



WELCOME TO

The NHS Smart Estates Conference 2022

The NHS Smart Estates
Conference



2022

Check Out Our
Agenda Here...



Wednesday 16th November 2022- 10:50am – 15:00pm – GoTo Webinar

Conference hosted by Convenzis Group Limited



The NHS Smart Estates Conference 2022



UP NEXT...



SPEAKING NOW



Darren Sloof

Head of Research and Innovations
Air Purity Ltd

I will be discussing...

“Real world study and
technology to change
ventilation strategy and
help reach Net Zero”

AAirDS



Addenbrookes Air Disinfection Study

The NHS Smart Estates Conference 2022

1. Clinical Outcomes

AAirDS-C (clinical)

a) Primary

- i) Incidence of SARS-COV2, adenovirus, HMPNV, Flu A|B, parainfluenza, RSV, picornavirus, norovirus, s.aureus, c.diff, and any Abx Rx \bar{c} CAP or HAP as indication.
- ii) Incidence of SARS-COV2 alone

b) Secondary

- i) Respiratory viruses excluding SAR-COV2
- ii) C.diff
- iii) S.aureus
- iv) norovirus
- v) HAP - by Abx indication
- vi) All other HAIs
- vii) Severity of C.diff, SARS-COV2 and S.aureus
- viii) Length of stay
- ix) Bed days lost
- x) Abx usage
- xi) Abx cost
- xii) 30 day mortality

2. Feasibility

AAirDS-E (environment)

a) Air sampling weekly

- i) Fluidigm **90+ targets**

b) Air sensors

- i) PM counts
 - 1
 - 2.5
 - 4
 - 10
- ii) CO2 levels
- iii) RH
- iv) Temperature

c) Cleaning

- i) Soap usage
- ii) PPE usage
- iii) Alcohol hand sanitisers usage

d) Validation

- i) Standard AGAR/MALDI

3. Acceptability

AAirDS-Q (quantative)

a) Patients survey

b) Staff

- i) Survey
- ii) Flu/Covid vaccine rates
- iii) Sickness

A pragmatic controlled
before-and-after study.

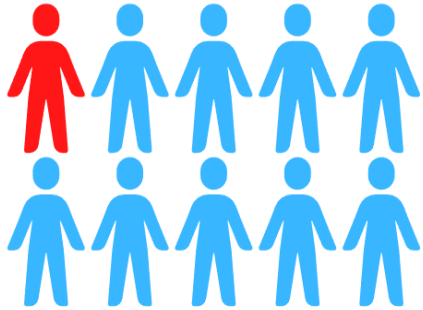
AAirDS

Implimentation of air disinfection to
prevent hospital-acquired infections in
medicine for older people wards.

Why are we studying environmental factors

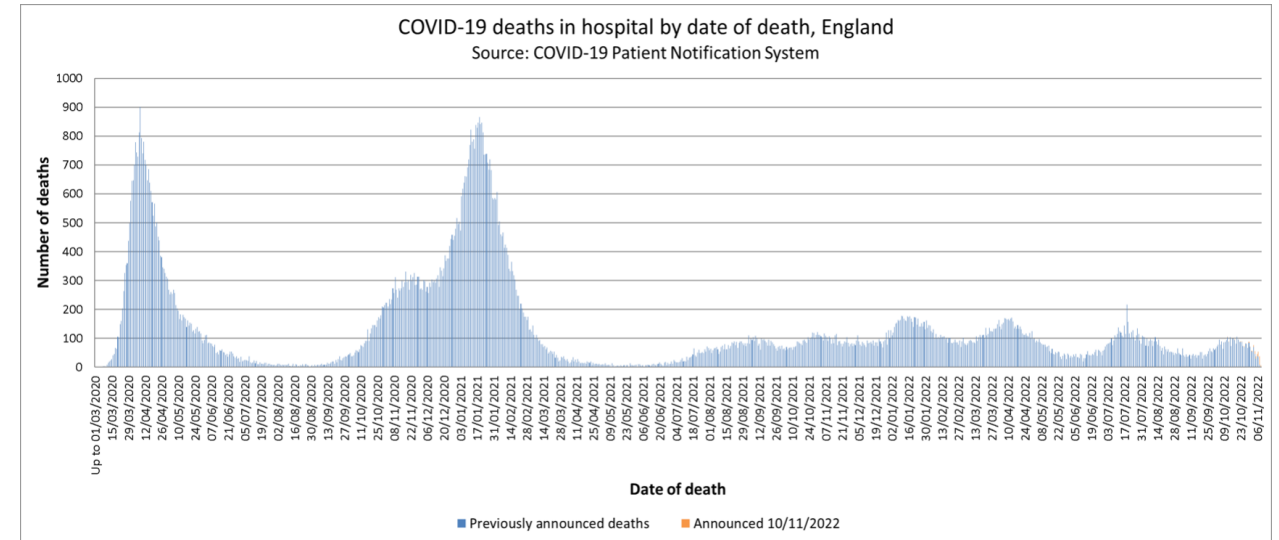


In many settings, from hospitals to ambulatory and long-term care, HCAI appears to be a hidden, cross-cutting problem that no institution or country can claim to have solved yet.



**1 OUT
OF 10**
Will acquire a
healthcare acquired
infection

World Health Organization 2011



Covid a new long term HCAI for hospitals to deal with. Staff sickness, bed shortages, increases in consumables and reducing budgets. We need a pragmatic approach to curb and reduce HCAI's.

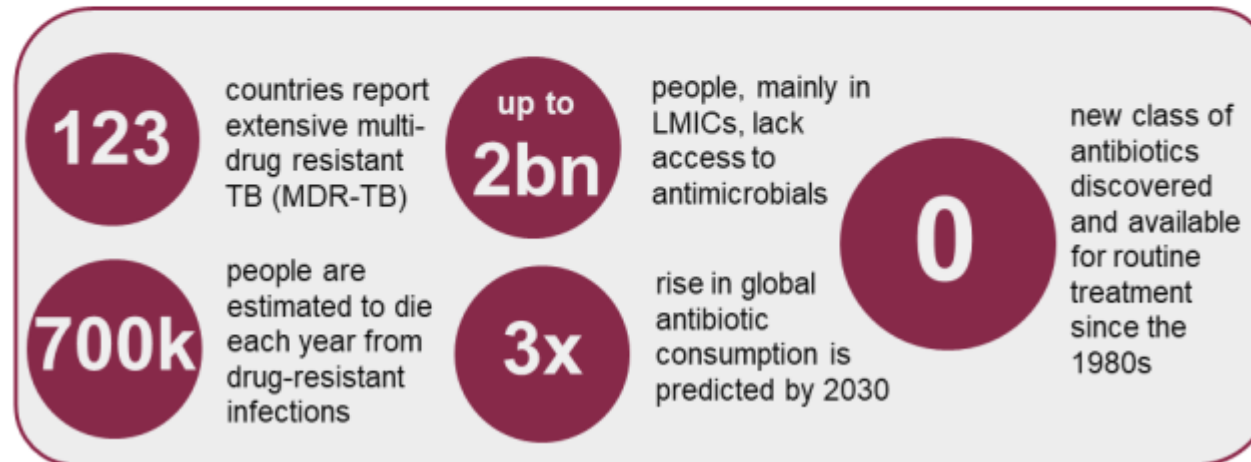
Tackling antimicrobial resistance 2019–2024



The UK's five-year national action plan

Already, AMR infections are estimated to cause 700,000 deaths each year globally. That figure is predicted to rise to 10 million, alongside a cumulative cost of \$100 trillion, by 2050 if no action is taken. AMR also threatens many of the Sustainable Development Goals (SDGs). [The World Bank estimates](#) that an extra 28 million people will be forced into extreme poverty by 2050 unless AMR is contained.

