

# *The AHSN Network*

## **Estates and Facilities Innovation Exchange**

WiFi: EAHS Network  
Code: healthnet2019

**#InnovationX  
@AHSNNetwork**

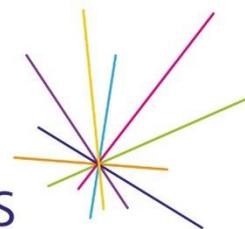




*The***AHSN***Network*

*Eastern* **AHSN** 



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

# The AHSN Network

## Agenda

- **Welcome and introduction**
- **Scan4Safety**
- **Supporting cutting edge healthcare through effective contract management**
- **Innovation in the workplace**
  
- **Break**
  
- **Innovator pitches**
- **Innovation zone introduction**
  
- **Lunch**
  
- **Innovation Zone sessions**
  
- **Closing statements and next steps**
- **Networking and event close**



# The AHSN Network

A connected  
'Network of  
Networks'



# *The AHSN Network*

We are **catalysts** for innovation

We **connect** partners across sectors

We **create** the right conditions for change

We operate locally and collaborate as a national **collective**



# *The AHSN Network*

**Our continuing mission is to find, develop and support healthcare innovation**



**Improving lives**



**Saving money**



**Driving economic growth**

# The AHSN Network

## National programmes and priorities



**Adoption & spread programmes**



**Innovation Exchange**



**Innovation Pathway**



**Digital & Artificial Intelligence (AI)**



**SBRI Healthcare**



**NHS Innovation Accelerator (NIA)**



**Innovation & Technology Payment (ITP)**



**Patient safety**



**Research**

# *The AHSN Network*

## **Innovation Exchanges**

- **National network of Innovation Exchanges**
- **Funded by the Office for Life Sciences, delivered locally by each AHSN**
- **Bring together health and care partners with industry and third sector innovators to match health needs with potential solutions**
- **Respond to local health challenges identified by STPs and ICSs**
- **Identify products with most potential for national impact for review by the Accelerated Access Collaborative**



# *The AHSN Network*

## **Innovation Exchange**

- 1. Defining needs – support to understand the needs that could respond to innovation. Support to identify proven solutions**
- 2. Innovator support and signposting – consistent and coordinated offer to innovators**
- 3. Real world validation – testing and evaluating innovations in local systems**
- 4. Spread and adoption of supported innovations – adoption of innovations identified by the Accelerated Access Collaborative and those the AHSNs identify for both regional and national adoption**



# *The AHSN Network*

## **Estates & Facilities**

- **Request received from three STPs in Eastern**
- **Innovations presented to East Midlands drove exploration with STPs**
- **Horizon scan commissioned from the Evidence Centre by Eastern**
- **July 2019 – advisory panel convened**



# The AHSN Network

## Challenge statements:

1. How might we improve estates utilisation across a health and care system through use of innovations?
2. How might we reduce energy and wide utility costs in our health and care estates using clean tech?
3. How might we support better day-to-day operations and maintenance of health and care premises?
4. How can we assist people with complex needs to navigate their way around our premises (wayfinding)?



# James Mayne Scan4Safety



**University Hospitals of Derby and Burton  
NHS Foundation Trust:**

SCAN4SAFETY

# Introduction

- Derby Teaching Hospitals merged with Burton Hospitals 1<sup>st</sup> July 2018
- 1850 beds over five sites
- Number of theatres 52 (35 Derby / 17 Burton)
- We carry out more than 300 elective procedures each working day
- Over 12,000 staff plus 1,000 + volunteers
- Annual turnover of £750+ million
- One of six Scan4Safety Demonstrator sites who have delivered the Programme

## Scan4Safety?

Q. Potential to help with managing our estates?

# Key Scan4Safety Principles – The foundations



## Right Patient

Setting standards to make sure we always have the right patient and know **what** product was used with **which** patient, **when**.



