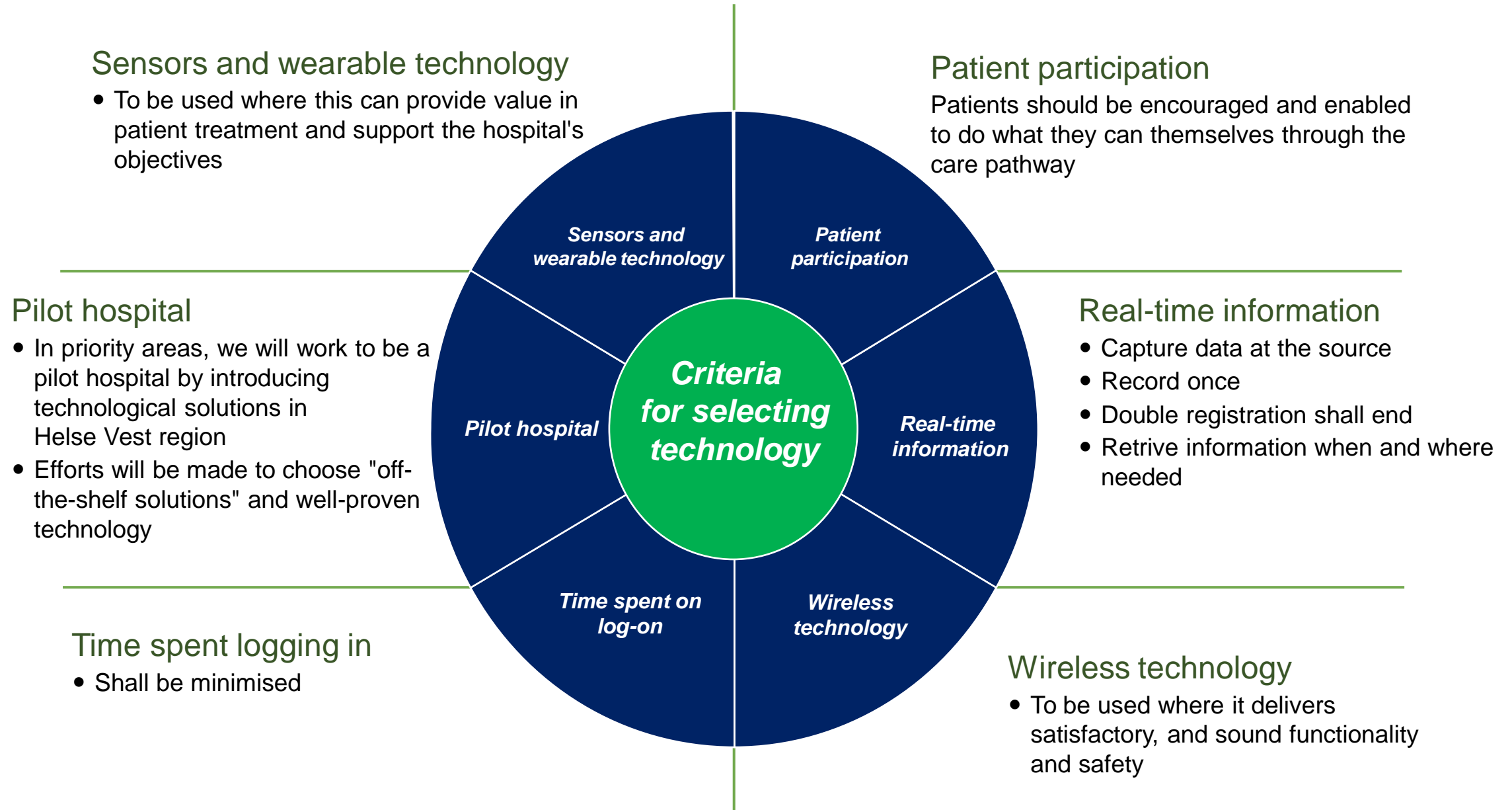
We looked at old, unsolved projects

We identified 104 issues that were unsolved





# Guidelines for technology selection





# Pre-requisite: We have built a new digital foundation...

- A mature **reliable WiFi** network throughout the hospital (also old in buildings)
- Fully developed **reliable wired network** throughout the hospital
- Prepared for “**electronic door signs**” at all patient rooms as well as TVs
- **Internal mobile network**, separate base stations from with a passive distribution network
- **600 iPhones** have largely replaced DECT, landlines and calling
- Prepared for **nursecall** via DNV Imatis (Silent hospital)
- **Regional pilot** hospital for management of patient flow and resources in HV



# What does it take to succeed?

- A **management** team that wholeheartedly support the project
- Establish and communicate **clear goals** at the organization level, why do we do this change in the hospital
- Strong management **commitment** at all levels is crucial to ensure a good implementation
- **Composition** of project team, access to good interdisciplinary competence in the project team both with healthcare and technology professionals
- **Enough resources** for good project implementation
- Good **collaboration** with all the participants
- *Understand that **changing** working methods and processes takes time*

# Most important success factor: Commitment, find the 2%

---

*“Departments introduced the new system before we expected because they wanted it and saw the value it brings”*

- Petter Thornam quality director Haraldsplass  
Diaonale Hospital

---

**Medisin** DAGENS Nyheter Debatt Pharma DM Arena



NYE SMARTTAVLER: Avdelingsleder Elisabeth Mjos og lege Alf-Olav Haukelid kan lettere dele informasjon med den nye samhandlingstavlen.

SPECIALISTHELSETJENESTE

## Slik jobber de på nye Haraldsplass sykehus

Smarttelefoner til alle, storskjermer med samtidsdeling av informasjon og moderne legemiddeltraller har skapt en ny hverdag for de ansatte ved Haraldsplass diaonale sykehus.

Publisert: 2019-09-09 06.00  
Målfrid Bordvik  
[malfred.bordvik@dagensmedisin.no](mailto:malfred.bordvik@dagensmedisin.no)

Del:  Del 536  Tweet  Share  Mail  Skriv ut

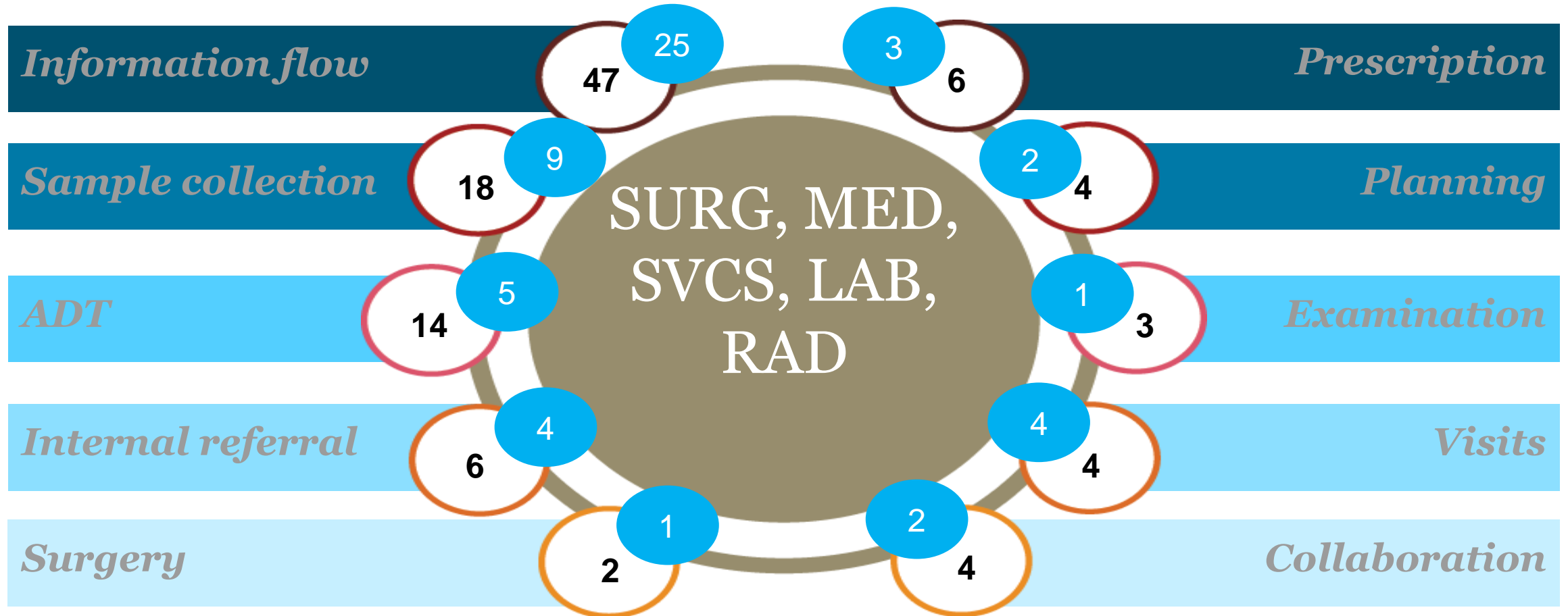
Leading Norwegian medical publication

# What have we accomplished?





DNV Imatis solves 56 of the 104 identified issues without any customisation





## Patient flow mngt

**Patient –  
where to?**

**Is sample collected?**

**Is the porter ordered?**

**Patient day  
schedule**

**Where is the patient?**

**Is a patient being examined?**

**Plan for the stay?**

**Is the x-ray taken?**

**Resource management**

**Who is the responsible support resource?**

**Who is the responsible nurse?**

**Which nurse is available**

**Which doctors are available**

**Who is the treating physician**

## Notifications

**Waiting for  
lab results**

**Nurse call**

Calling

**Motion  
detection**

**Critical alerts**

**Waiting for imaging results**

## Patient safety

**Triage**  
**1 2 3**

**Safe surgery**

**In safe  
hands 24/7**

**Treatment plan**

**Patient pathway**

DNV Imatis' solution involves, the right information for the right person at the right time...



**Emergency**

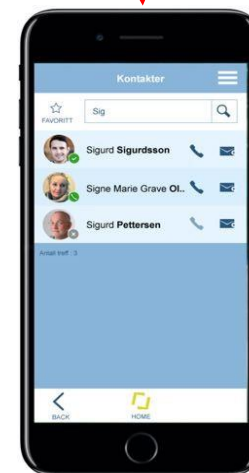
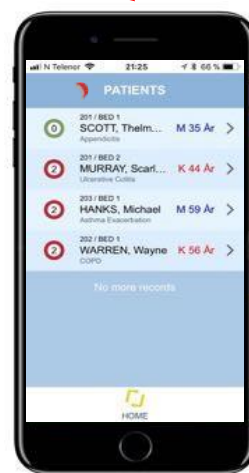
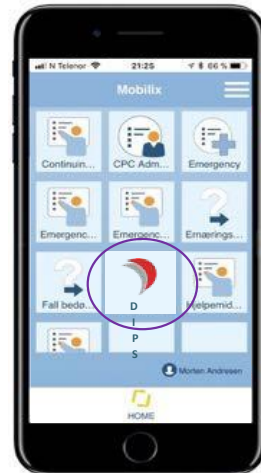
The interface displays a waiting room area at the top where several patients are standing. Each patient has a nameplate indicating their role (e.g., Nurse, Receptionist) and name. Below this is a navigation bar with tabs: Arriving, My patients, Home, Injury, Reception, Surgery, Order status, Call. To the right of the tabs is a toolbar with various icons representing different medical actions or equipment.