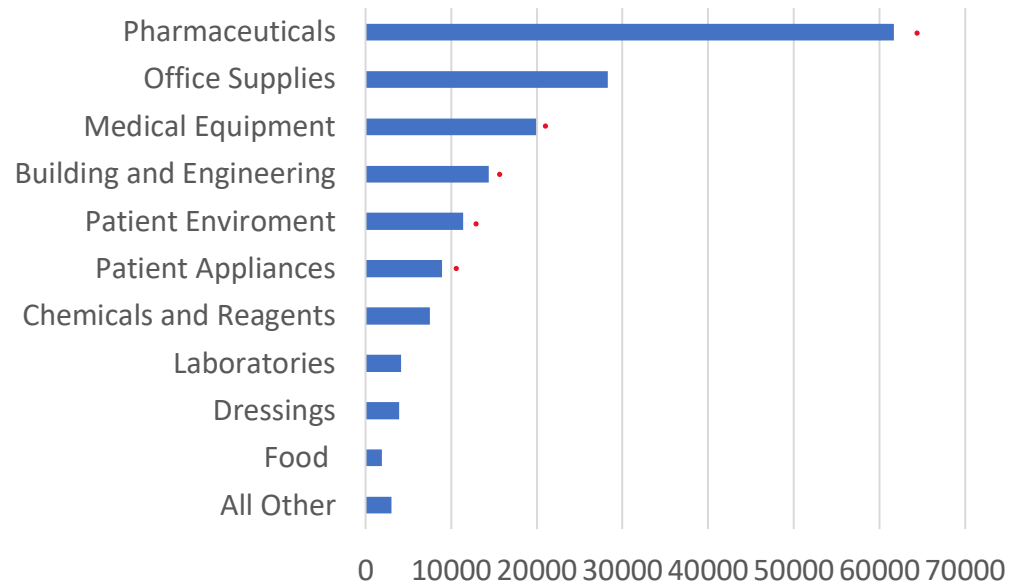
Figure 1. The rise and spread of AMR ¹



What & how we consume in the NHS



Indication of the tonnes of co2 embedded

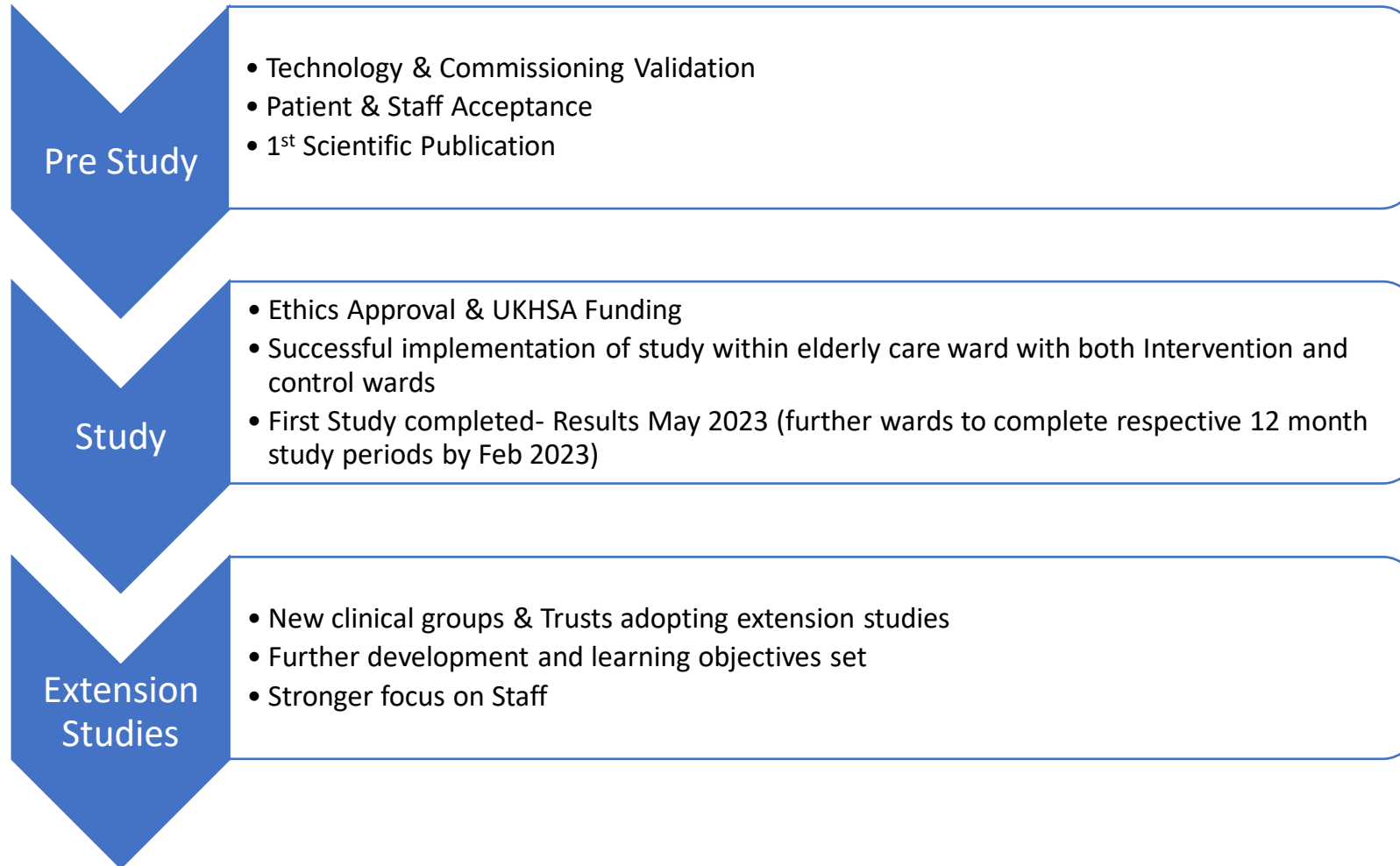


■ Indication of the tonnes of co2 embedded
Cambridge Universities Hospitals 2022

- Health care acquired infection reductions will reduce co2 consumption per patient.
- In a survey conducted by NHS England, the trusts that responded 55% or above did not meet any ventilation standards.
- Strategies to reduce infection include ventilation upgrades, however in most cases not feasible.
- Staff sickness averages risen from <2% to +8%
- The risk of acquiring HCAI is significantly higher in intensive care units (ICUs), with approximately 30% of patients affected by at least one episode of HCAI with substantial associated morbidity and mortality.



Brief overview of study milestones



Impact of supplementary air filtration on airborne particulate matter in a UK hospital ward

Sloof D1, Butler MB2, Peters C3, Conway Morris A4,5,6, Gouliouris T6, Thaxter R7, Keevil VL2,6, Beggs CB8*

Figures

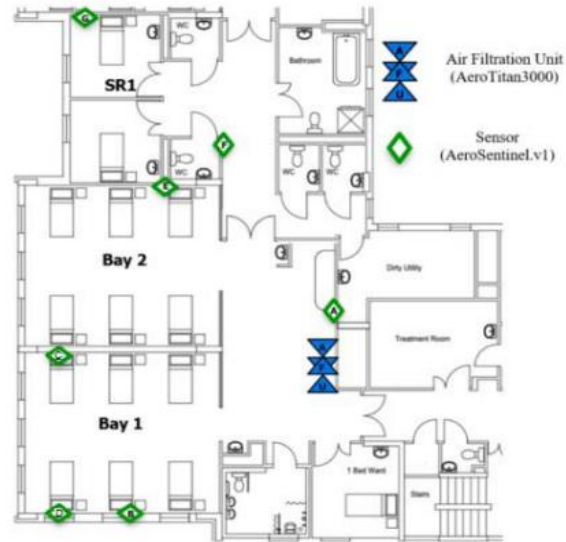


Figure 1. Layout of the medicine for older people ward showing the positions of the AFU and sensors.

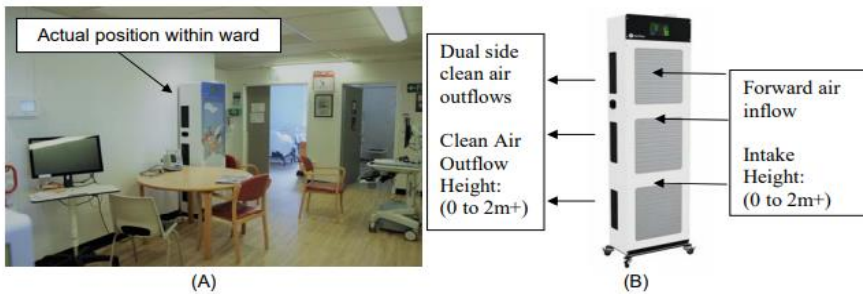


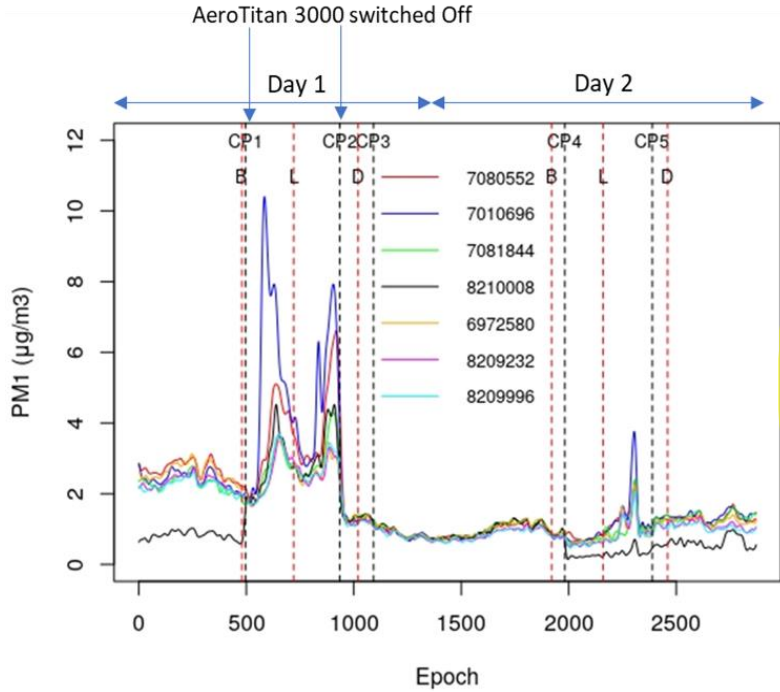
Figure 2. (A) Photograph showing the location of the AFU in the ward, and (B) detail showing the air intakes and outlets of the AFU.