## Right Product

Setting standards to make sure our staff have **what** they need, **when** they need it.



## Right Place

Setting standards to make sure that patients and products are in the right place.



## Right Process

Setting standards and implementing common ways of working to deliver better and more easily repeatable patient care.

### Core Enablers

#### Location Identification

- Implementing GLNs, a global standard for location identification

#### Patient Identification

- Wristbands GS1 compliant can be scanned by patient systems
- Can capture staff too!

#### Catalogue Management

- All relevant processes use the GTIN as the primary product identifier and systems updated
- Could hold equipment catalogues

### Primary use cases

#### Purchase-to-Pay

- POs, ASNs, Invoices to be exchanged electronically using GS1 / PEPPOL

#### Inventory Management

- Ability to electronically trace and manage products to discrete locations

#### Product Recall

- Ability to electronically identify stock holding or patients affected by recalls

- Applying Gs1 and PEPPOL Mandated Standards
- Gs1 license is free – Potential to increase data fields

# Bringing it to life; Derby Theatres ...



- **Patient:** Scan Wristband (GS1)
- **Staff:** Who is present. (GSRN / ESR)
- **Relevant Timers:**
- **Location:** Records locations (GLN's)
- **Procedure:** OPCS codes (Interfaces)
- **In Theatre:** Clinical Questions
- **Anaesthetic:** Type used
- **Devices:** Products, Trays & Implants used (GTIN's)  
Including Lot, Batch and expiry data
  - \* Can capture Drugs / Equipment
- **Inventory:** Enables automatic ordering and provides finance with detailed patient level costs.



Trials on wards and Renal with theatre roll out to Burton.

# Data potential

- Electronic theatre record – ePatient records
- Theatre Utilisation
- Resource Utilisation
- Consultant Variation
- Product and Equipment Variance
- Product Traceability
- Visibility of Tray & Instrument usage
- Equipment location and usage
- Stock Room visibility / Space saving
- Increased coding accuracy
- Potential for automation – efficiency savings
  - Patient Records
  - Traceability
  - Register uploads (Never Events)
- Same principles and standards could be applied across the whole hospital – Logistics / Supply Chain!

Movement of deliveries, Patients, Equipment, paper records.

# Working with suppliers;

## Vital sign monitors (VSM)

- Machine taken to patient
- Identify the care giver (Staff ID Barcode GSRN)
- Identify the Patient (Wristband GSRN)
- Vital signs taken as normal
- Interface to Electronic observation system

## Benefits;

Observation times

**Pre** & **current**

**5:11** Vs **3:22**

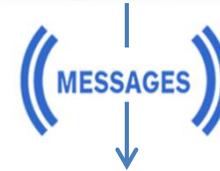
**109 seconds\***

Input Accuracy +



Average 6 observations per patient (24h period)  
Based on 850 inpatients

Total Benefit if live;  
154 Hours which translates to 20.5 Nurses/HCA doing a  
7.5 hour shifts



VSM Vid

# Questions?

Further information available at:

[www.Scan4Safety.nhs.uk](http://www.Scan4Safety.nhs.uk)

# Summary of Programme Benefits;

## Patient Safety

- The right care, to the right patient
- POC record – Feed to EPR
- Fast, accurate and efficient product recall Process inc Trays.
- Opportunity for workflows / Notifications
- Potential to Reduce 'never events'

## Financial

- £2.7m at Derby
- Collective Demonstration sites £8.3m
- 4:1 return on Investment

## Supply Chain Efficiency

- Transparency of Stock levels
- Visibility of stock expiry dates
- Detailed consumption reports
- % of Automated ordering and invoicing
- PEPPOL efficiencies
  - Speed and Accuracy
  - Order acknowledgment
  - Additional Notifications

## Clinical Productivity

- Capture at POC electronically, not post care, on paper.
- Improved clinical coding feed
- Valuable data to feed EPR's / refer to easily
- Removal of data duplication
- Efficiency savings from automation

Now: To focus on the future...