Patient In Arrival	Room	Room status	Patient Info Patient	Gender/Age	Visual Hx Triage	Note	Problem	Plan	Orderly	Order status	Waiting for	Time of fasten	Duration fasting	Time of surgery
[Clock Icon]	07:34	Injury 12	Occupied	Ethen ...	M / 40	2		Liver fail Dehydration	[Medicine Icons]	[Green Arrow Up]				
[Clock Icon]	06:54	Reception 15	Occupied	Fred ...	M / 58	1	Hard of hearing	Bleeding	[First Aid Kit Icon] Plaster dr	[Green Arrow Up]				
[Clock Icon]	07:31	Reception 16	Needs cl	Bianca ...	F / 49	1		Diarrhea	Venous nee	[Green Arrow Up]				
[Clock Icon]		Reception 17	Available			2		Allergic r	MED. Care	[Green Arrow Up]				
[Clock Icon]	07:43	Reception 18	Occupied	Gina ...	F / 37	4		Diarrhea		[Green Arrow Up]	00:04:54 ...			
[Clock Icon]		Reception 19	Available							[Green Arrow Up]				
[Clock Icon]	07:28	Reception 20	Occupied	Dan Dean	M / 65	5				[Green Arrow Up]				
[Clock Icon]		Injury 13	Occupied	Susan ...	F / 82	4				[Green Arrow Up]				
[Clock Icon]		Injury 14	Needs cl							[Green Arrow Up]				

# Seamless connection on all platforms

- **See** who is the responsible resource
- **Call** directly to the responsible resource
- **Send** a message directly to responsible resource
- Get **alerts** on "my" patients
- Simple **registrations** on the "move"
- **Find** the patient, regardless of department

SIG	ANKOMST	RUM	NÄRVÄRD	RUMSTATUS	NAMN	KÖN/ÅLDER	PATIENT INFO	INFECTIO	NEWS	NEWS-TID	PROBLEM/DIAGNOS	PLAN	LAB OCH RTG	ADL	VAS	FALLA RL	ERN	RESPONSIBLE N
15.06 0...	A-01	Upptagen	Allan Väs...	M 53					12	27693...	Höft	Kiru Höft			5			Nurse2
15.06 0...	A-02	Upptagen	Anna Johans...	K 21					0	17638...	Frak	Exle		13/40	1	0	3	
05.06 1...	A-03	Upptagen	Maria Karlsson	K 33					20	68093...	Symp	Trea		10/40	2	0	0	Jon Hansen
16.06 0...	A-04	Upptagen	Per Nilsson	M 95					8	28962...	Oste	Höft		37/40		5	5	
11.06 1...	A-05	Upptagen	Nils Olsson	M 87					5	17726...	Symp			19/40	5	2	3	Jon Hansen
02.06 2...	A-06	Upptagen	Lennart Gust...	M 32					8	17684...	Mele	Surg		30/40	3	0	0	
07.06 1...	A-07	Upptagen	Linnéa Hanss...	K 86					18	17776...	Diab Symp	Trea		40/40	10	5	3	
12.06 0...	A-08	Upptagen	Bo Henriksson	M 17					0		Diab	Care		10/40	0	0	1	John Arne S...
12.06 0...	B-01	Upptagen	Inger Petersson	K 87					1	17776...	Mele Ultr	Care		20/40	3	0	3	
08.06 1...	B-02	Upptagen	Emma Jansson	K 86					5	17684...	Symp	Trea		13/40	2	3	3	Nurse2
02.06 2...	B-03	Upptagen	Sven Jönsson	M 32					3	17640...	Symp	Anae			4	1	0	Dr 2
10.06 1...	B-04	Upptagen	Johanna Lind...	K 79					2	17640...	Symp	Ther		10/40		0	1	Björn Olav N...
09.06 1...	B-05	Upptagen	Olof Carlsson	M 6					6	17640...	Symp	Surg		19/40	8	0	2	Björn Olav N...





979735 Owa 979736 Marita  
979737 - Marita 979732 - Leineidi

Sengepost - MED 3, alle seksjoner

Seng	Pasient	Fødselsdato	Indtatt	Merkead	Ekstramerkead 1	Ekstramerkead 2	Planlagt PLO-kon
H329-1			08.05.19	A: Retur cat cor, ingen stenter TD: parkinson, ryggsmerte, knesmerter, DVT 06, LE 07 Vegv fortandning	Kost: SSS Mob: Lett	Mai x 2 EKG kl 08	
H330-1			04.05.19	A: PM 3/5 → retur, blødning, tackyard T: PAF, hj svikt EF 38%, gjennomgått paranoisk psykose, ++ Blødd i øyen i nær	Kost:NO HTS Mob: Lett	Depressa defibr x3/ RESP - Mai x 2 BLT 8/5 TELE Obs operasjonsmr - blødning Henvist vurdering til ablasjon Sep steng 16/57 TM 5/5 - Økt hjelp	08.05.2 BERGE N KOMM UNE
H333-1			04.05.19	A: Tungpust, pleuravæske, full og sm. korstrygge - Owa Mor T: res. astilb. op. protease ha. hofte + kne, H, tumor i medhastinum, to KY contin hj. svikt, demens, STELL	Kost:NO FS2 Mob: Ja	HJ/RESP - Mai x 4 BLT 8/5 IL 02 D/ Dui + friser 8/5/7 Pleuradren h. side, skylle per vakt Daglig stell skr begerer skiver TM 4/5 - Sekt KTO 6/5 1600 ml	10.05.2 BERGE N KOMM UNE
H333-2			07.05.19	A: Tungpust, svimmel. Retur cat cor m/åpne kar. TnT forhøyet TD: Prolap, eller frisk	Kost:NO B39 SSS Mob: Ja	Mai x 2 Henv MR cor Ingen plom	09.05.2 BERGE N KOMM UNE
H334-1			06.05.19	A: STEMI 4/5 - PCI mot LAD - 6 stenter TD: migrene, skoliose, TUR-P Skrease, RCA	Kost:NO HTS Mob: Ja	Mai x 2 BLT 8/5 Henv ekko TM 7/5 - uendra (omsorgsbolig)	09.05.2 ØSTER ØY KOMM UNE
H335A			07.05.19	A: Elektiv innlegelse for ekko og AEKG TD: HT, refluksplager, paroisasirtutt, PCI mot RCA -16, ACB Jan-19, Bism i akt. sluke	Kost: 1 SSS Mob: Lett	Mai x 4 Henv ekko + AEKG BLT + TVF 8/5 - HSE?	08.05.2 BERGE N KOMM UNE
H336A			03.05.19	A: Skal kontrollere PM, dysuri TD: PAF, 2 kammer PM 12 pga total AV blokk type electronic jensia. Testa sist jan 19, gjennomgått levetid estimert 3 a. Lupus sym. 2015-16	Kost:1 B32 HTS Mob: Ja	Mai x 2 Fallfare Blærescann, SIK v/behov Henv PM inter 07.05.2 LINDA TM 4/5 - Ny braker, sekt KTO 4/5 0 msc 05-06-09 Mai x 4 VEK? Ny BLT 8/5 Henv ekko Ingen plom - R? R? Hjertesvikt MHA x 2 Inb x 4 1 L i kvile, 2 i aktivitet (har med egen LTOT) TM 2/5 - uendra - R? Tavi R?	08.05.2 BERGE N KOMM UNE
H339-1			30.04.19	A: STEMI, PCI CX x 2, AF + LØ 244, MI gr 4, UVI TD: Polymyalgia reumatika, ulcerus kolit, HK Olt Pskul med	Kost:1 B24 SSS Mob: Ja	Mai x 4 VEK? Ny BLT 8/5 Henv ekko Ingen plom - R? R? Hjertesvikt MHA x 2 Inb x 4 1 L i kvile, 2 i aktivitet (har med egen LTOT) TM 2/5 - uendra - R? Tavi R?	08.05.2 BERGE N KOMM UNE
H339-2			03.05.19	A: KOLS ex TD: KOLS (LTOT-braker), AF, polynepvapt, mild OSA3, SYSTEM 16, HT, HK, hiatushernie, barrets esofagus, divertikulitt, hørsidig hemicoletoni 16, osteoporose, cerebralt infarkt 17.	Kost:1 B27 TIS Mob: Ja	Mai x 2 BLT 8/5 Henv ekko Ingen plom - R? Tavi R?	08.05.2 BERGE N KOMM UNE
H340-1			07.05.19	A: Angina pectoris - retur cat cor 7/5, langstrakt sykdom i LAD TD: Hjertefinf. -88, hjertestans x 2 -13, refluks, AF, AF, hjertesvikt, trombe a. brachialis h. -13., femurfraktur -15	Kost:NO HTS Mob: Ja	Mai x 2 TELE BLT 8/5 1 SAG 8/5 TM 2/5 Blut Mai x 4 TELE EKG 8/5 BLT + TVF 8/5 Innsett EKG fra legeskontor 8/5 Plom? Benkt ved, henv. koronarangiografi LSE 70-73 9t 0,49	08.05.2 BERGE N KOMM UNE

Dato: 08.05.2019  
Side: 1



From paper and manual whiteboards ...

...to real-time information sharing



imatis

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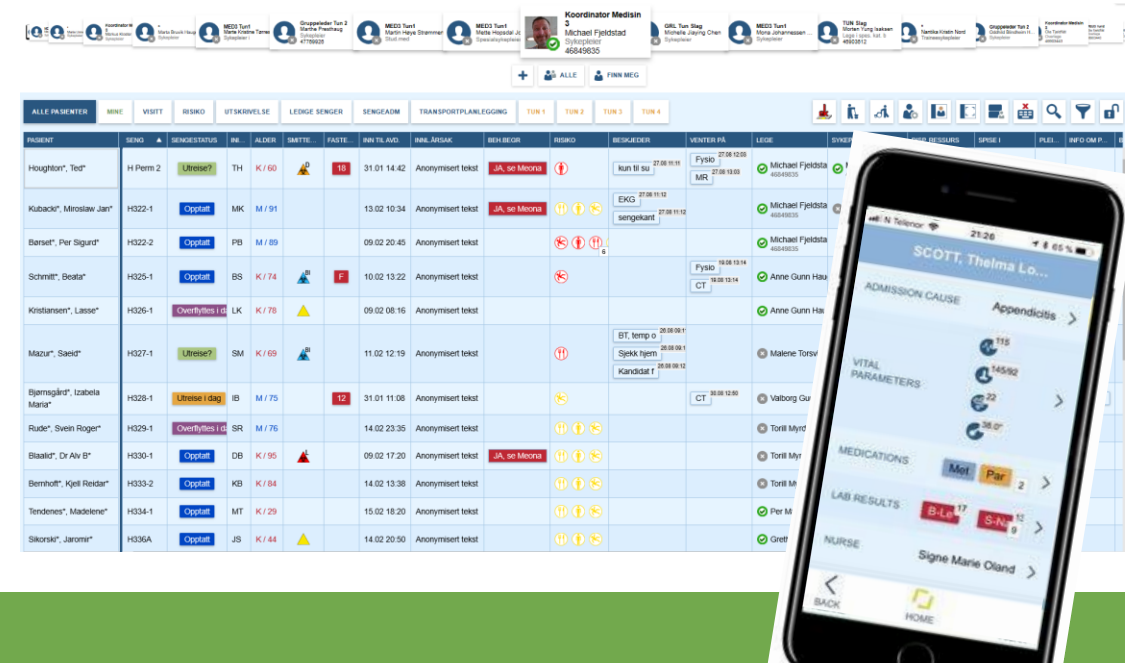
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# Digital WB

- Real-time overview
- Overall display of important information
- Regardless of platform  
(touch screen / PC / tablet / mobile)
- Adapted needs for each ward based on a template
- Context transition to the EPR
- Anonymous



# Cleaning services

- Complete, automated cleaning solution
- Closed loop
- The cleaner logs onto a mobile device
- Priority rooms are cleaned first
- Avoid washing rooms before discharge
- Know about infection regimen and whether the patient is "dangerous"



**imatis**

HDS Beleggsversikt x HDS Medisin 3 x HDS Resepsjon x HDS Porter oppdragsversikt x **HDS Renhold faste oppdrag x**