- Natural Experiment when the ADU was switched off for a period of time understanding its effect to the environment

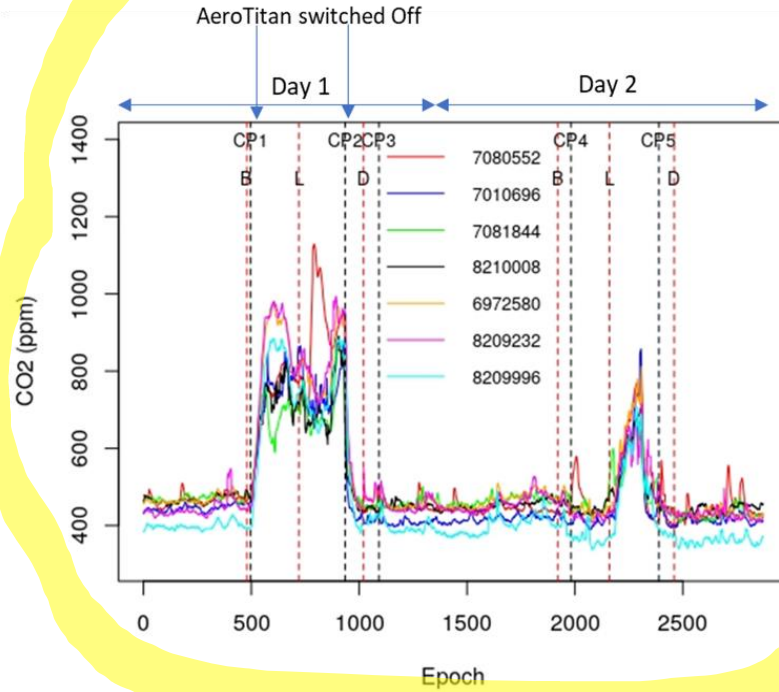
Practical implications

- Aerosols can freely migrate throughout whole wards, suggesting that social distancing measures alone are not enough to prevent SARS-CoV-2 transmission.
- Appropriately sized supplementary room air filtration, if utilised correctly, can greatly reduce aerosol levels throughout ward spaces.
- Air filtration devices are often placed in rooms without any consideration given to their performance. It is therefore important to commission air filtration devices using PM and CO2 sensors before they are utilised in order to demonstrate that they are effective throughout entire ward spaces.

Fine Aerosols (Particulate Matter)



Co2

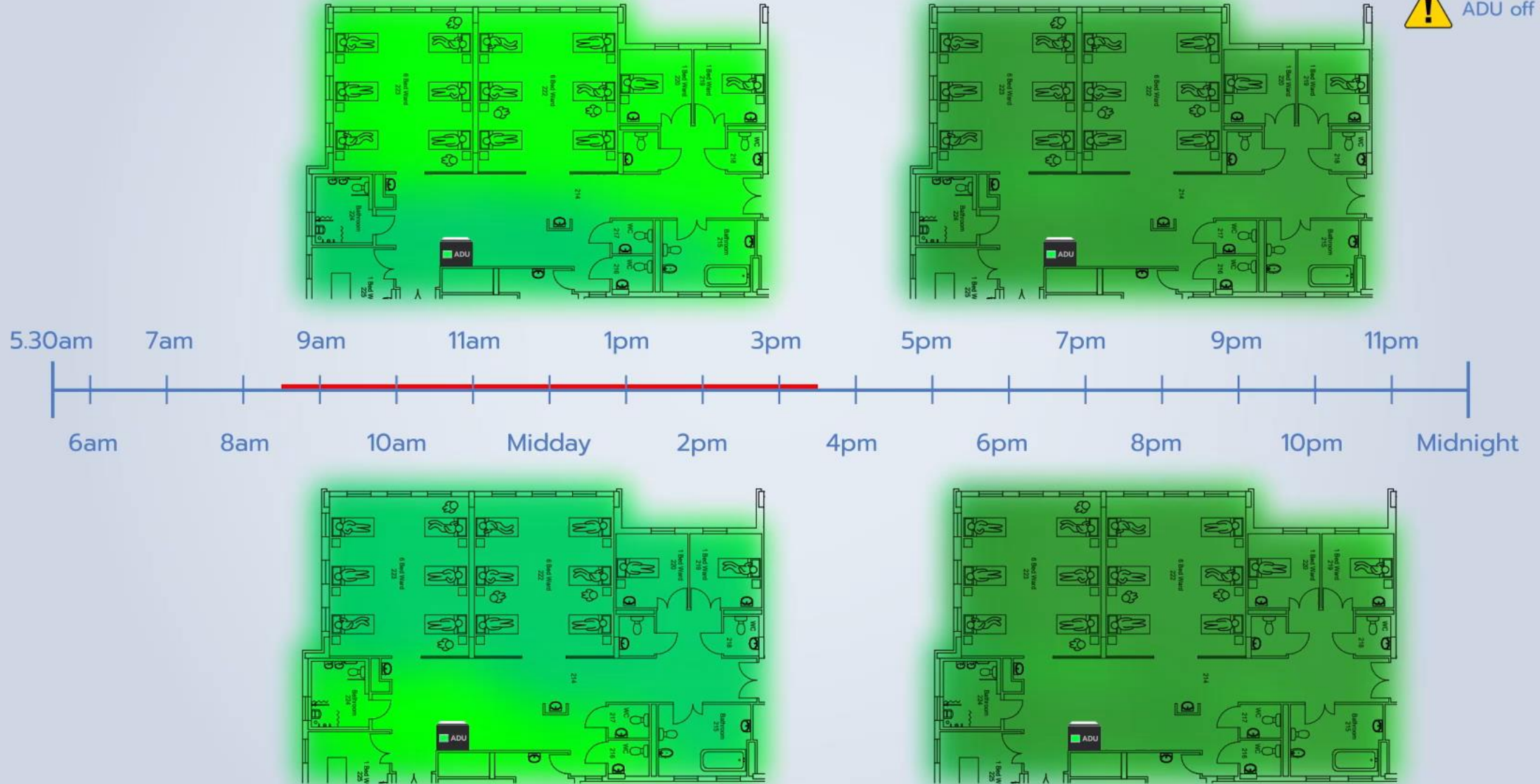


Unexpected finding
huge co2 reductions

- Can using the Air disinfection units supplement poorly ventilated spaces through strong clean and recirculation? – Answer **Perhaps** we need to fully understand the science first!

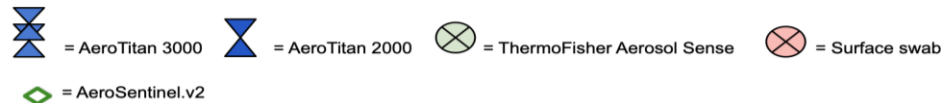
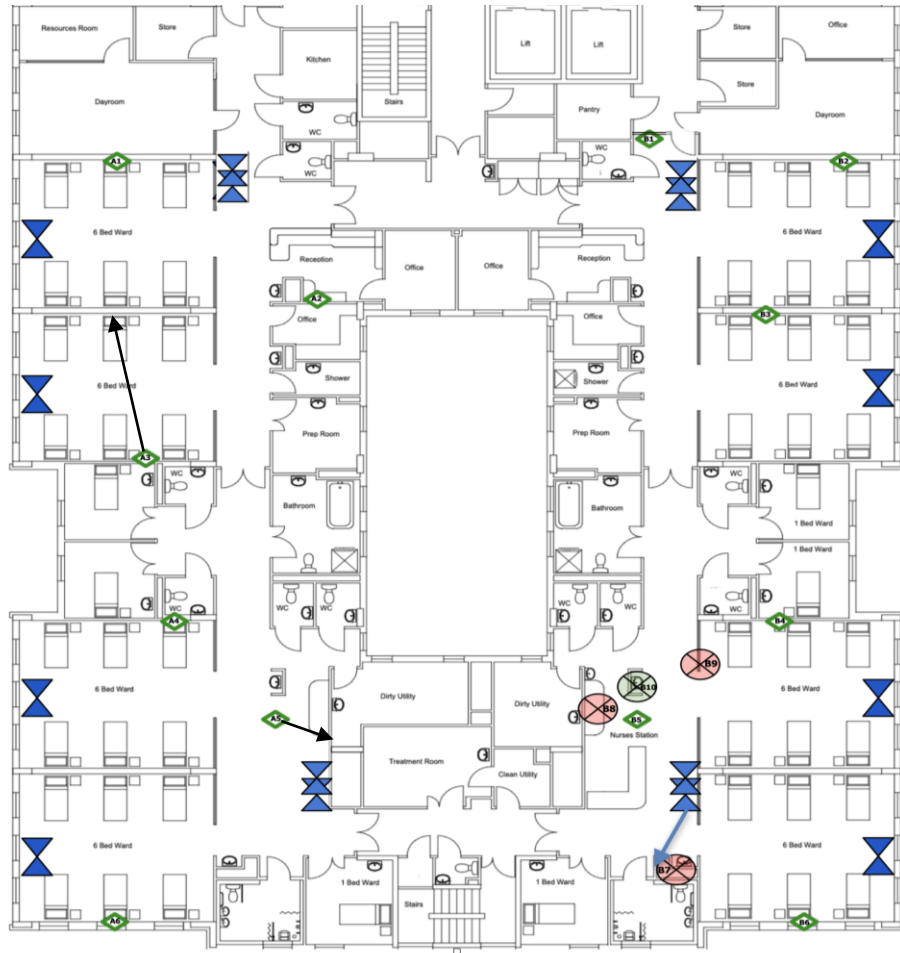