# Supporting cutting-edge healthcare through effective Estates contract management

Andrew Selby  
*Associate Director Estates & Facilities*





Quote Author



Quote Author



Quote Author



- Total capital cost of project approx. **£200m**
  - £160m for the building
  - £40m for cost and enabling
- **38,000sqm** total, with **32,500sqm** of usable clinical space
- Around **300 beds**, including a **46-bed critical care** unit and **24 day beds**
- **5 operating theatres, 5 catheter laboratories, and 2 hybrid theatres**
- **6 inpatient wards**
- Mostly **en-suite, individual rooms** for patients
- A **centrally-located Outpatients unit** offering a wide range of diagnostic and treatment facilities
- **Two link corridors** to Addenbrooke's Hospital (one for services and one for patients)



**15 years of preparation – 8 years of design – 4 years of construction – 3 months of operational commissioning**



Quote Author



## Key Achievements



Rapid NSTEMI



Best-performing NHS hospital in the country for cardiac surgery survival



DCD

Quote Author

# The PFI

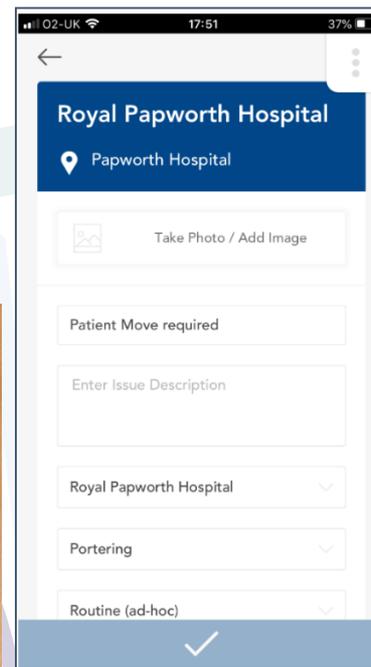


Quote Author

## Developing the Intelligent Client

- 2000 contract managers
- PFI Helpdesk app
- Staff engagement
- Marketing campaign

Quote Author



## Developing the Intelligent Client

- Clinical Director / Nurse Specialist
- Multi-skilled FM training for entire team
- NHS Leadership Academy

Quote Author



# Developing the Intelligent Client

- 583 KPI's
- CQC
- PAM

Ref	Performance Parameters	Performance Failure Category	Remedial Period	Monitoring
<b>7. General Requirements</b>				
<b>Leadership</b>				
<b>Management</b>				
GP01	Project Co shall operate the management structure, responsibilities and lines of communication as agreed with the Trust. Any material changes in such structure, responsibilities and lines of communication during the Project Term shall be communicated to the Trust for approval one month before implementation.	Medium	1 week	Confirmed progress in No reported compliance
GP02	Project Co shall operate a series of monthly meetings as agreed with the Trust to ensure the delivery of the Services be facilitated and Project Co and the Trust are made aware of the day-to-day specific requirements of the individual Trust's departments.	Medium	1 day	Appropriate informed attend Schedule meetings
GP03	Project Co shall implement, in agreement with the Trust, and adhere to, systems and controls to safeguard property, cash and commodities in all Services.	Minor	1 day	Systems ag No reported compliance
GP04	Project Co shall make available appropriate records, in relation to safeguard property, cash and commodities, section by the Trust within 24 hours of request, and by the Police as part of a criminal	Minor	1 day	Records available within required time
	Project Co shall make available appropriate records, in relation to safeguard property, cash and commodities, section by the Trust within 24 hours of request, and by the Police as part of a criminal	Minor	1 day	Completed reports received by due date

Royal Papworth Hospital  
NHS Foundation Trust

Is the Door in 00000010 Corridor - Outpatients free from damage and closing safely? **No**

Photos 11 Photos 12

Is the Door in 00000010 Corridor - Outpatients free from damage and closing safely? **No**

Photos 13 Photos 14

Is the Door in 00000010 Lobby (Star 2 - Emergency free from damage and closing safely? **No**

Is the Door in 00000010 Corridor Staff Only - North West Entrance free from damage and closing safely? **No**

Is the Door in 00000010 Corridor Staff Only - North West Entrance free from damage and closing safely? **No**

Day Staff No number.