ALLE GJENSTÅR I DAG ALLE I DAG **ALLE UTFØRT I DAG** ADMIN OMRÅDE: H4 FØLGES OPP

R. ▲	ROM	▲ 2 ROM BESKR.	SENGETATUS	SMITTEREGIME	KVITT.	RENHOLDPLAN	SIST RENGJ.	NESTE RENGJ.	INFO. OM...
H4	H Korr-1	Seng	Opplatt		✓	7 d/u	05.08 14:24	09.08	
H4	H416-1	Seng	Opplatt		✓	7 d/u	06.08 07:10	09.08	
H4	H419-1	Seng	Opplatt		✓	7 d/u	06.08 07:10	09.08	
H4	H420A	Seng	Opplatt		✓	7 d/u	06.08 07:09	09.08	
H4	H422-1	Seng	Opplatt			7 d/u	23.08 10:37	24.08	
H4	H422-2	Seng	Opplatt			7 d/u	23.08 10:37	24.08	
H4	H425-1	1-seng	Opplatt			7 d/u	05.08 12:58	06.08	
H4	H426-1	1-seng	Opplatt			7 d/u	06.08 07:09	07.08	
H4	H427-1	1-seng	Opplatt			7 d/u	06.08 11:49	07.08	
H4	H428-1	1-seng	Opplatt			7 d/u	06.08 12:03	07.08	
H4	H430-1	1-seng	Opplatt			7 d/u	05.08 12:37	06.08	
H4	H433-1	Seng	Opplatt			7 d/u	05.08 07:14	06.08	



# Porters

- Complete automated information
- Able to “turn the trip” with a few taps
- Porters receives information about infection status and fall risk
- Nurses have real-time overview



<div> <div>ALLE (SISTE 24T)</div> <div>BESTILT</div> <div>PÅGÅR</div> <div>UTFØRT (SISTE 24T)</div> </div>							
EN...	TIDSPU...	KATEG...	STATUS	PRIORITET	SMITTE...	FRA	TIL
	04.09 10:38	Pasient	Utført	Normal		Medisinsk klinikk\Medisin 3\H325-1 (1-seng)	Fagavdeling
	04.09 10:16	Pasient	Utført	Normal		Medisinsk klinikk\Medisin 3\H322\H322-2 (1,5-seng)	Bygglokasjoner
	04.09 10:13	Pasient	Utført	Normal		Medisinsk klinikk\Medisin 3\H Perm\H Perm 2 (Permisjonsseng)	Fagavdeling

## “Waiting on”, plan for the day

- Wards request required support services
- Support services generate "plan for the day" (X-ray, PT, OT, speech therapist, outpatient clinics, etc.)
- Radiology department can advise and give an appointment faster (no need to call)
- Easier to schedule inspections
- Fewer “road trips”
- Easier to inform the patient at "bedside" about the plan for the day



ALLE PASIENTER									
	OBS	POSTOP	MED 5	AKUTT	MINT-HDS	MOTPOST	ORT-HDS	MED 1	KIR-HDS
TEKN POST	POST	TEAM	SENG	SENGEST...	INITIALER	ALDER	SMITTEREGIME	INFO OM P...	SYKEPLEIER
	MED 2	Tun-4	H255-2	Opplatt	HY	M / 80			✕ Astrid Ali
	MED 2	Tun-4	H256-1	Opplatt	JL	M / 59			✕ Astrid Ali
	MED 2	Tun-4	H256-2	Utreise i...	HK	M / 80			✕ Astrid Ali
	MED 3	Tun.1	H316-1	Opplatt	BA	K / 89			
	MED 3	Tun.1	H316-2	Opplatt	TB	K / 78			
	MED 3	Tun.1	H319-1	Opplatt	TS	M / 72			✕ Mona Joh
	MED 3	Tun.1	H319-2	Opplatt	HF	M / 85			✕ Mona Joh
	MED 3	Tun.1	H320A	Opplatt	KS	K / 82			

VENTER PÅ	
Fysio	04.09 10:30
CT	28.08 12:35
OT	04.09 10:15
Fysio	04.09 09:30
OT	04.09 09:45
Fysio	04.09 09:45
Speech	04.09 12:00

# Anonymous reception view

- For the main reception
- For floor reception
  - Search for patient by name
  - Shows where the patient is
  - Who is responsible
  - If transport has been ordered
  - Important during Covid



IKKE OFFLINE	INITIALER	ALDER	POST	TEAM	SENG	BESTILL	BESTILLINGSST	SYKEPLEIER	LEGE	TRANSPORT
	KS	M / 95	ORT-HDS	Tun4	H453A ISO					
	JB	M / 73	MED 5		A623-1 (2)					
	KT	M / 53	KIR-HDS		Uten					
	EA	K / 88	MED 2	Tun-4	H255-3			Marius Østenstad Tønning		
	JS	K / 44	MED 3	Tun.2	H336A			Per Martin Christian Stråth	Grethe Vee Hagestuen	
					H170-2					
	MD	M / 75	MED 5	Slag	A621-2 (2)					
	AH	K / 8	ORT-HDS		Uten					
	SD	M / 34	MOTPOST		Uten					
	KS	K / 41	MED 2	Tun-1	H227-1			Trine Westbye Stråps		
	LR	M / 69	MED 5	Slag	A631-2 (2)					
	MB	K / 25	ORT-HDS		H Perm 2					
	CB	K / 92	MED 2	Tun-1	H220A			Malin Grov Nygård		
⊘	DH	M / 52	AKUTT		H158					
	DN	M / 87	MED 5	Ger...	Uten					
	LS	K / 96	MED 3	Tun.2	H339-2			Gro Engesæet 47905017	Anniken Midtvik Thorstensen	
	MK	M / 91	MED 3	Tun 1	H322-1			Malene Torsvik	Michael Fjeldstad 46849035	

# 4 times as many patients

in an orthopedic outpatient clinic

## **Before the change:**

- Long queues (<2500 patients)
- Great frustration
- High sickness absence
- Angry patients
- Poor collaboration between professional groups

## **After a new flow via DNV Imatis:**

- 4 times as many patients every day
- The queues eliminated
- Declining sickness absence
- Patients come to the appointment quickly
- Major change in collaboration between professional groups



# How we did it:

4 Physical therapists

1 Orthopedic doctor

1 Nurse

Automated messages have been set up about who and what to do



The screenshot shows a mobile app interface with a header "123 ABC TO ORTHOPEDIC". Below the header, a yellow bar displays "PASIENT" followed by a redacted name. A list of tasks is shown with blue square icons: "Assessment", "Preparation for injection to the right", "Preparation for injection to the left", "Ready for injection assessment clinic", "Ready for injection orthopedic 1", and "Prepared for injection orthopedic 2". At the bottom, there are two buttons: "FJERN" and "AVBRYT".



- + Flow automation
- + No need to look for each other
- + More time for the patient
- + Simplification of work process

Success factor:  
Committed users who clearly convey what is the best flow

# Admitting patients from A&E to the ward

imatis												
HDS Akuttmottak x												
ALLE PASIENTER MINE KOORDINERING												
BYTT SENG	PASIENT	AVD.	SMITTE...	INFO OM PAS.	INNLEÅRSÅK	BESTILLING	BESTILLINGSS...	SPL. AKUTTMOTTAK	LEGE	PRI MELDTE PAS	MELDT POST	PLANLAGT SENG
H156	Telokk, Gry (Testp)	MED-HDS			Imatis			Michael Fjelds... 46834739		Må flyttes umiddelbart	Kirurgisk	
H166-1		MED-HDS			Angina pectoris			Lisa Mari Lund... 46903625				
H166-5		KIR-HDS			Post opr. kompl. galle			Lill Kathrine H... 46903498				

We notify the ward about A&E patients' admissions via DNV Imatis

- Automated process:
- Who should report
- What information to share
- Who receives the confirmation in admissions
- Only by 1 touch

123  
ABC

PRI MELDTE PAS

PASIENT: TELOKK, GRY (TESTP)

Must be moved immediately, medically justified

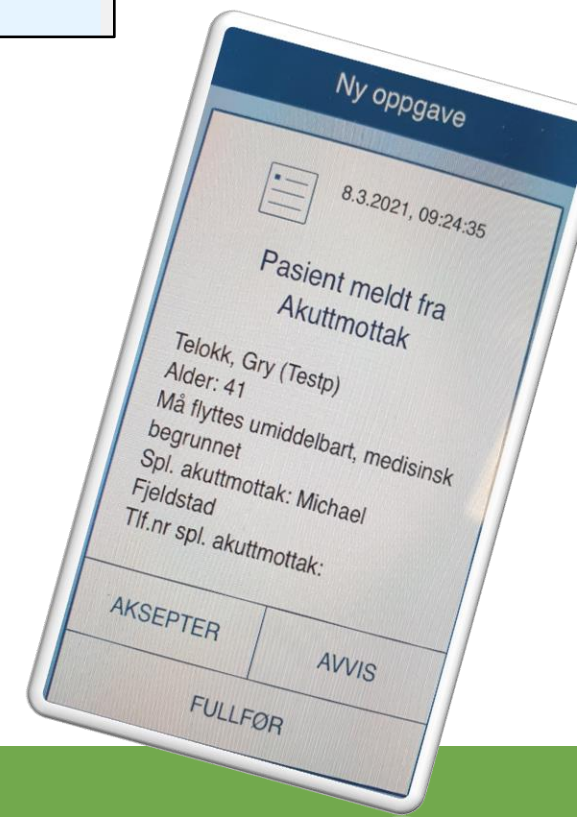
Transfer is urgent due to occupancy

Resolved, will be transferred soon

Receiving ward ready for transfer

FJERN

AVBRYT



# Food ordering in DNV Imatis

- Digital food cards
- Separate view for nurse, dietitian and kitchen
- Enter food requests in Mobilix “bedside”
- Always updated food wishes
- Significantly reduced food waste



22.07.2021								Dinner overview								12:48								
Post	Meny 1	Meny 2	Meny 3	Meny 4	Meny 5	Meny 6	Meny 7	Meny 8 diett	Meny 9 diett	Meny 10 diett	Meny 11 diett	Meny 12 diett	Meny 13 puré	Meny 14 puré	Meny 15 puré	Meny 16 puré	Meny 17 kraft	Meny 18 kraft	Meny 19 kraft	Meny 20 kraft	Dessert 1	Dessert 2	Dessert 3	Dessert 4
Kir/Ort	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Obs / Med 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Med 2	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Med 3	4	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	1
MIPO / Med 5	1	1	1	1	2	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2	4	0	2

imatis

Dorthe Rasmussen  
Administration | My Organization

Post kortnavn + Post fullt navn x Kjøkken x Module Administration x

HJERTE- OG LUNGEPOSTKIRURGISK SENGEPOST GGENERELL MEDISINSK SENGEPOSTNORMALKOSTDIABETESKOSTEKSTRA BESTILLINGER

ALLE KOSTFORMER

POST	TEKNI...	SENG	SENG STATUS	T	TYPE OP...	PASIENT	KJØNN...	S...	RISIKO	KOST	MENY	Ekstra bestilling	SPISE I	MA...	INFO
KIR G		A303-3 (3)	Opplatt	I	Heldøgn	Gry Amund...	F / 97		<div><div></div><div></div><div></div></div>	Diabet	<div>Meny 1</div> <div>Meny 2</div>	<div>Meny 1</div> <div>19.02 11:21</div>	Sykerom	<div>✓</div>	D...
KIR G		B202	Utreise	I	Heldøgn	Jan Anders...	M / 88		<div><div></div><div></div><div></div></div>	<div>F</div> <div>Diabet</div> <div>Nøtter</div>	<div>Meny 4</div>	<div>Meny 1</div> <div>19.02 11:26</div>		<div>✓</div>	
GEA/SLA		A305-1 (3)	Opplatt	I	Heldøgn	Håkon Brevik	M / 60		<div><div></div><div></div><div></div></div>	<div>F</div> <div>Normal</div>	<div>Meny 3</div>				
GEA/SLA		A305-2 (2)	Renh. besti...	I		James Sa...	M / 87			Diabet	<div>Meny 2</div>		Sykerom		
			Renh. besti...							Melkep					
HJ/LUNGE		B102	Utreise?	I		Ditte Rasm...	F / 66			Gluten	<div>Meny 6</div>				