 ADU off



Study Layout

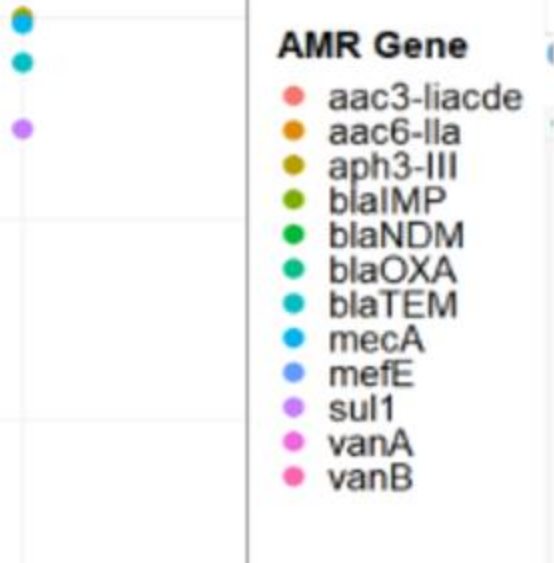
- Study conducted on elderly care wards with poor ventilation for 1 year 3 months (Sept 2021-Feb2023)
- Worst performing wards selected regarding HCAI's
- Mirrored wards, same patient groups and layout
- Control wards with monitoring no interventions



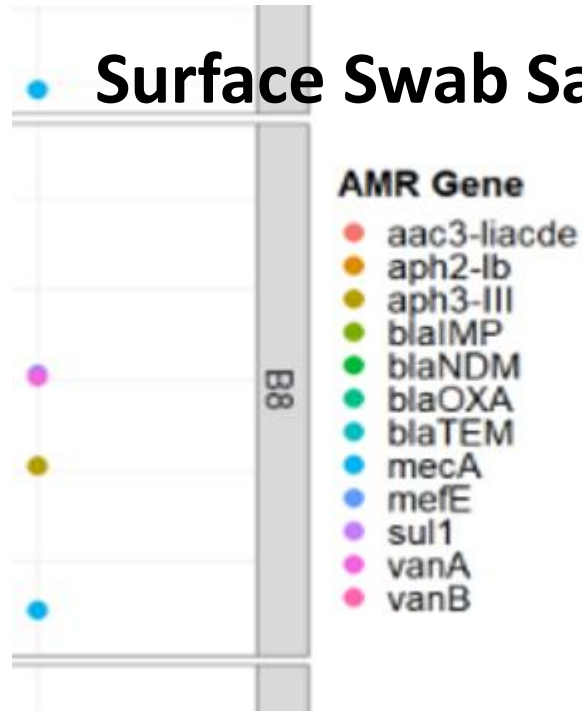
Prevention should start from the air



Extracted From the Air

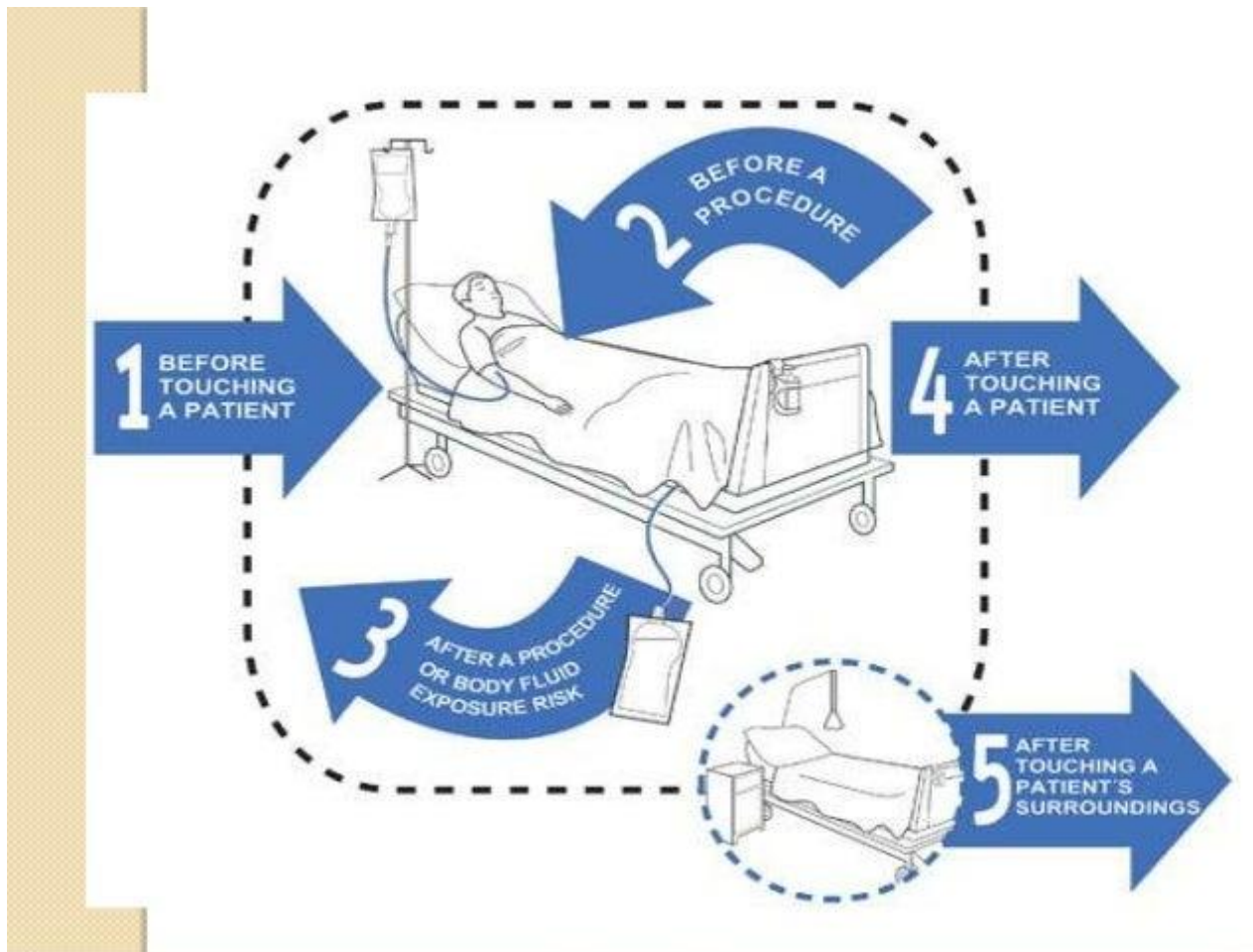


Surface Swab Samples



We extract almost the same organisms in the air as on surfaces throughout the ward

Long Road to De-stigmatise transmission



- Contact transmission still likely the primary however we need to build a wider acceptance that more is happening than we currently understand
- Biodiversity routes to various surfaces are via air, however not necessarily the mode of transmission.

Observations is the Intervention working?

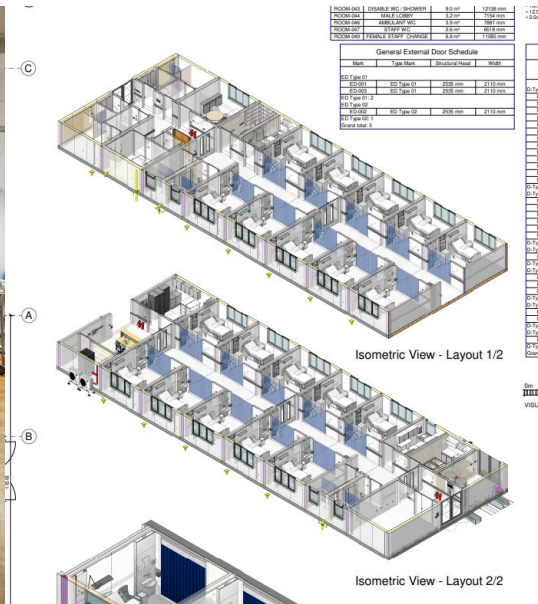
We see significant positive reduction trends and are hopeful for statistical relevance, Sars-Cov2 will be a proxy



- Worst performing ward to possibly the best within the trust regarding Sars-Cov2 transmission*
- Secondary Sars-Cov2 transmissions thus far appear lower*
- No more odours within the ward
- Staff feedback positive with noticeable changes to ward environment and mental health
- Est cost saving £205k-£1.2m

*Final study report/publication due spring 2023

Latest visual- nightingale ward



- Natural ventilated space
- Temp ward 10 years means does not need HVAC (HTM loophole)
- Zonal approach means between each fire door was a control zone for recirculation
- 4 zones meant 4 units each working independently and communicating.
- If a unit is switched off the other units recognise this and will adjust flows.
- Equivalent air change rate of 8 (lower than multi occupancy min 10)

AAirDS – Extension Highlight

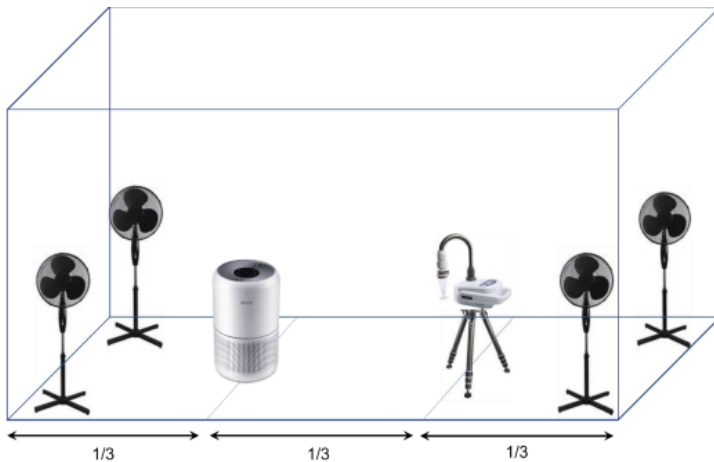


- Extensions actioned in 9 more trusts however ELFT is an extension study highlight due to strong focus also on staff sickness and improvements and a strong focus on ligature risk.