Photos 15 Photos 17

Address

To Do: Damage to service both doors, see number. Test help desk

Royal Papworth Hospital  
NHS Foundation Trust

Estates and Facilities Management

CQC Information Request

July 2019

Quote Author

# Informing the Intelligent Client

## Use of technology

- Data loggers
- iAuditor



Quote Author

# Questions?

Quote Author



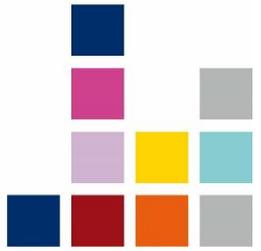


*The***AHSN***Network*

**Innovator  
pitches**

**#InnovationX  
@AHSNNetwork**

# Block Dox.



*The***AHSN***Network*

## Addressing the Problem / Unmet Need



Space  
optimisation

Measure footfall & capture the base currency for future decision making



Rooms &  
facilities  
bookings

Understand how your rooms and facilities are being used, their dwell time and no-shows with real-time analytics



Energy  
performance/  
efficiency

Increase energy savings by up to 54% by combining data with building management strategies



Building  
operation  
decisions

Use reliable facts instead of a hunch or instinct to drive unprecedented asset performances



Toxic air  
quality

Data analytics to help to drive better air quality and increase productivity and improve people health



Wayfinding

Data interoperable through an API to assist healthcare staff and patients around the estate

The NHS can make an important contribution to sustainability by reducing operating costs which currently amount to over £8bn & are the third largest area of cost to the NHS, after workforce costs & expenditure on drugs.”  
*HM Government*

**Providing real-time predictive & cognitive occupancy intelligence so healthcare staff can make more informed decisions about managing their rooms, buildings and estates**



[www.blockdox.com](http://www.blockdox.com)



[info@blockdox.com](mailto:info@blockdox.com)



+44 (0)800 069 8188

# Improving Estates Utilisation & Reducing Energy & Utilities Costs



## Our Solution: Artificial Intelligence for the Built Environment

Our patented technology includes:

- ❑ Real-time occupancy & environmental sensing
- ❑ Predictive analytics & insights
- ❑ Privacy compliant (anonymous & passive sensing)
- ❑ Interoperable with BMS, workplace solutions etc
- ❑ Scalable

Pilots in UK & Overseas in commercial, residential & retail buildings and public transport (rail)



Award  
winning  
urban  
digital  
solutions  
company

Providing real-time predictive & cognitive occupancy intelligence so healthcare staff can make more informed decisions about managing their rooms, buildings and estates



[www.blockdox.com](http://www.blockdox.com)



[info@blockdox.com](mailto:info@blockdox.com)



+44 (0)800 069 8188

# invisible systems

DELIVERING INFORMATION

*The***AHSN***Network*

# How can we monitor and maintain equipment across a portfolio of estates? For example, temperature monitoring and automated alerts to failing refrigeration equipment