# Overall occupancy overview HDS

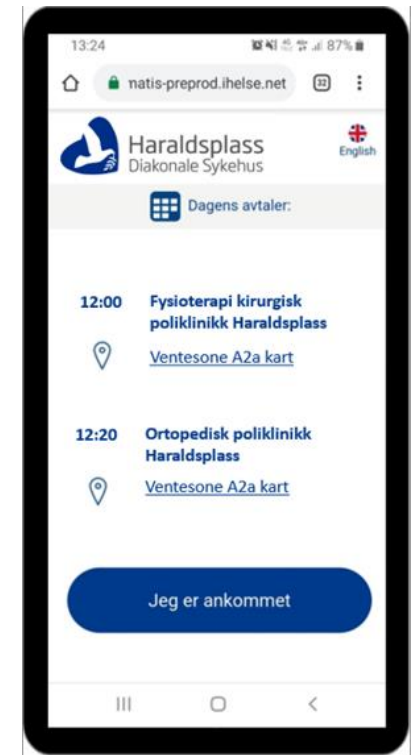
03.11.2021			Occupancy overview			10:16	
Ward	No. pat. (w/o leave)	Patients on leave	Discharge?	Discharge today	Transfer patients	Suspected pandemic	Confirmed pandemic
Akuttmottak Med	7	0	0	0	0	2	0
Akuttmottak Kir/Ort	4	0	0	0	0	1	0
Observasjon (10)	11	0	0	3	0	0	0
Med 1 (5)	5	0	0	0	0	0	0
Med 2 (31)	32	0	2	0	0	0	2
Med 3 (29)	31	0	11	0	0	0	0
Med 5 (24)	24	0	5	0	0	0	0
Intensiv (6)	3	0	0	0	0	0	1
Preoperativ (KODA)	1	0	0	0	0	0	0
Postoperativ Kir/Ort	6	0	0	0	0	0	0
Kirurgisk (20/15)	14	0	0	1	0	0	0
Ortopedisk (17/10)	17	0	3	2	0	0	0
<b>Totalt</b>	<b>153</b>	<b>0</b>	<b>21</b>	<b>6</b>	<b>0</b>	<b>3</b>	<b>3</b>

- Staff planning
- Patient flow planning
- Overview of Covid 19 patients
- Used by
  - Directors
  - Managers
  - Coordinators
  - Nurses
  - etc.



# DNV Imatis - out patient

- Fully automated flow for outpatient patients through the hospital.
- The patient is notified one hour before arrival, with information on where he is going.
- The patient can choose whether they want to check in by phone or vending machine.
- In the waiting zones, there are anonymous waiting room boards that display your reference number for the day.
- When it's your turn, you will receive a message on your phone and on the waiting room screen about which room you are going to





# What would we do differently?

## Lessons learned

- We think we chose the right implementation strategy → **step-by-step implementation**
- BUT with step-by-step implementation **it is not possible to have full effect right away**
- We **underestimated the information needs**: What does the hospital want with this?
- Especially important in relation to the experience of benefit and gain: Gains are often asymmetrical and indirect, i.e., that someone must do something for others to gain
- **Too much** information on the boards at the beginning → in a pilot everyone wants everything. It is important to test and adjust, before expanding



# What we have: Committed employees!



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All other use must be credited to Haraldsplass Diakonale Sykehus "





# Slido

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Wednesday 6<sup>th</sup> July 2022- 2022- 08:00am – 15:30pm – Hatfield's Conference Centre  
Conference hosted by Convenzis Group Limited



# The NHS Patient Flow Conference 2022:



## Q&A Panel



**Michael Fjeldstad**

Solution Consultant  
DNV Imatis AS



**Dr Katherine Henderson**

President of the Royal College  
of Emergency Medicine



**Jyothi Nippani**

National Clinical Lead  
NHHE/I Emergency &  
Elective Improvement



**Jenny Keane**

Director for Hospital  
Discharge & Community  
Rehabilitation



## The NHS Patient Flow Conference 2022



# MORNING BREAK, NETWORKING & REFRESHMENTS



## The NHS Patient Flow Conference 2022



# Chair Morning Reflection



Douglas  
Hamandishe

“Alcidion Clinical Consultant  
and Broadcaster – Centric  
Health Media”





# The NHS Patient Flow Conference 2022



## UP NEXT...



**CATALYST** **BI**  
BRINGING PEOPLE AND DATA TOGETHER



## The NHS Patient Flow Conference 2022



# SPEAKING NOW



Jenni Woods

Health & Business Intelligence Lead  
NHS Tayside – Alongside Catalyst BI



Susan Paterson

Associate Director – NHS Tayside  
Alongside Catalyst BI

I will be  
discussing...

”Helping Predict Demand &  
Manage Patient Flow in the  
NHS”

# Predicting and Managing Patient Flow

**Barney Ulyatt**

Business Development Manager – Catalyst BI

**Jenni Woods**

Health & Business Intelligence Lead – NHS Tayside

**Susan Paterson**

Associate Director – NHS Tayside



# Over to Jenni and Susan



# Thank You

---



**Jenni Woods**

Health & Business Intelligence Lead – NHS Tayside

[Jennifer.Woods@nhs.scot](mailto:Jennifer.Woods@nhs.scot)



**Susan Paterson**

Associate Director – NHS Tayside



**Barney Ulyatt**

Business Development Manager – Catalyst BI

[Barney.Ulyatt@catalyst-it.co.uk](mailto:Barney.Ulyatt@catalyst-it.co.uk)



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## The NHS Patient Flow Conference 2022



# UP NEXT...





## The NHS Patient Flow Conference 2022



# SPEAKING NOW



**Dr Simone Lester**

Medical Director  
Sodexo Medical Advisory Board

I will be  
discussing...  
“How to Create Positive  
Patient Outcomes with  
Integrated Facilities  
Services that help Improve  
the flow within your  
Hospital”



# Harnessing non-clinical interventions to improve patient flow

**Dr Simone Lester**  
Medical Director  
Sodexo Health & Care

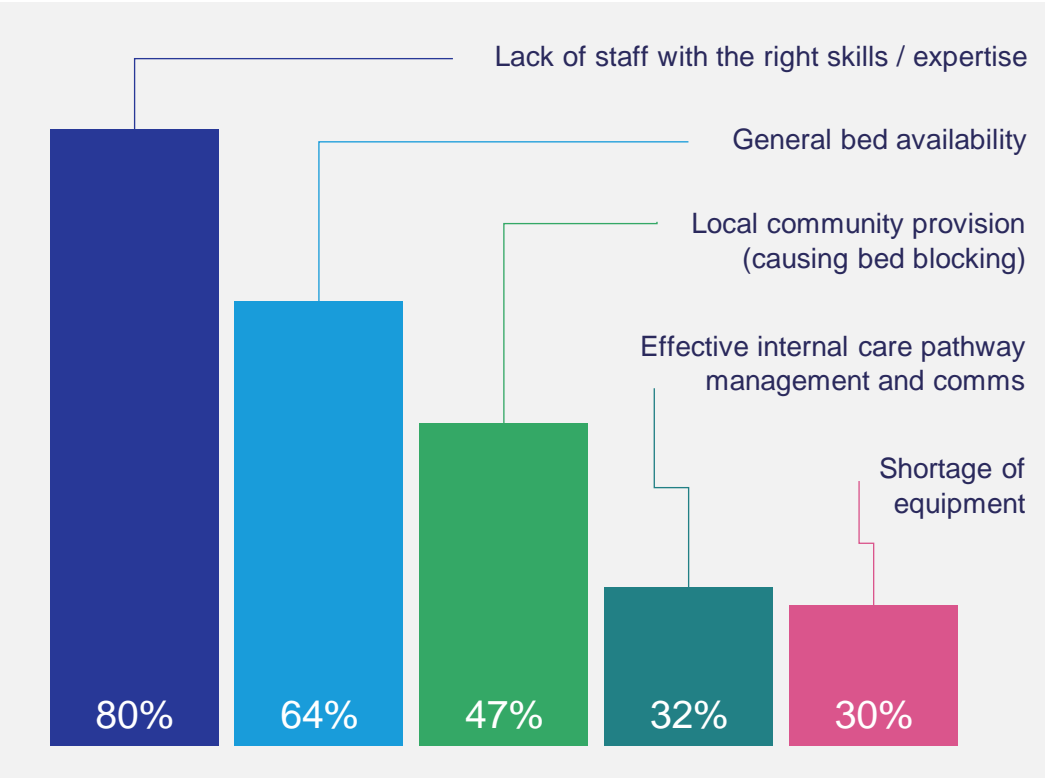


# **What NHS staff and patients told us about their experience**

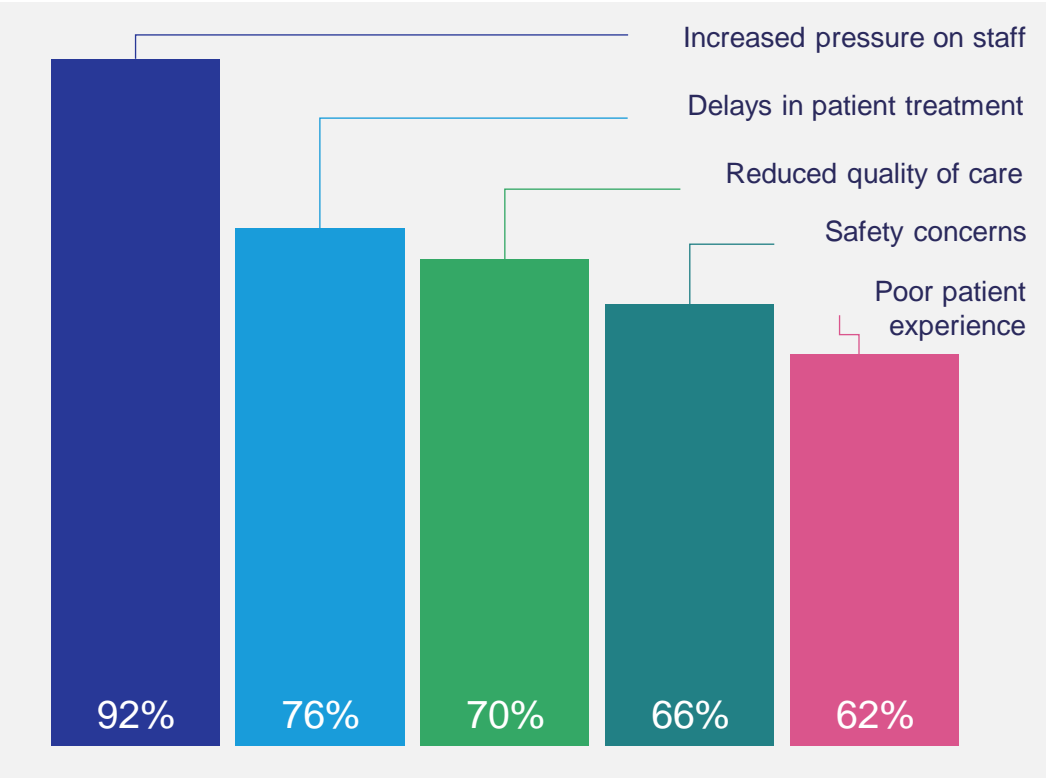


# What you told us about patient flow in your organisation

What factors in particular are limiting the capacity at your hospital or Trust?