- Trust implementation scheduled for Dec 2022

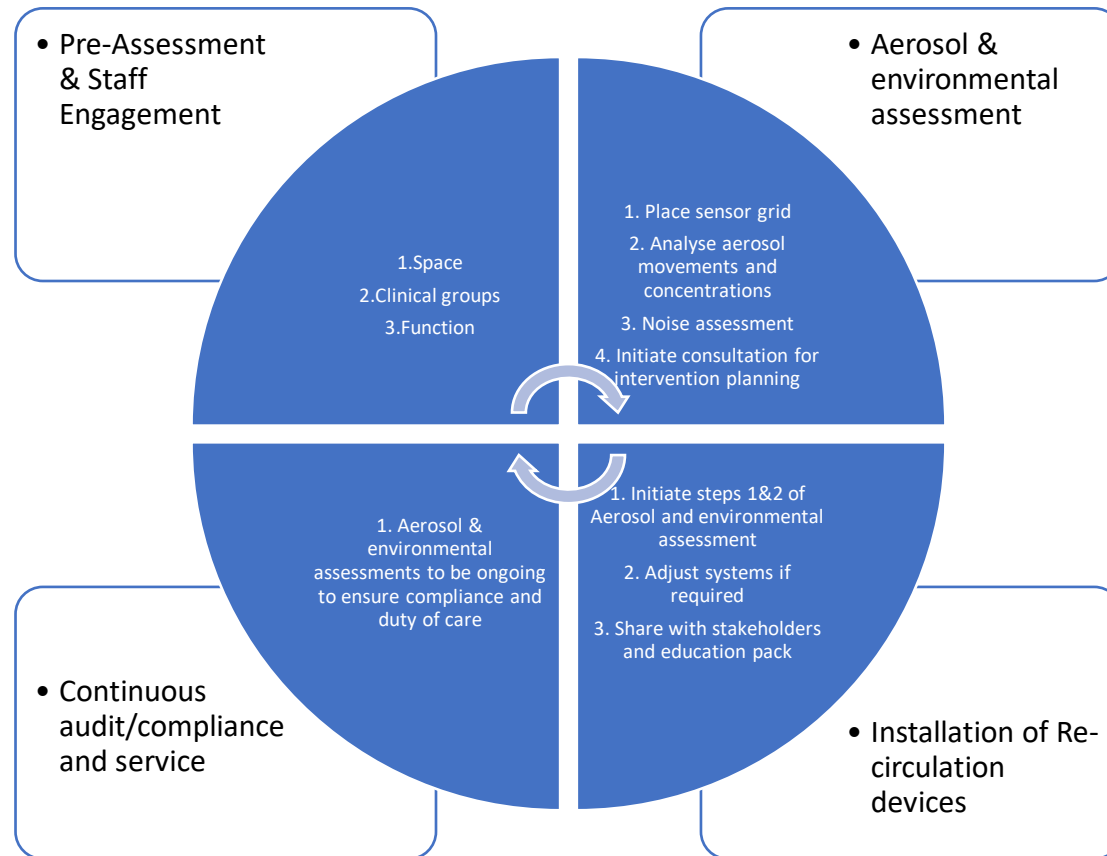
Why portable is not the answer



Typical Lab set up for air purifier and air disinfection (HEPA, UVC)

- Devices are Lab tested in highly circulated controlled small spaces, no reflection to the environments they will occupy
- Units have to be calibrated to an environment, portability takes the audit control and safety aspect away
- Anything portable negates the commissioning and infection reduction risk
- Air Purifier, Air disinfection, Portable all unlikely to be in the vocabulary for a successful intervention

Steps for patient safety and infection control improvement



System should not impede or increase workload in any function within the trust but work collaboratively to improve the environments patient, staff and visitors occupy

Why recirculation will be implemented across the NHS



- Scientific study has shown with the appropriate commissioning Infection rates can greatly reduce (we currently have 7 studies either finished ongoing or starting)
- Significantly improves the health and safety of both staff and patients
- Technology template has been developed and will be shared by Air Purity and Cambridge University Hospitals
- Quick and cost effective to implement, meaning a longer term strategy can be prepared for ventilation
- Auditable process developed meaning transparent focus on environmental care
- Studies conducted are reported to the following: NHS England, UK Health and Securities Agency, Health Executive, CQC, Department of Health, Infection Prevention Society, World Health Organisation, SAGE, CIBSE, IHEEM & others.
- Recirculation aids poor ventilated spaces, also tackles costly non ventilated areas, all systems are designed to at least provide an equivalent air change rate of **8+** (depending on area)
- Energy efficient and adaptable
- Big step towards NET ZERO

Engagement groups



- IPC
- Estates & Facilities management
- Independent Authorising Engineer, Ventilation
- Clinical Team
- Ward Team
- H&S
- Research and Innovation
- Exec Team
- Ventilation Safety Group
- Health and Safety Committee
- People Participation and Staff Side representatives

Please follow AAirDS

Any Questions Please contact Darren Sloof directly on

M: 07712116467

E: darrensloof@airpurityuk.com



SPEAKING NOW



Mrs Zoe Powell-Wiffen

Matron, Emergency Care

Northern Lincolnshire & Goole NHS Foundation Trust

I will be discussing...

“The human factors of
designing a new built
Urgent and Emergency
Care Centre”



The NHS Smart Estates Conference 2022



UP NEXT...



**matrix
booking**

The logo for Matrix Booking. It features a stylized 'S' shape on the left, composed of three horizontal bars that curve and connect to form a continuous, wavy line. The color transitions from light green at the top to bright yellow at the bottom. To the right of this graphic, the words "matrix" and "booking" are stacked vertically in a bold, dark blue, sans-serif font.

SPEAKING NOW



Matt Etherington

Head of NHS and Corporate Sales
Matrix Booking

I will be discussing...

“The Challenges of
hybrid working in a
changing professional
environment”