## Problems

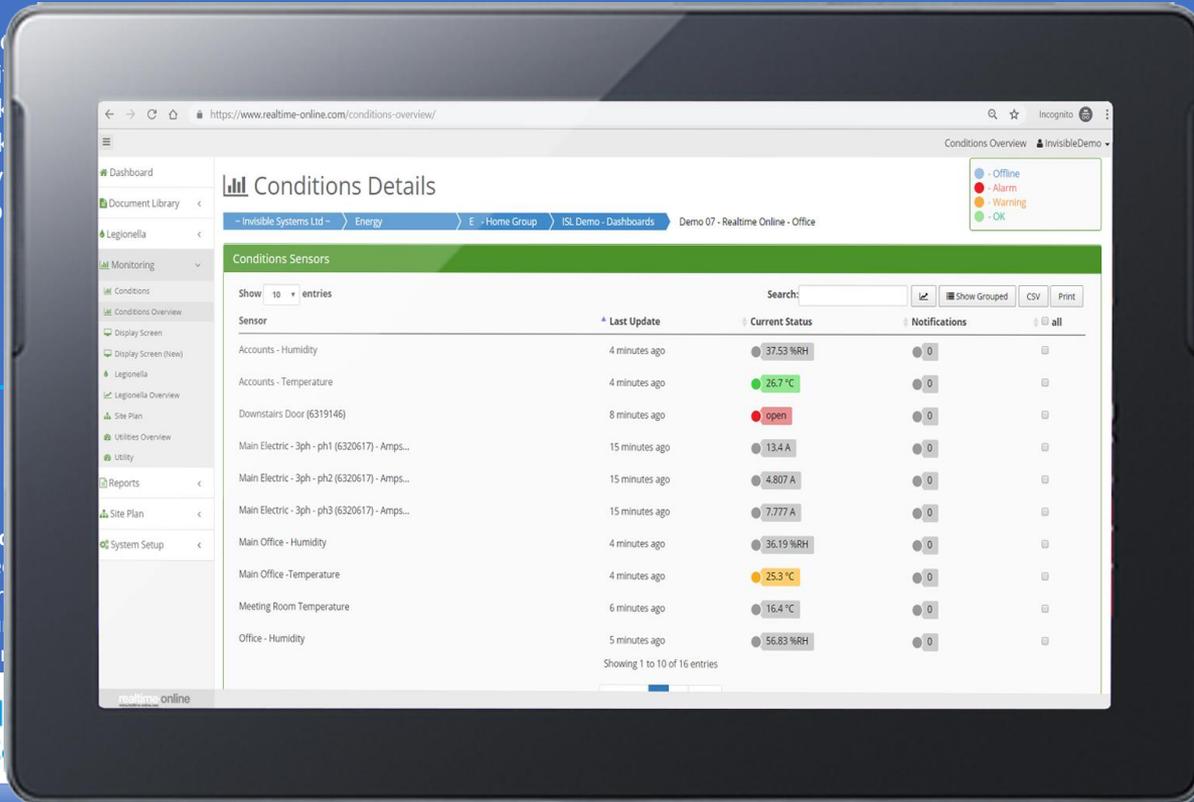
- CQC and national standards
- Manual monitoring
- Manual checks
- Manual checks subsequently
- Quality and patient safety



PHARMACEUTICAL / MEDICAL



Reduce problems  
Get notified when the room temperature allowed range is exceeded