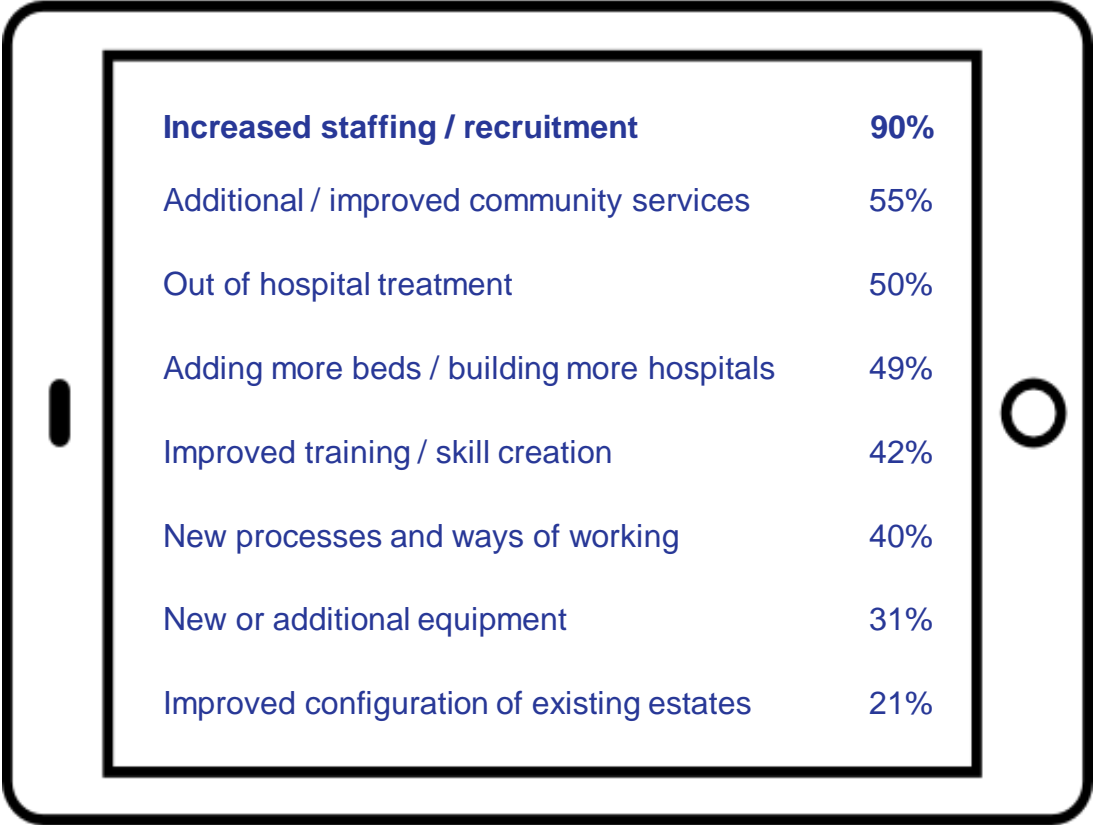


What are the main consequence(s) of working at capacity within your organisation?

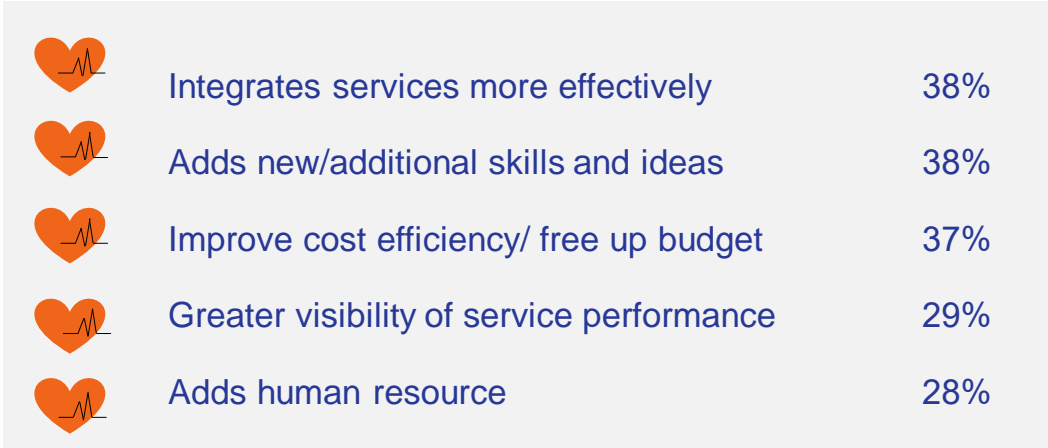




What solution(s), if any, do you think could help improve patient flow within your organisation?



What, if anything, could be a benefit(s) of working with a third party to help address patient flow/capacity challenges?

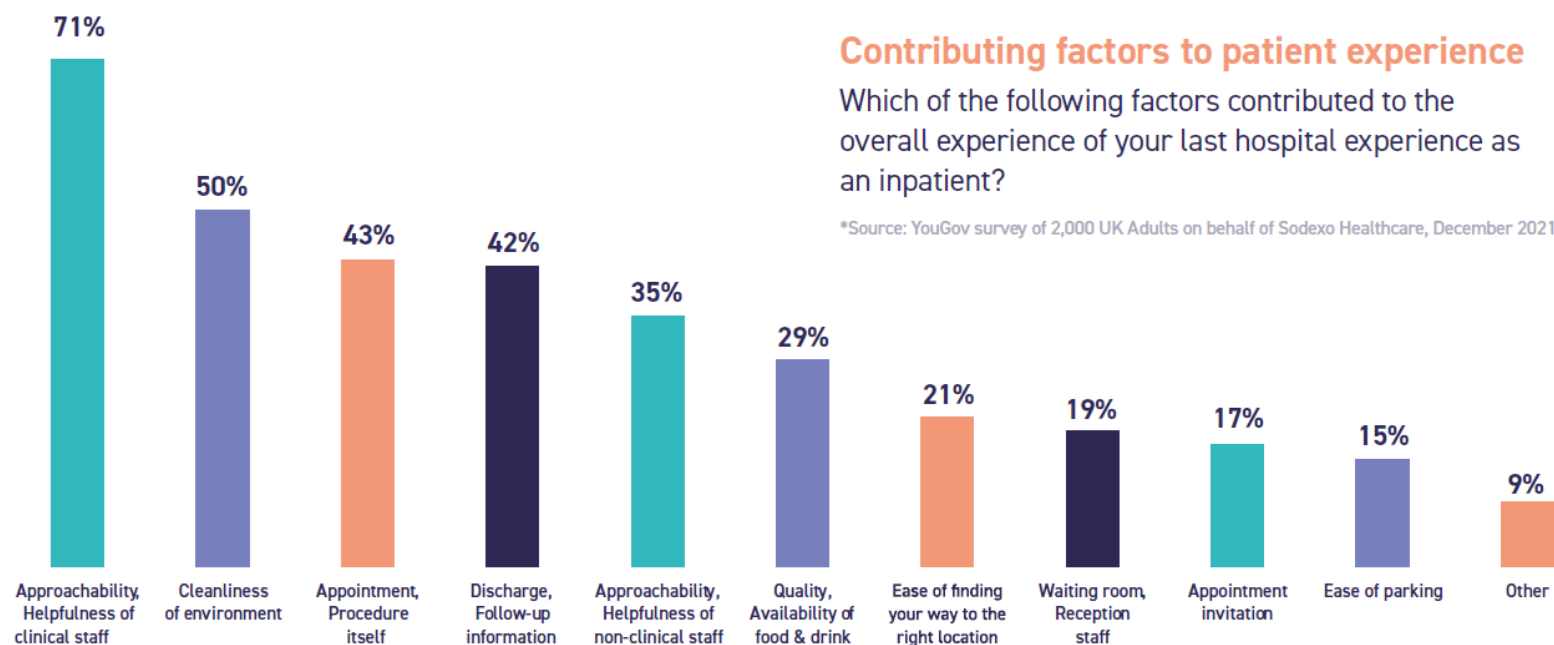




# Why patient experience matters when it comes to improving flow

According to new research\*, **93%** of inpatients believe they are more likely to get better quicker and leave hospital sooner if they have had a positive experience.

Non-clinical interactions play a huge role in this. In fact, **50%** say the cleanliness of their environment is a key contributing factor to their experience, making it more important than the appointment itself.





**How can getting on  
your bike keep your  
hospital moving?**





# Multiple small changes can make a big difference



Painted the inside of the team truck white to spot little bits of dust that would normally slip by unnoticed but could degrade the performance of the finely tuned bikes.



Determined the type of pillow and mattress that led to the best night's sleep for each rider.



Hired a surgeon to teach each rider the best way to wash their hands to reduce the chances of catching a cold.

Between 2007-2017 British cyclists won 178 world championships, 66 Olympic or Paralympic gold medals and 5 Tour de France victories.



## **CASE STUDIES**

**Improving patient  
flow through non-  
clinical interventions**





# CASE STUDY #1

## Increasing portering productivity at North Devon District Hospital



### TRUST

Royal Devon University Healthcare  
NHS Foundation Trust

### OPENED

23 November 1979

### HOSPITAL TYPE

District General

### BEDS

300 Inpatient Beds

### EMPLOYEES

3392 Trust Employees  
350 Sodexo Employees

### FIRST PARTNERED WITH SODEXO

April 1997

### SERVICES PROVIDED

- Catering
- Cleaning
- Portering
- Helpdesk
- Reception
- Security
- Courier Services

## SIGNIFICANTLY INCREASING PRODUCTIVITY



**26.1%**

Increase in completed tasks against the previous year



**14%**

Improvement in task response time



**9%**

Increase in average completed tasks per hour



**66%**

Increase in porter's productivity

“

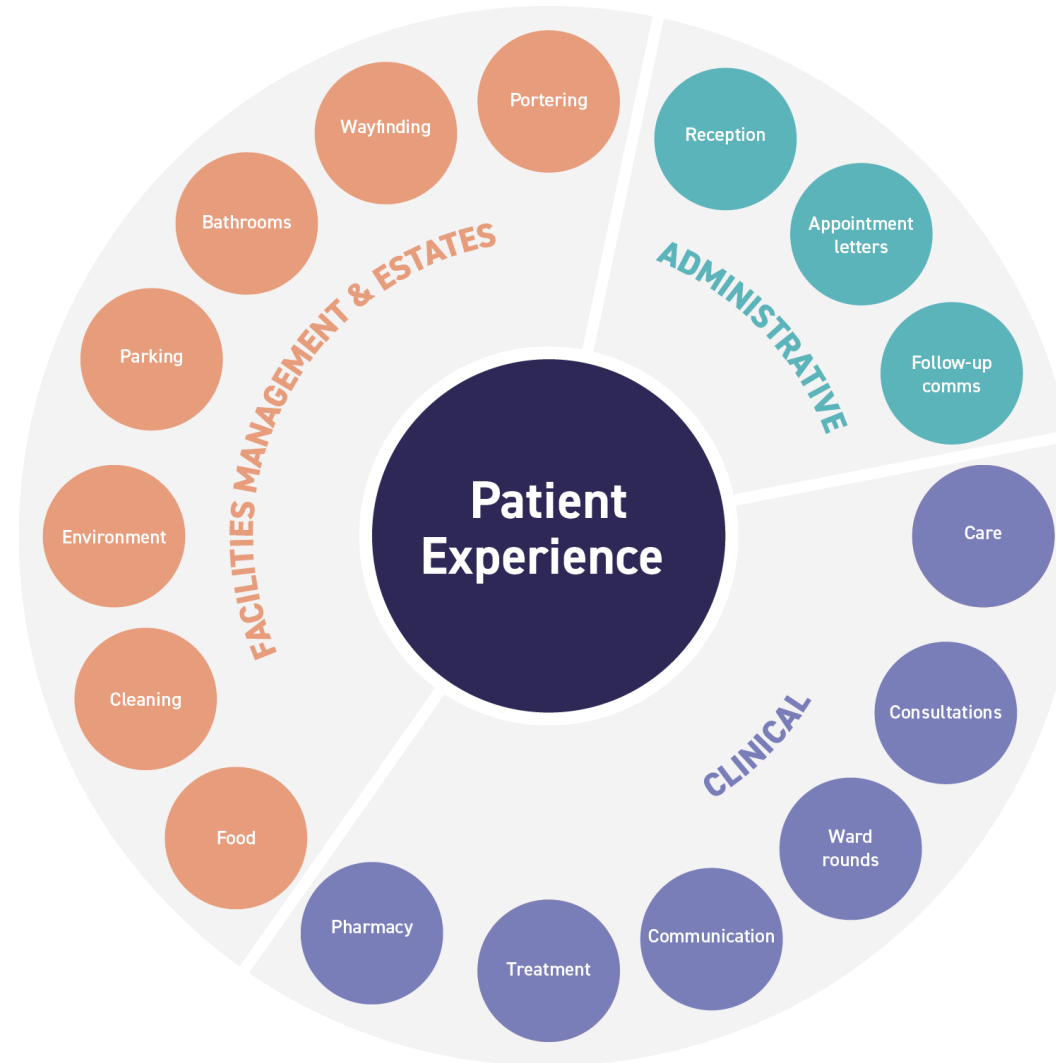
I can't think of going back to our old system. It's increased our workflow and has enabled us to use the porters more effectively and efficiently. It has made such a vast improvement not just for the department but also our patients. We loved that we could follow the whole process on screen and see the location of each porter.