Matrix Booking Presentation

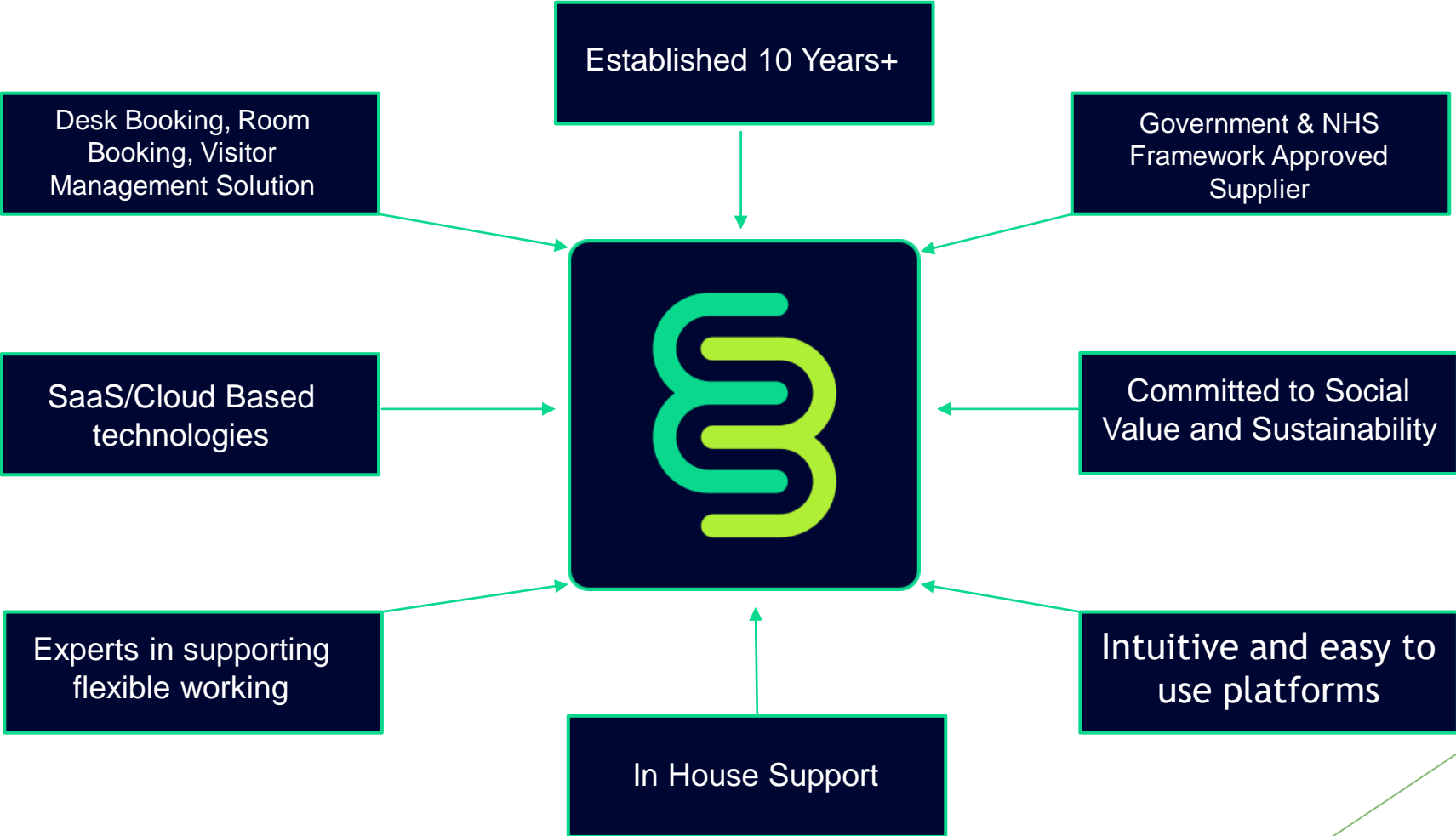


16th November 2022

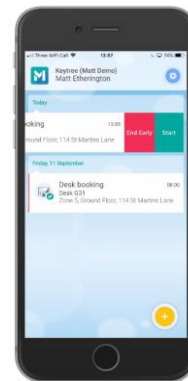
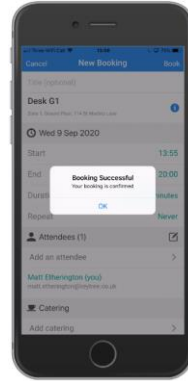
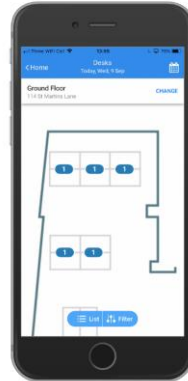
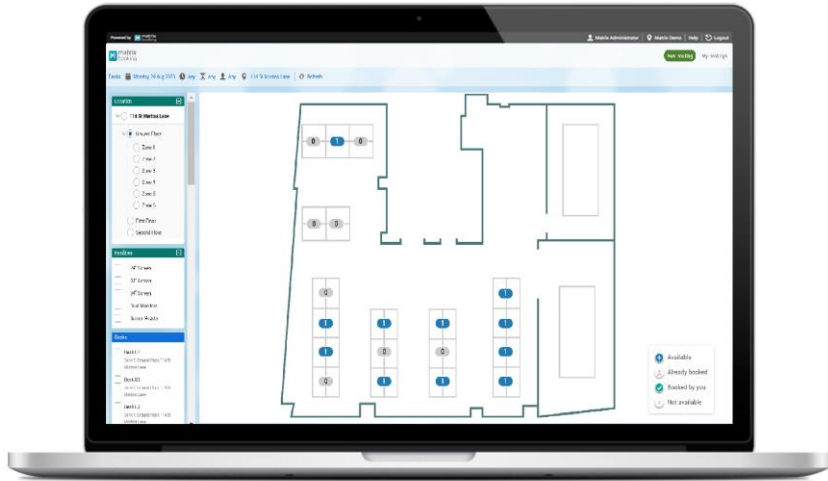
Presentation Themes

- ▶ About Matrix Booking (3 minutes..)
- ▶ Why organisations across all sectors are introducing hybrid working
- ▶ Challenges specific to the NHS in doing so
- ▶ How technology can help
- ▶ Outcomes, benefits, the future
- ▶ NHS Client Case Study

About Matrix Booking



About Matrix Booking



Proud to Work With



NHS/Health

Government

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Local Authority

ual: university of the arts london

OTIS

BAE SYSTEMS

next

nationalgrid

The Conference Series

1. Government Property 2030 Conference (Manchester) - 7th September 2022
2. Public Sector Proptech 22 (London) - 2nd November 2022
3. NHS Property 2022 (London) - 15th November 2022
4. NHS Smart Estates Virtual Conference - 16th November 2022
5. WORKTECH London- 22nd November 2022
6. Hybrid and Hubs Webinar (Online) - 19th January 2023
7. Government Property 23 (London) - 8th February 2023



Email questions and panelist nominations to:
HybridAndHubs@matrixbooking.com

Panelists

hybrid and hubs

by  matrix
booking



UK Health
Security
Agency



Lancashire Teaching
Hospitals
NHS Foundation Trust



Ministry
of Justice



HM Revenue
& Customs



Transport
for London



Crown
Commercial
Service



Ashford and
St. Peter's Hospitals
NHS Foundation Trust

BARNET
LONDON BOROUGH



Panel Themes

- ▶ How has hybrid working and the past three years changed the way staff work in your organisation?
- ▶ What were the drivers behind the changes your organisation has made to ways of working?
- ▶ What lessons can be learned from the use of Government Hubs and shared space?
- ▶ How do we gently encourage staff back to the office on hybrid arrangements?
- ▶ Can you talk a bit about the logistics, and liability, of supporting NHS staff (both back-office, and clinical) working from home?
- ▶ How do you think hybrid working will continue to evolve public sector working?

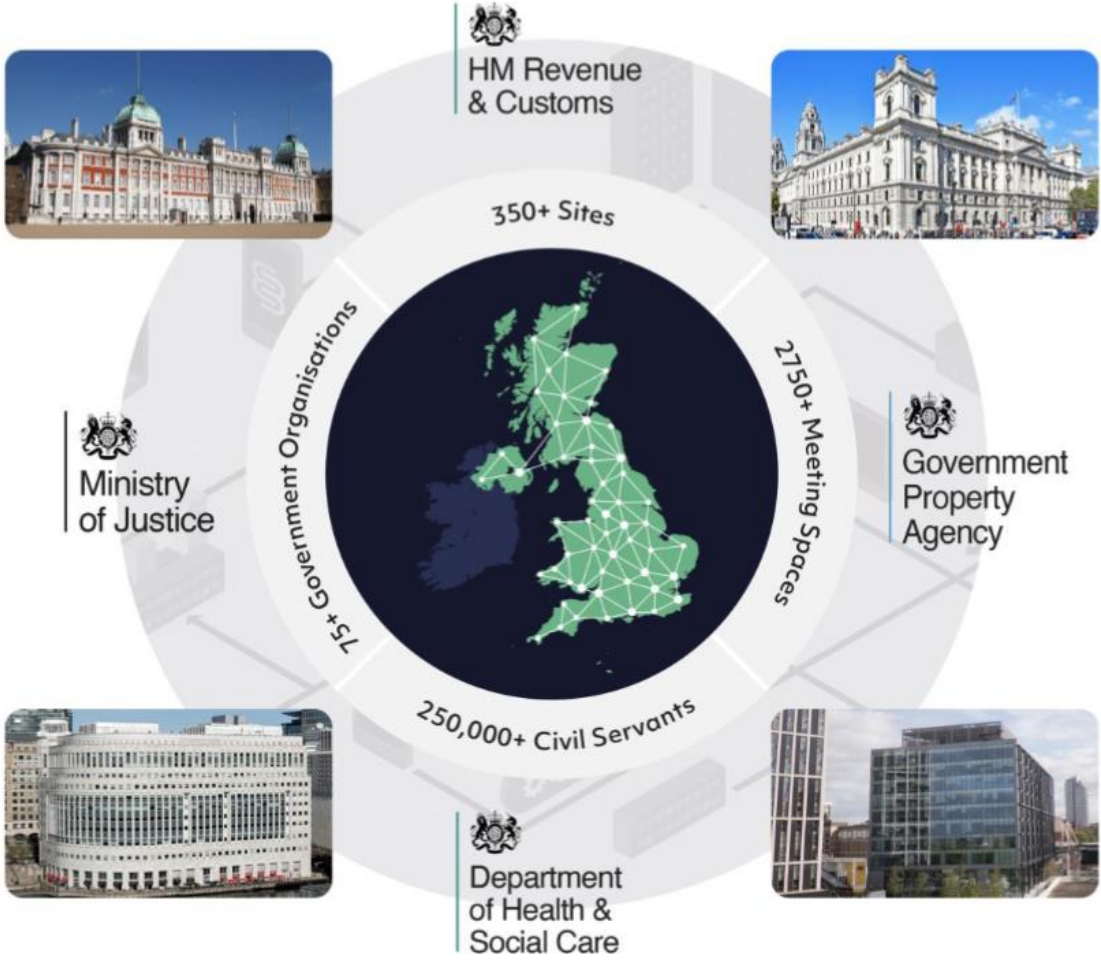
Lessons learnt so far

- ▶ Hybrid working is a constantly moving target, an ‘ongoing experiment’
- ▶ Occupancy is low, but increasing..
- ▶ There often now needs to be a reason to come into the office
- ▶ We are only now close to the point of evaluating progress so far, and adapting
- ▶ Use tech to make the adoption of flexible working as seamless as possible
- ▶ Staff engagement is key - are we imposing or are we engaging?
- ▶ Data, data, data...