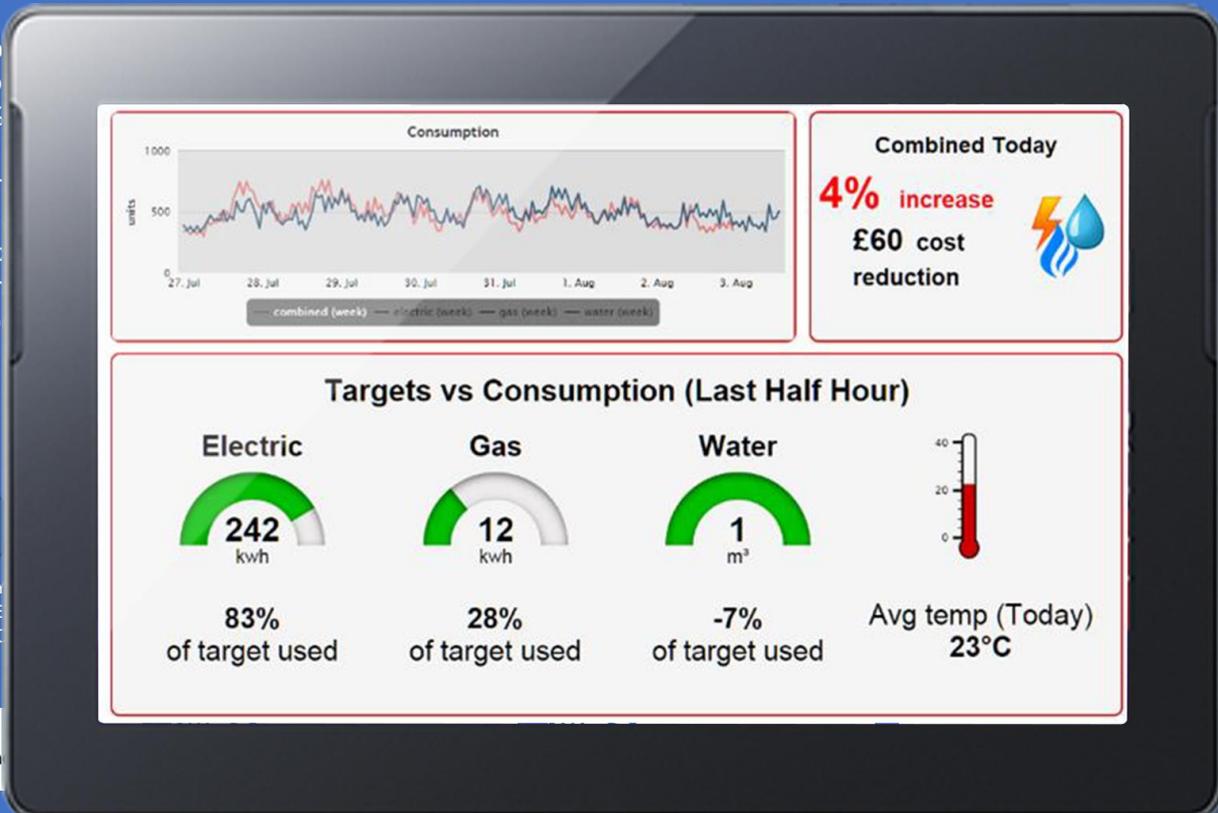


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# How might we reduce energy and wide utility costs in our health and care estates using clean tech?

## Problem

- The NHS p organisation travel (18%)
- The latest r It shows th carbon dio includes er well as goo