Jude Roome, Superintendent Radiographer



## CASE STUDY #2

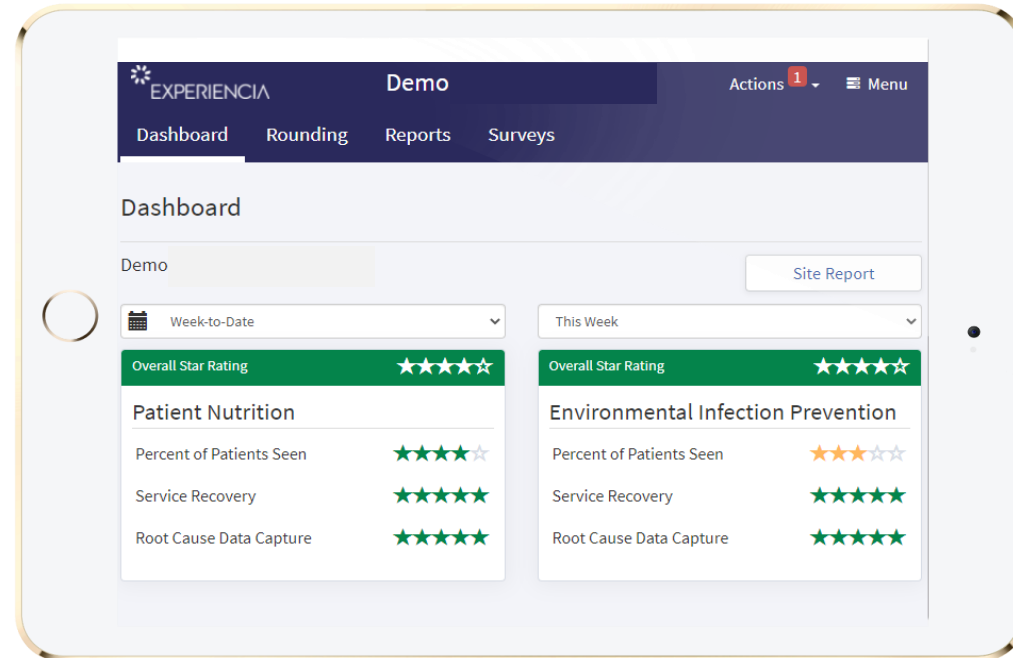
# Adopting technology to act on patient feedback at Manchester NHS Foundation Trust



# Improving patient experience in real-time



**Helen Hitchen**  
Patient Ambassador  
at Manchester Oxford  
Road Campus



**Experientia Dashboard**  
Real-time data and insights enable teams to mitigate  
problems before the patient has left





“ Never underestimate the power of listening to people.

Linda Whitehead, Facilities Matron, Sodexo Health & Care

# Final thoughts

## **The role of non-clinical interventions matters**

Inpatient research shows that six out of the top ten factors contributing to patient experience are non-clinical

## **The NHS needs support to improve patient flow**

88% of healthcare professionals we interviewed agreed that there would be benefit to working with a third party to address patient flow / capacity

## **Sodexo Health & Care can help**

We provide controlled delivery and empowered experiences that keep health and care flowing every day

**Thank you**





# Slido

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



Wednesday 6<sup>th</sup> July 2022- 2022- 08:00am – 15:30pm – Hatfield's Conference Centre  
Conference hosted by Convenzis Group Limited





## The NHS Patient Flow Conference 2022



# SPEAKING NOW



**Stuart Hosking-Durn**

Head of Resilience & Patient Flow  
University Hospitals of Morecambe Bay  
NHS Foundation Trust

I will be  
discussing...  
“Learning from Crisis:  
Innovation & Results in  
Emergency Care”

We are  
**UHM**BT

*Together*, we are creating a great place  
to be cared for and a great place to work

# Learning from Covid-19 to improve patient flow

Stuart Hosking-Durn, Head of Resilience & Patient Flow



# Learning from COVID-19 to support improvements in patient flow

- Measure what's important
  - Data metrics
  - Timely & accurate information
- Setting the right agenda
  - Action FOCUS
- Co-locating decision makers
  - Establish a place
  - Make use of technology to create virtual places
- Continuing the journey
  - There's always room for improvement



# Morecambe Bay setting the context

- Integrated Care Trust
  - 3 acute hospital sites
  - 2 community bedded sites
  - 50+ community team location
  - c 8,500 staff
  - c 370,000 citizens
  - 1,000 sq miles
  - NMC2R currently accounts for 22% of G&A beds
  - Future boundary changes due to LA split could increase this area leading to more challenges





# Metrics

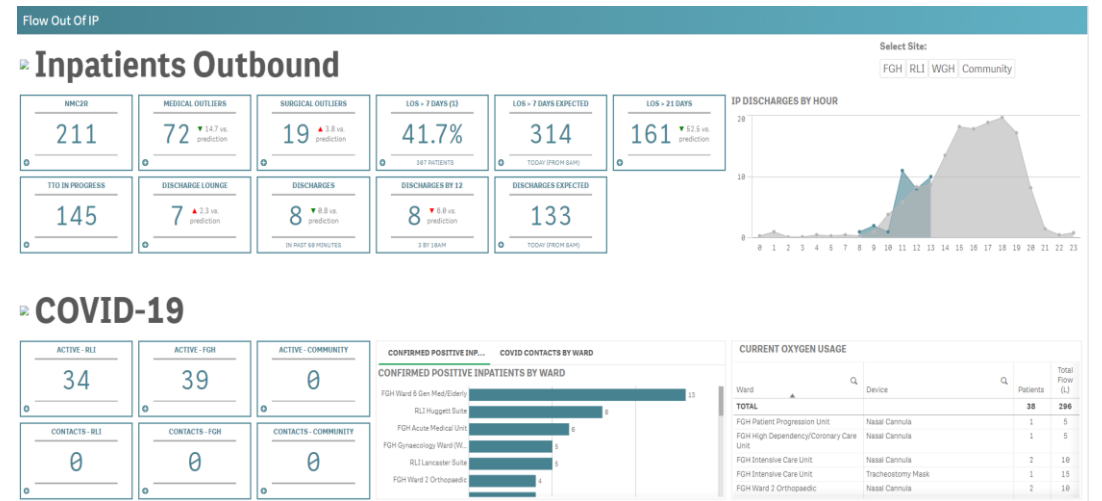
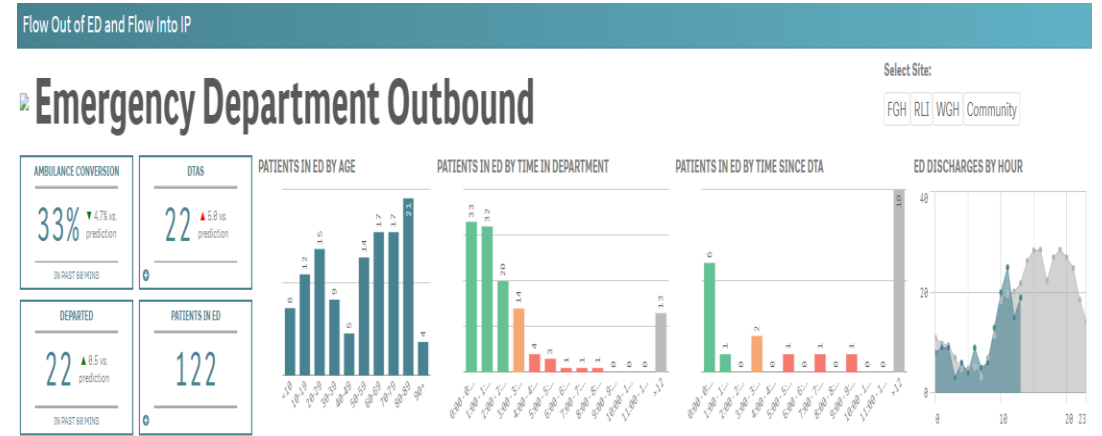
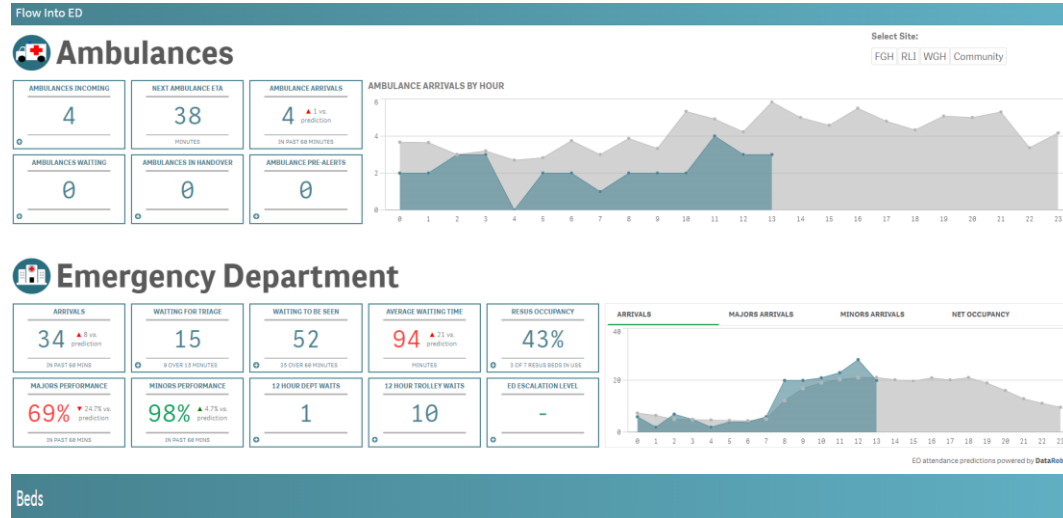
- Measuring pressure can be very subjective without clear and measurable metrics which help frame the discussion.
- Patient safety & experience must be and is at the heart of the assessment of pressure both in ED and across the system.
- Computer AI systems can calculate a “number”, but does it tell the true story?
- Transparency in the metrics gives confidence that escalation/de-escalation is being managed consistently

ED Escalation status	Emergency Department Escalation Triggers							
	Total patients in ED (x1.5 weighting)	Number of ambulance waits	Resus spaces available	Isolation cubicles available	Attendance in last hour	Current triage wait time	Current wait to be seen by a clinician	Patients with DTA >30 mins waiting for a bed
4	41 or more	5 or more	0	0	16 or more	>46 mins	>120 mins	5 or more
3	31-40	3-4	0	1	11-15	21-45 mins	90-119 mins	3-4
2	21-30	1-2	1	2	6-10	16-20 mins	61-89 mins	1-2
1	20 or less	0	2 or more	3 or more	5 or less	15 mins or less	60 mins or less	0