The Future

- ▶ Hybrid working is here to stay, we need to embrace and extract value from it
- ▶ Consult, adapt - how to staff *want* to work?
- ▶ Estate rationalization through flexible working - savings on estate costs
- ▶ Will the cost of living change peoples work habits/location?
- ▶ Provide *more* reasons for people to come into the office
- ▶ “The office should be a magnet, not a mandate”
- ▶ Further encourage collaboration
- ▶ More sharing of bookable resources between NHS organisations

Public Sector Resource Sharing



Matrix Booking 'Cross-Org'

- ▶ Creation of sharing network between organisations using Matrix Booking
- ▶ Sharing of certain resources between organisations
- ▶ Each organisations access their own platform
- ▶ Access to private sites/resources, and shared sites/resources
- ▶ Complete data privacy and security
- ▶ Usage reporting - local users, external users

NHS Resource Sharing



Shared resources

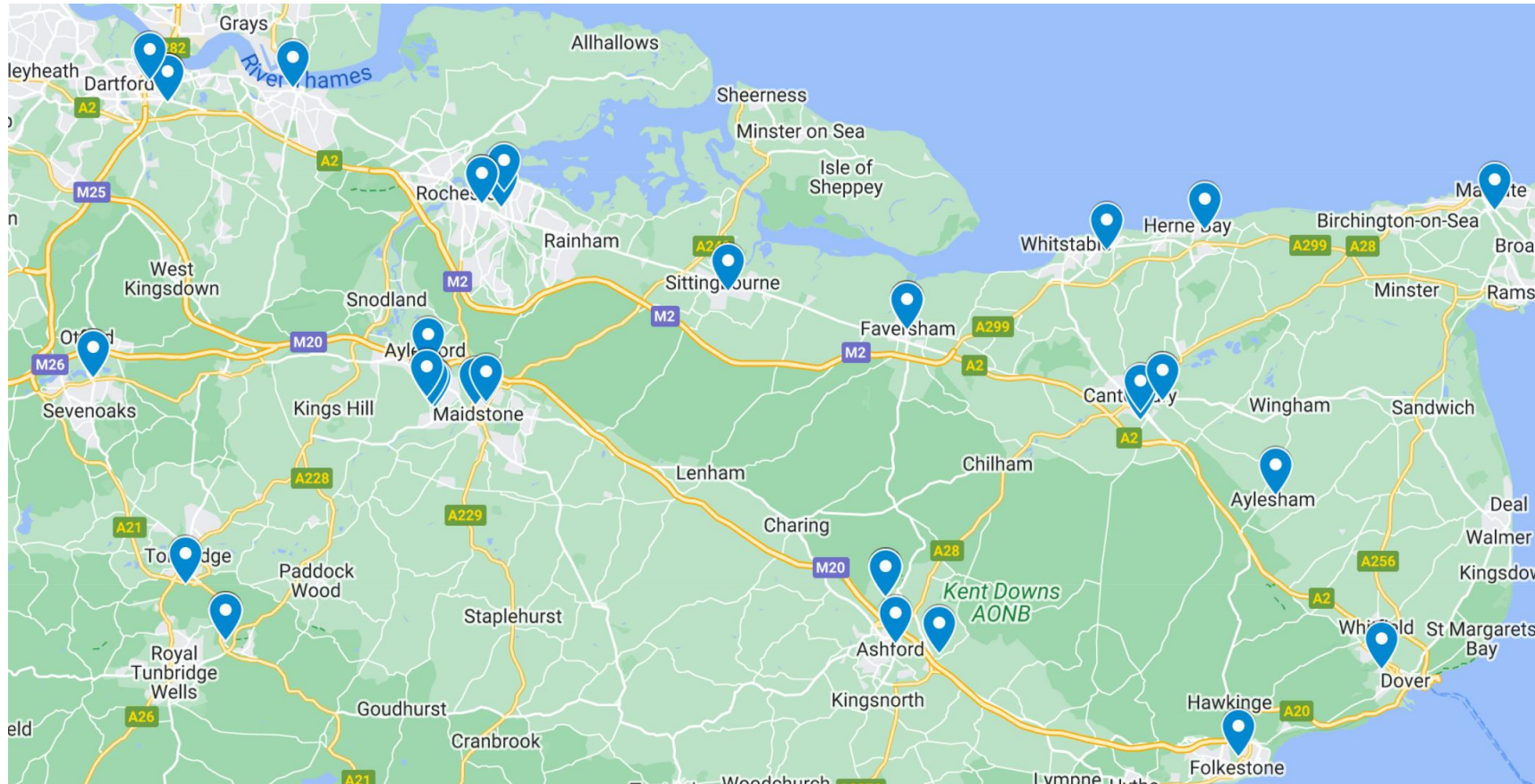
Access to cross-trusts estate

Secure sharing of certain resources (rooms, desks, clinical spaces)

Complete privacy and data security

Each Trust access via their own platform

NHS Resource Sharing



Matrix Booking Case Study



About Kent and Medway NHS

- ▶ Newly formed Integrated Care Board
- ▶ Serving 1.8 million people
- ▶ Created through a merge of 7 separate CCGs
- ▶ Sites across Kent
- ▶ Full adoption of flexible working
- ▶ Matrix Booking for: room booking (phase 1), desk booking (phase 2) parking (phase 3)
- ▶ 1,000 active Users in the system
- ▶ Booking 450+ desks, 30+ Meeting Rooms



Kent and Medway

How NHS Kent and Medway turned to Matrix Booking to facilitate flexible working

- ▶ Initially set out before the pandemic, the organisation sought to give workers more flexibility around how and where they operate. And in doing so, the ICB looked to make its own setup more efficient. In recognising this, it reduced office usage, scaling down its 13 premises to seven.
- ▶ This consolidation of real estate also reflected a consolidation of the service itself, having merged seven Clinical Commissioning Groups (CCG's) as was, into one all-encompassing organisation just prior. For both drastic restructurings to succeed, it was recognised that digital assistance was required, and Matrix Booking was the chosen facilitator of this new dynamic.

***“It was always our long-term plan to move towards hybrid working, and then the week we merged into one organisation, we were plunged into lockdown. Not only did the situation accelerate the process, but it compounded our overall decision to promote this kind of working.*”**

The right solution at the right time

- ▶ Matrix Booking's resource scheduling solutions were implemented at an ideal time for Darren and the ICB team, with employees quickly attuned to a new way of working enforced by those initial lockdown months.
- ▶ Not only did the organisation need to show that they were tangibly enabling a longer-term solution to achieve a positive home-office balance, but they had to do so to a newly merged cohort of employees who would have ordinarily been required to travel further to work than before.
- ▶ For both drastic restructurings to succeed, it was recognised that digital assistance was required, and Matrix Booking was the chosen facilitator of this new dynamic
- ▶ Employees were quickly attuned to a new way of working enforced by those initial lockdown months. Not only did the organisation need to show that they were tangibly enabling a longer-term solution to achieve a positive home-office balance, but they had to do so to a newly merged cohort of employees who would have ordinarily been required to travel further to work than before.

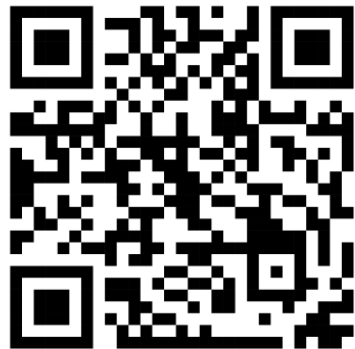
“As you can imagine in the public sector, efficiency is hugely important, so it’s critical that we look at usage rates for each office, to see where traffic is quieter or busier, and at what times. It also helps us get a better understanding of our organisation and our people, as we can see where productivity is best achieved”

In Summary

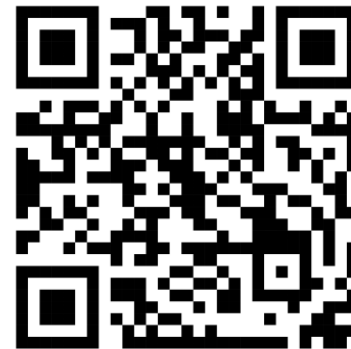
- ▶ “It has been, and continues to be, a period of so much change, and those changes would have been a lot more difficult had Matrix Booking not been involved. For everything from track and trace during COVID, to signing in and seeing who’s in-office, to giving people desk and room options, to evacuation procedures, and the plans we now have moving forward. Matrix Booking has been so responsive and always open to new ideas and suggestions. The relationship feels personal”
- ▶ Darren Lightbody, Office Manager, NHS Kent and Medway

Thank You!

***Matrix Booking
Events and
webinars:***



***Download the
case study here:***



www.matrixbooking.com



The NHS Smart Estates Conference 2022



UP NEXT...

FlowForma[®]
Empowering Process Automation

SPEAKING NOW



Paul Stone
Product Strategist
FlowForma

I will be discussing...

“Transform NHS Estates
with Digital Process
Automation”

SPEAKING NOW



Pete Waddingham

Net Zero Lead
AHSN Network

I will be discussing...

“The role of the Academic
Health Science Network in
Supporting Innovation into
the NHS”



The NHS Smart Estates Conference 2022



UP NEXT...