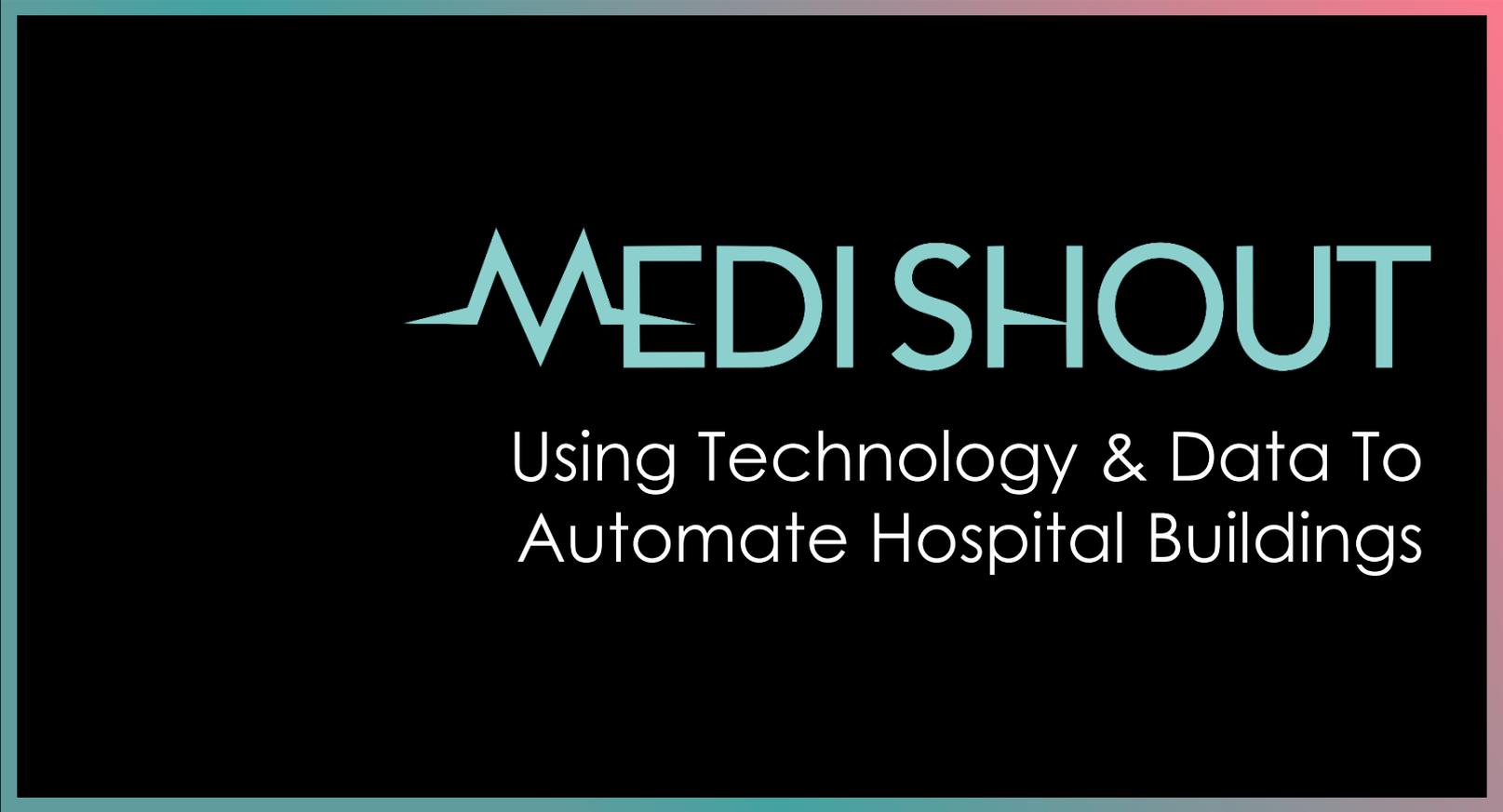


g and  
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management  
ding energy



ENERGY  
MANAGEMENT  
REDUCTION



# MEdI SHOUT

Using Technology & Data To  
Automate Hospital Buildings

# The Big Problem

Estates, Facilities, Equipment, IT, Stock... staff rely on these logistics to deliver care but can't resolve issues:



Hospitals are poorly automated



Staff can't easily report or resolve issues



# The Impact

Unresolved problems accumulate, wasting time for the next member of staff.