Trigger	OPEL 1	OPEL 2	OPEL 3	OPEL 4
ED escalation level	1	2	3	4
Patients spending more than 12hrs in ED	<1% of attendance	<2% of attendance	2-4% of attendance	>4%
Critical Care capacity	<80% occupied	80-100%	All formal capacity occupied and planned overflow in use	Mutual aid plan implemented
G&A bed occupancy	RLI <85% FGH <90%	Up to 95%	95-100%	Is above 100%
Planned additional bed capacity	Available and on standby	Escalation capacity in use but below 80%	Escalation capacity in use up to 100%	All additional escalation beds opened and in use, Full Capacity Protocol initiated
Expected capacity v expected demand	Capacity is equal to or greater than forecast demand for the next 24 hours	There is an expected capacity deficit of less than 20% for the next 24 hours	There is an expected capacity deficit between 20-40% for the next 24 hours	The expected capacity deficit is >40% for the next 24 hours
Beds in assessment areas	Beds in assessment areas are less than 90% occupied	Beds in assessment areas are 90-99% occupied	No assessment beds available within the next 3 hours	No assessment beds available >3 hours
Infection Prevent & Control	No loss of admission beds due to IP factors	Between 1-3% of G&A beds trapped	Between 4-10% of G&A beds trapped	More than 10% of G&A beds trapped
Staffing	Planned safe staffing place	Actual staffing levels >90%	Actual staffing levels 80-90%	Actual staffing <80%
Not Meeting Criteria to Reside	>11% of G&A bed capacity	Between 11-14% of G&A bed capacity	Between 14-17% of G&A bed capacity	>17% G&A bed capacity

# Get access to timely data



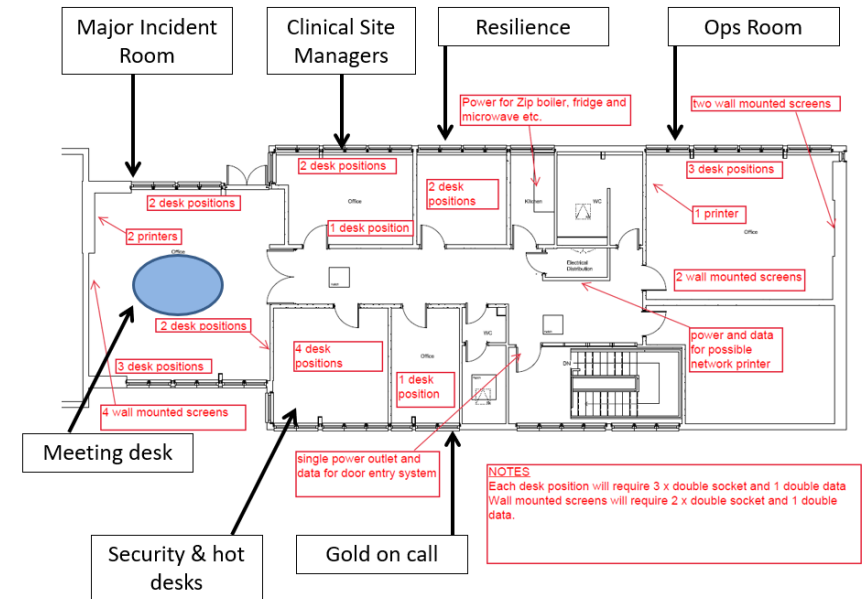
# Managing patient flow agenda

- Meeting agenda
  - Action not debate – what, by whom, by when?
  - ECIST – FOCUS
  - [The FOCUS Model - a set of guiding principles to help teams standardise operational site management | Fab NHS Stuff](#)
- Manage attendees
  - Avoiding the “cast of thousands”
  - Align to OPEL
- Setting the “battle rhythm”
- Declaring OPEL 4
  - Be bold but be sure

Patient flow meeting agenda	08:00	12:00	16:00	20:00
Handover from previous night – Tactical on-call	X			
Review of outstanding actions	X	X	X	X
Patient safety & welfare – including any significant harm events	X	X	X	X
Staff safety & welfare – safe staff & incidents involving staff who may need support	X	X	X	X
ED <ul style="list-style-type: none"> <li>• triage time</li> <li>• WTBS</li> <li>• resus &amp; majors' capacity</li> <li>• DTA patients over 4 &amp; 12hrs</li> <li>• instances of corridor care, ambulance handover delays</li> <li>• mental health patients for escalation</li> <li>• Actions &amp; support needed</li> <li>• ED escalation level</li> </ul>	X	X	X	X
Bed position <ul style="list-style-type: none"> <li>• Now, later, possible, net beds against current predictor</li> <li>• Speciality beds – ICU, stroke, CCU, PPU etc</li> <li>• Issues affecting discharge &amp; Care Group plan to meet current DTAs</li> <li>• ICU step downs, repats from other hospitals and patients waiting primary transfers to tertiary centres</li> <li>• Closed/trapped beds and outbreak update</li> <li>• Paeds/Maternity/SCBU/Neonates including internal diverts</li> <li>• Community services</li> <li>• WGH position</li> </ul>	X	X	X	X
DoLS numbers & security reviews		X		
NMC2R numbers and discharge plans (P1, P2 & P3)		X		
Discharge plans for the following day			X	
Covid situation – including positive & vent numbers	X		X	
Agree actions & log – What is needed? Who is doing it? By when?	X	X	X	X
Evening plan and handover for Tactical & Strategic			X	
Review and confirm overnight plan				X

# Co-locating flow & EPRR

- Consider creating a permanent “place”
  - ICC, EOC, PFCC etc
- Choose the right location
  - Security implications during a major incident
- Resiliency & redundancy
  - Power (n+1), data (WannaCry), fall-backs (Storm Desmond)
  - Remote capability
- Welfare
  - Ice cream freezer





# Rooms with a view



# Continuing the journey

- Stroke

Stroke Tracker - Last App Reload Time = 04/07/2022 14:43:49

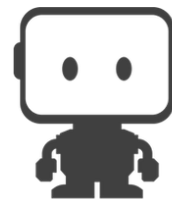
	CURRENT STROKE PATIENTS	BRAIN SCAN NOT REQUESTED	BRAIN SCAN NOT COMPLETED	NEED DYSPHAGIA SCREENING	THROMBOLYSED PATIENTS	NOT ON A STROKE WARD	NOT SEEN BY NURSE	NOT SEEN BY CONSULTANT
Highlight Rows Requiring Action	46	2	3	7	3	8	7	6
Highlight Rows That Are Overdue	Select Site	VIEW DETAIL	VIEW DETAIL	VIEW DETAIL	VIEW DETAIL	VIEW DETAIL	VIEW DETAIL	VIEW DETAIL

Arrived Date/Time	Time Since Arrival	RTX Number	Initials	Current Location	Brain Scan Requested	Brain Scan < 1 Hour	Dysphagia Screen < 4 Hours	Thrombolysis Status	Stroke Ward Admission < 4 Hours	Seen By Stroke Nurse < 24 Hours	Seen By Stroke Consultant < 24 Hours
04/07/2022 14:21:00	22 Mins	RTX0559622	SL	RLI ED	Requires Action	Requires Action	Requires Action	No Thrombolysis Recorded	Requires Action	Requires Action	Requires Action
04/07/2022 14:19:00	24 Mins	RTX0463359	DS	RLI ED	Requires Action	Requires Action	Requires Action	No Thrombolysis Recorded	Requires Action	Requires Action	Requires Action
04/07/2022 13:22:00	1 Hours 21 Mins	RTX0534395	IH	RLI ED	Complete	Complete	Requires Action	No Thrombolysis Recorded	Requires Action	Requires Action	Requires Action
04/07/2022 12:35:00	2 Hours 8 Mins	RTX0446962	CS	RLI ED	Complete	Complete > 1 Hour	Requires Action	No Thrombolysis Recorded	Requires Action	Requires Action	Requires Action
04/07/2022 12:24:00	2 Hours 19 Mins	RTX1075282	SW	FGH ED	Complete	Complete > 1 Hour	Requires Action	No Thrombolysis Recorded	Requires Action	Requires Action	Requires Action
04/07/2022 11:51:00	2 Hours 52 Mins	RTX8707317	AJ	RLI ED	Complete	Complete	Requires Action	No Thrombolysis Recorded	Requires Action	Requires Action	Requires Action
03/07/2022 20:07:00	18 Hours 36 Mins	RTX3062068	GW	RLI Huggett Suite	Complete	Complete	Complete	No Thrombolysis Recorded	Complete > 4 Hours	Complete	Complete
03/07/2022 15:29:00	23 Hours 14 Mins	RTX8018646	JO	RLI Huggett Suite	Complete	Complete	Complete	No Thrombolysis Recorded	Complete	Complete	Complete
02/07/2022 19:27:00	1 Days 19 Hours	RTX8707197	SL	RLI Huggett Suite	Complete	Overdue	Complete	No Thrombolysis Recorded	Complete	Complete	Complete

- Oxygen

- Moving the data forward



**DataRobot**

## Flow Out Of IP

### CURRENT OXYGEN USAGE

Ward	Device	Patients	Total Flow (L)
<b>TOTAL</b>		<b>37</b>	<b>285</b>
FGH Patient Progression Unit	Nasal Cannula	1	5
FGH High Dependency/Coronary Care Unit	Nasal Cannula	1	5
FGH Intensive Care Unit	Nasal Cannula	2	10
FGH Intensive Care Unit	Tracheostomy Mask	1	15
FGH Ward 2 Orthopaedic	Nasal Cannula	1	5
FGH Ward 2 Orthopaedic	Simple Face Mask	1	15
FGH Ward 4 General Surgery	Nasal Cannula	1	5
FGH Ward 4 General Surgery	Venturi Mask 35%	1	8
FGH Ward 5 General Surgery	Nasal Cannula	1	5
FGH Ward 6 Gen Med/Elderly	Nasal Cannula	3	15
FGH Ward 7 Gen Med/Elderly	Nasal Cannula	4	20
FGH Ward 9 and Coniston Suite	Reservoir Mask	1	15

We are  
**UHM**BT

*Together*, we are creating a great place  
to be cared for and a great place to work

Thank you





## The NHS Patient Flow Conference 2022



# UP NEXT...

# ZIO<sup>®</sup>

BY iRHYTHM





## The NHS Digital Hospitals Conference 2022



# SPEAKING NOW



**Dr Nolan Stain-Montalvo**

Principal Clinical Scientist leading on networked cardiology and non-invasive cardiac diagnostics - Barts Health NHS Trust, London

I will be  
discussing...  
“Introducing Patch  
Technology in a Stroke”



# Slido

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Wednesday 6<sup>th</sup> July 2022- 2022- 08:00am – 15:30pm – Hatfield's Conference Centre  
Conference hosted by Convenzis Group Limited



## The NHS Patient Flow Conference 2022:



# Q&A Panel



**Dr Nolan Stain-Montalvo**  
Principal Clinical Scientist  
Barts Health NHS Trust -  
iRhythm



**Stuart Hosking-Dawn**  
Head of Resilience &  
Patient Flow



**Andrew Davies**  
Medical Director  
Sodexo Medical Advisory  
Committee



**Baldur Johnsen**  
Health & Business  
Intelligence Lead  
NHS Tayside – Catalyst BI



## **The NHS Patient Flow Conference 2022:**



# **NETWORKING & LUNCH**





## The NHS Patient Flow Conference 2022:



# Chair Afternoon Reflection



Douglas  
Hamandishe

“Apprenticeship Relationship  
Manager – Health Education  
England”



## The NHS Patient Flow Conference 2022:



# UP NEXT...

AstraZeneca 

The AstraZeneca logo, featuring the company name "AstraZeneca" in a purple serif font, followed by a yellow stylized logo symbol consisting of two interlocking, curved shapes.



**The NHS Patient Flow  
Conference 2022:**



# **SPEAKING NOW**

**I will be  
discussing...**

**“The Burden of  
Hyperkalaemia:  
Maintaining Normal  
Potassium in Acute &  
Recurring Patient”**



# The Burden of Hyperkalaemia: Maintaining Normal Potassium in Acute and Recurring Patients

Wednesday 6<sup>th</sup> July 2022

For UK healthcare professionals only

**This promotional meeting is organised and funded by AstraZeneca.**

**Prescribing Information is available at this meeting or at the AstraZeneca Stand**

Adverse events should be reported. Reporting forms and information can be found at [www.mhra.gov.uk/yellowcard](http://www.mhra.gov.uk/yellowcard) or search for MHRA Yellow Card in the Google Play or Apple App Store. Adverse events should also be reported to AstraZeneca by visiting <https://contactazmedical.astrazeneca.com> or by calling 0800 783 0033.