QTS

QUALITY **TRUSTED**
SOLUTIONS

SPEAKING NOW



Joel Glover

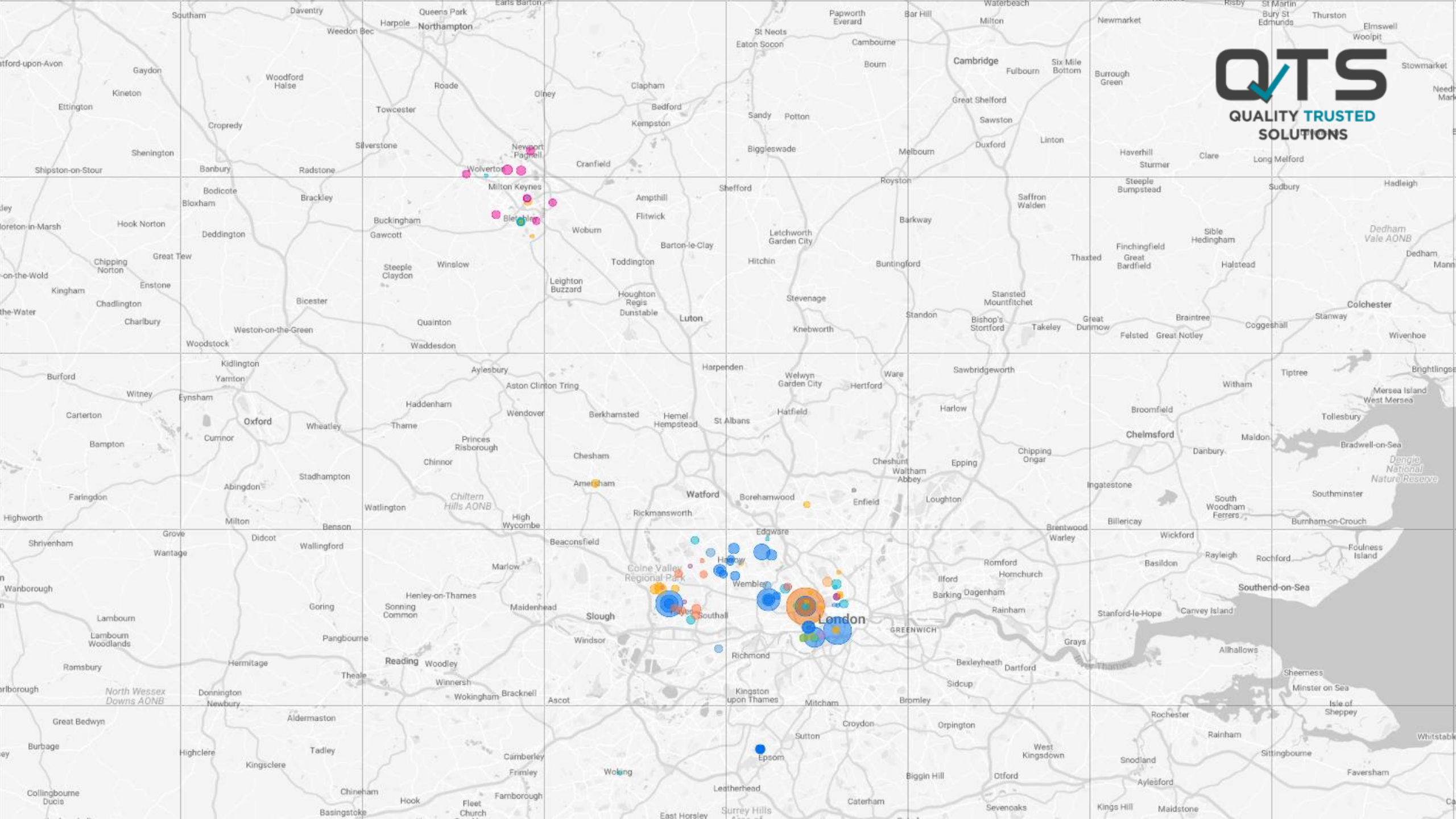
Commercial Director
Quality Trusted Solutions

I will be discussing...

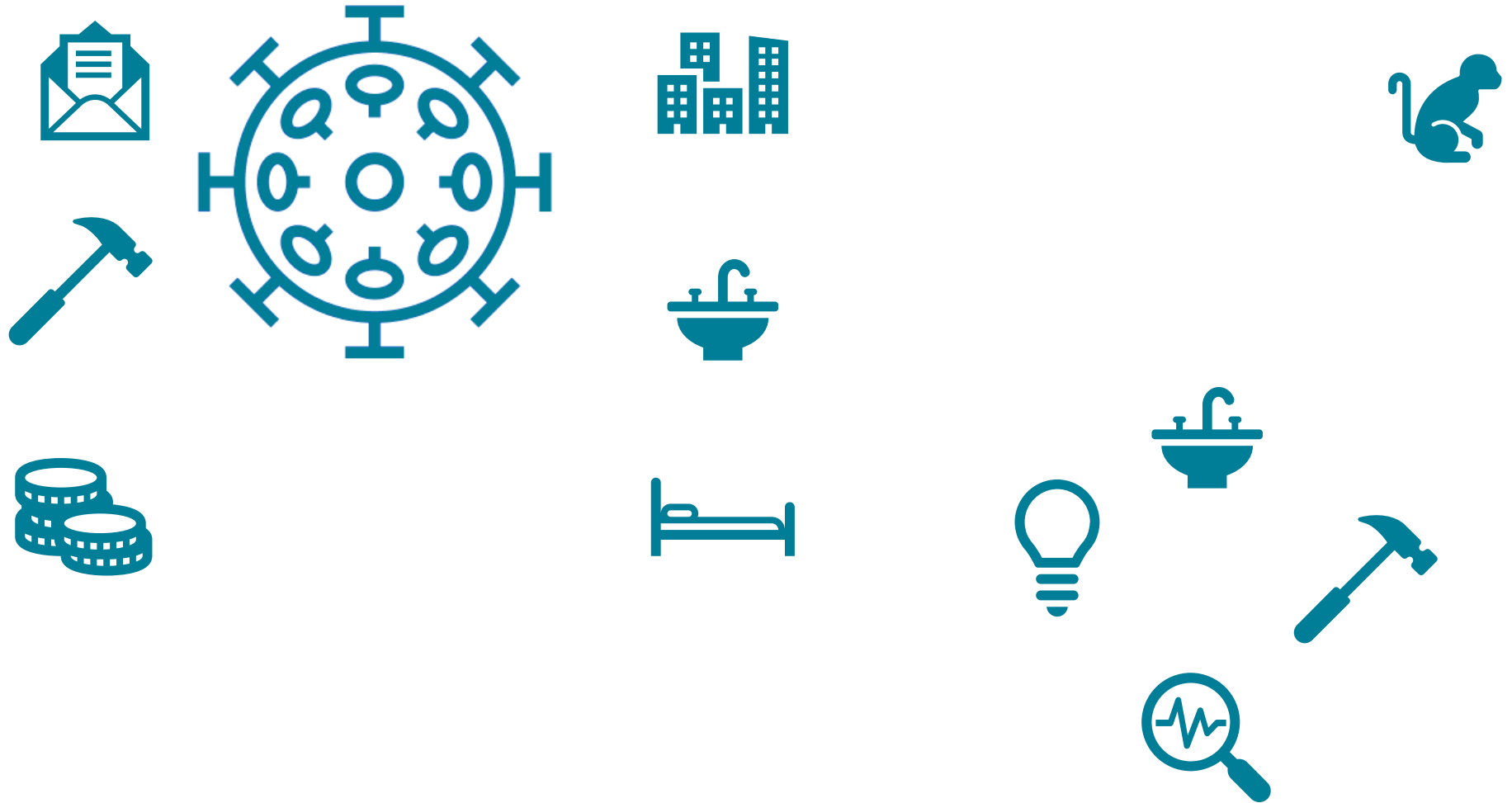
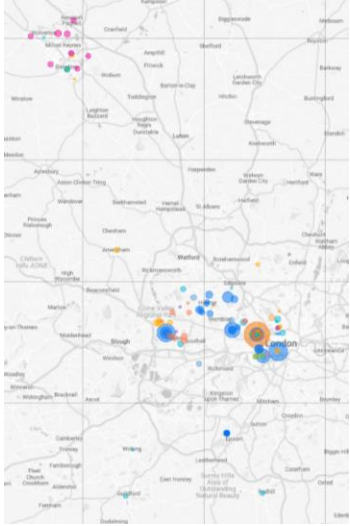
“CNWL and the business
case for digitisation”



Building the case for digitising your estate



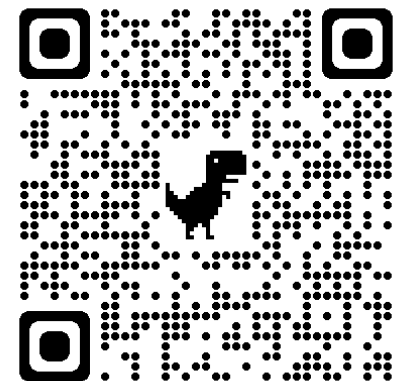
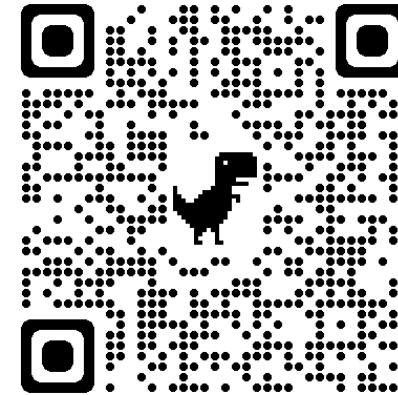
The case for digitisation



Join us

We want to work with colleagues to drive change in the NHS

- ▶ QTS is growing and maturing – our product offer is growing and maturing, and we're looking to develop use cases within CNWL which we then roll out to partners across the NHS.
- ▶ Social media links and emails are in the slides, QR codes are to the right, please do get in touch!



The NHS Smart Estates Conference 2022



SPEAKING NOW



Mark Songhurst

Programme Lead - Scan4Safety
Leeds Teaching Hospitals NHS Trust

I will be discussing...

“Effective Location
Management - Benefits
Beyond NHS Estates”

SPEAKING NOW



Dr Joanna Harris

GP Partner/Clinical Director
Redlands Primary Care/Mid Devon Healthcare

I will be discussing...

“Redlands - Building a
purpose built GP Premises
for modern day Primary
Care”



THANKS FOR ATTENDING

The NHS Smart Estates
Conference



2022

The NHS Smart Estates Conference 2022



REGISTER FOR OUR UPCOMING EVENTS!