This medicinal product is subject to additional monitoring. This will allow quick identification of new safety information. Healthcare professionals are asked to report any suspected adverse reactions.



Document number: GB-37322

Date of preparation: June 2022



# Our speakers

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## **Ruby Chumber**

Advanced Cardiology Practitioner, Queens Medical Centre

## **Dr Amir Jehangir FRCP**

Consultant Acute & General Internal Medicine

University College Hospital London

Honorary Clinical Associate Professor

UCL Medical School



# Speaker disclosures

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**Ruby Chumber** - Advanced Cardiology Practitioner, Queens Medical Centre

- Speaker honorarium – AstraZeneca

**Dr Amir Jehangir FRCP**

Consultant Acute & General Internal Medicine

University College Hospital London

Honorary Clinical Associate Professor

UCL Medical School

- Speaker fees received from BMS/Pfizer, Menarini, Pharmacosmos, Alexion and AstraZeneca



# LOKELMA<sup>®</sup>▼ (sodium zirconium cyclosilicate)<sup>1</sup>

5 g powder for oral suspension | 10 g powder for oral suspension

## Therapeutic indications

LOKELMA is indicated for the treatment of hyperkalaemia in adult patients.

## Posology

Adults, including the elderly

### *Correction phase*

The recommended starting dose of LOKELMA is 10 g, administered three times a day orally as a suspension in water.

When normokalaemia is achieved, the maintenance regimen should be followed.

### *Maintenance phase*

When normokalaemia has been achieved, the minimal effective dose of LOKELMA to prevent recurrence of hyperkalaemia should be established. A starting dose of 5 g once daily is recommended, with possible titration up to 10 g once daily, or down to 5 g once every other day, as needed, to maintain a normal potassium level. No more than 10 g once daily should be used for maintenance therapy.

### *Patients on chronic haemodialysis*

For patients on dialysis, LOKELMA should only be dosed on non-dialysis days. The recommended starting dose is 5 g once daily.

To establish normokalaemia (4.0–5.0 mmol/L), the dose may be titrated up or down weekly, based on the pre-dialysis serum potassium value after the long interdialytic interval (LIDL). The dose could be adjusted at intervals of one week in increments of 5 g up to 15 g once daily on non-dialysis days.

Please refer to the LOKELMA SmPC for full details.



160



LIDL=long inter dialytic interval;  
SmPC=Summary of Product  
Characteristics.

1. AstraZeneca. LOKELMA<sup>®</sup> (sodium  
zirconium cyclosilicate): Summary  
of Product Characteristics.

Accessed June 2022



# Lokelma Mode of Action Video



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This is a promotional AstraZeneca meeting







# Safety and tolerability profile<sup>1</sup>

- 5.7% of patients receiving LOKELMA reported oedema-related events;\* the events were more commonly seen in patients treated with 15 g
- 4.1% of patients receiving LOKELMA developed hypokalaemia (serum K<sup>+</sup> level <3.5 mEq/L), which resolved with dosage adjustment or discontinuation of LOKELMA
- LOKELMA is not systemically absorbed or metabolised by the body
- LOKELMA can be co-administered without spacing of dosing times with oral medications that do not exhibit pH-dependent bioavailability
- LOKELMA contains approximately 400 mg sodium per 5 g dose, equivalent to 20% of the WHO recommended maximum daily intake of 2 g sodium for an adult. LOKELMA is considered high in sodium. This should be particularly considered for those on a low-salt diet

LOKELMA is not to be used in place of emergency treatments; emergency treatment may require other temporary agents.

**Please refer to the LOKELMA SmPC for full safety information.**



# Panel discussion

Ruby Chumber &  
Dr Amir Jehangir FRCP



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## **PRESCRIBING INFORMATION**

**LOKELMA<sup>®</sup> ▼ (sodium zirconium cyclosilicate) 5g & 10g POWDER FOR ORAL SUSPENSION**

**Consult Summary of Product Characteristics before prescribing.**

**Indication:** Lokelma is indicated for treatment of hyperkalaemia in adults.

**Presentation:** 5g or 10g powder for oral suspension. Each sachet contains 5g or 10g sodium zirconium cyclosilicate.

**Dosage and Administration:** **Correction phase:** Recommended starting dose for adults and elderly is 10g, administered orally, three times a day as a suspension in water, with or without food. When normokalaemia is achieved the maintenance regimen should be followed. Typically, normokalaemia is achieved within 24 to 48 hours. If patient is still hyperkalaemic after 48 hours of treatment the same regimen can be continued for an additional 24 hours. If normokalaemia not achieved after 72 hours of treatment other treatment options should be considered. **Maintenance phase:** Establish the minimal effective dose to prevent recurrence of hyperkalaemia. Recommended starting dose of 5g once daily, with possible titration up to 10g once daily, or down to 5g once every other day, as needed, to maintain normal potassium level. No more than 10g once daily should be used for maintenance therapy. Monitor serum potassium levels regularly during treatment. Monitoring frequency will depend on factors such as other medications, progression of chronic kidney disease and dietary potassium intake. Discontinue and re-evaluate patient if severe hypokalaemia occurs. No clinical data available for treatment beyond one year. **Patients on chronic haemodialysis:** Patients on dialysis should only be dosed on non-dialysis days. Recommended starting dose is 5g once daily. To establish normokalaemia (4.0 - 5.0 mmol/L), the dose may be titrated up or down weekly based on the pre-dialysis serum potassium value after the long inter dialytic interval (LIDI). The dose could be adjusted at intervals of one week in increments of 5g up to 15g once daily on non-dialysis days. Monitor serum potassium weekly while the dose is adjusted. Once normokalaemia is established, monitor potassium regularly (e.g. monthly, or more frequently based on clinical judgement including changes in dietary potassium or medication affecting serum potassium). **Renal/hepatic impairment:** No dosage adjustment required. **Paediatric population:** Safety and efficacy has not been established in children and adolescents (<18 years).

**Contraindications:** Hypersensitivity to the active substance.

**Warnings and Precautions:** **Serum potassium levels:** Monitor serum potassium levels when clinically indicated, including after changes are made to medicinal products that affect the serum potassium concentration (e.g. renin-angiotensin-aldosterone system (RAAS) inhibitors or diuretics) and after Lokelma dose is titrated. **Hypokalaemia:** Hypokalaemia may be observed. To prevent moderate to severe hypokalaemia dose titration (maintenance posology) may be required. Discontinue and re-evaluate treatment in patients with severe hypokalaemia. **QT Prolongation:** During correction phase, a lengthening of QT interval can be observed as the physiologic result of decline in serum potassium concentration. **Risk of interaction with X rays:** Sodium zirconium cyclosilicate may be opaque to X-rays, keep in mind if patient has abdominal X-ray. **Intestinal perforation:** Risk of intestinal perforation unknown. Special attention to be paid as intestinal perforation has been reported

with polymers that act in the gastrointestinal tract. **Sodium content:** Lokelma is considered high in sodium. This should be particularly taken into account for those on a low salt diet. **Severe hyperkalaemia:** Limited experience in patients with serum potassium concentrations greater than 6.5 mmol/L.

**Drug Interactions:** No expected effects of other medicines on sodium zirconium cyclosilicate as it is not absorbed or metabolised by the body. Sodium zirconium cyclosilicate can transiently increase gastric pH and can lead to changes in solubility where co-administered medicinal product has pH-dependent stability and therefore should be administered at least 2 hours before or 2 hours after oral medications with clinically meaningful gastric pH dependent bioavailability (e.g. azole antifungals, a number of anti-HIV drugs, and tyrosine kinase inhibitors). Sodium zirconium cyclosilicate can be co-administered without spacing of dosing times with oral medications that do not exhibit pH-dependent bioavailability.

**Pregnancy and Lactation:** Preferable to avoid use during pregnancy. Can be used during breast-feeding.

**Ability to Drive and Use Machines:** Lokelma has no or negligible influence on the ability to drive and use machines.

**Undesirable Events:** Consult SmPC for full list of side effects. **Common:** Hypokalaemia, oedema related events (including fluid overload, fluid retention, generalised oedema, hypervolaemia, localised oedema, oedema, oedema peripheral, peripheral swelling).

**Legal Category:** POM.

**Marketing Authorisation Numbers:** Great Britain: PLGB 17901/0332, PLGB 17901/0331. Northern Ireland: EU/1/17/1173/002-004

**Presentation and Basic NHS Cost:** 5g x 30 pack: £156; 10g x 3 pack: £31.20; 10g x 30 pack: £312.

**Marketing Authorisation Holder:** Great Britain: AstraZeneca UK Ltd., 600 Capability Green, Luton, LU1 3LU, UK. Northern Ireland: AstraZeneca AB, SE-151 85 Södertälje, Sweden.

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Wednesday 6<sup>th</sup> July 2022- 2022- 08:00am – 15:30pm – Hatfield's Conference Centre  
Conference hosted by Convenzis Group Limited



## The NHS Patient Flow Conference 2022:



# SPEAKING NOW



**Dr Michael Watts**

Associate CCIO

University Hospitals of Derby & Burton NHS Trust

I will be  
discussing...

“Digitalising Patient Flow  
– The Barriers & How to  
Overcome them”

# Digitalising Patient Flow

A Junior Doctors Story



# Aims

- Optimising patient flow
- The benefits of digital
- Understanding technology's impact on patient flow
- How to implement digital and its barriers

## Who needs to hear this talk

- **Thought leaders and clinical Innovators**
- **Change enthusiasts**
- **NHS intrapreneurs**
- **NHS leaders**



# Introduction

## My Why

On a mission to create patient-centric, safe and impactful healthcare through digitalisation

- NHS Doctor
- Associate CIO, University Hospitals of Derby & Burton
- Co-founder and Managing Director of a Digital Health SME
- NHS England Clinical Entrepreneur and Mentor
- MBA Student



**Dr Michael Watts MBChB BSc  
(Hons)**

The perfect flow



# Understanding Patient Flow

## The Benefits

- **Minimising waiting times and delays in care**
- **Improving clinical outcomes and patient experience**
- **Increased efficiency, less duplication**
- **Reduced costs (less overtime, waiting list initiatives, locums)**



The ultimate benefit to the NHS is **REPUTATION**

# The digital patient flow

## The Benefits

- **Centralised data storage**
- **Improved auditability**
- **Accelerated communication**
- **Reduced paper usage**





SaaS

## The Benefits

- **Data-driven decision making**
- **Clicks and mortar organisation**
- **Improved communication**
- **Staffing support**



# Robotic process automation

## The Benefits

- **Limiting variation and human error**
- **Eradicates behavioural biases (eg operational vs clinical)**
- **Automatic reporting**
- **Improved interoperability**



## The Benefits

- **Trend recognition**
- **Decision-support algorithms**
- **Predict number of admissions / transfers / discharges**
- **Predict resource requirements**



## The Risks

### The Risks

- **Decision-support risks**
- **Accountability**
- **Managing adaptive technologies**





## Case Study



Thank you



**michael.watts5@nhs.net**



## The NHS Patient Flow Conference 2022



# UP NEXT...

# zoom



## The NHS Patient Flow Conference 2022:



# SPEAKING NOW



Ash Thornley-Davies

Healthcare Account Executive  
Zoom

I will be  
discussing...

“Why the NHS Choose  
Zoom: Harnessing Zoom  
Integrations for Improved  
Patient Outcomes”





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## The NHS Patient Flow Conference 2022:



# SPEAKING NOW



**Sian Wimbury**

Deputy Chief Operating Officer  
Greater Manchester Mental  
Health Foundation Trust



**Simon Glover**

Patient Flow Strategic Lead  
Greater Manchester Mental  
Health Foundation Trust

I will be  
discussing...

“Why the NHS Choose  
Zoom: Harnessing Zoom  
Integrations for Improved  
Patient Outcomes”



# THANKS FOR ATTENDING



**The NHS Patient Flow  
Conference 2022**



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