**1/3<sup>rd</sup> of Nurses waste 2 hours per shift finding equipment = equating to £900m of NHS wages annually!**

Journal of Nursing Times, 2009



**Clinicians only spend 1/3<sup>rd</sup> of their time actually with patients**

Annals Internal Medicine, 2016

# The Solution: MediShout

## WHY

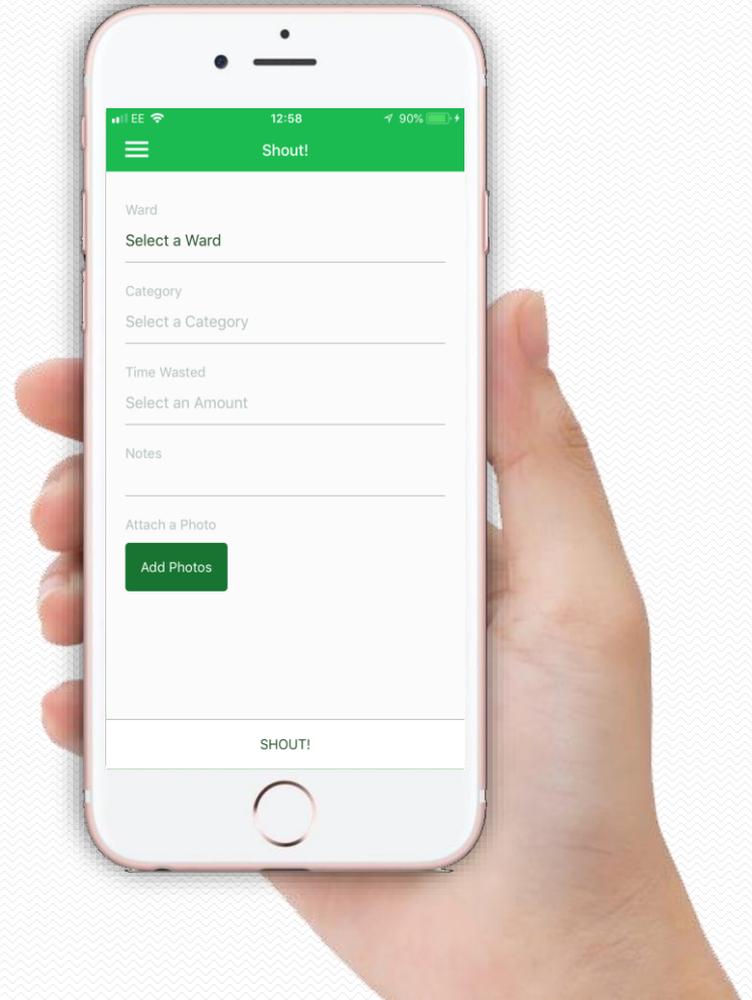
MediShout is the glue that links Staff and their environment

## HOW

MediShout App allows staff to **instantly** report any logistical issue they encounter

## DATA AND A.I.

- a) AI predicts problems
- b) Fix issued based on clinical impact



# Our Benefits



**Save £1m  
Per Trust  
Annually**

STUDY  
**01**

## WATFORD GENERAL (Pilot Study)

- 15mins saved per staff member daily
- This is 36,500 hours per annum (£750k salary equivalent)

STUDY  
**02**

## IMPERIAL COLLEGE TRUST (Full deployment 5 hospitals)

- Issue-reporting: down from 10mins to 35secs
- Fewer calls to Helpdesk can directly save money

STUDY  
**03**

## MSB TRUST, ESSEX (Full deployment, 3 hospitals)

- Integrated with Helpdesks, 500 ward iPads and RFID tags
- Wide spread: Nurses, Doctors, Admin, Physios, Pharmacists



PowerNav

*The***AHSN***Network*

Navigating an unfamiliar hospital environment can be overwhelming for outpatients attending an appointment...



Where am I going?

How do I get there?

What time do I need to be there?

Who's my doctor?

How long do I have to wait?

Can I park nearby?

Who should I contact if I'm running late?

# PowerNav is the Solution

- Navigation system – Mobile App, Web & Kiosks
- iPhone & Android
- Search, Directory or Scan QR code
- Blue dot experience
- Informs time & distance to destination
- Step-by-step directions
- GPS - Home to final destination
- Accessibility - Voice and text guidance - Wheelchair accessible routes
- Location Sharing - 'Meet me here' messaging
- Proximity based messaging – (e.g. alerts, offers)



*PowerNav kiosk and web versions support wayfinding for all users - with or without a mobile phone*

# More than just wayfinding...



Fewer missed appointments  
(DNA rates)



Reduce lost revenue &  
generate income



Reduce wait times



Safety & accessibility  
(physical & language)



Collect patient feedback specific  
to location



Increased organisational efficiency



Improved Patient Experience



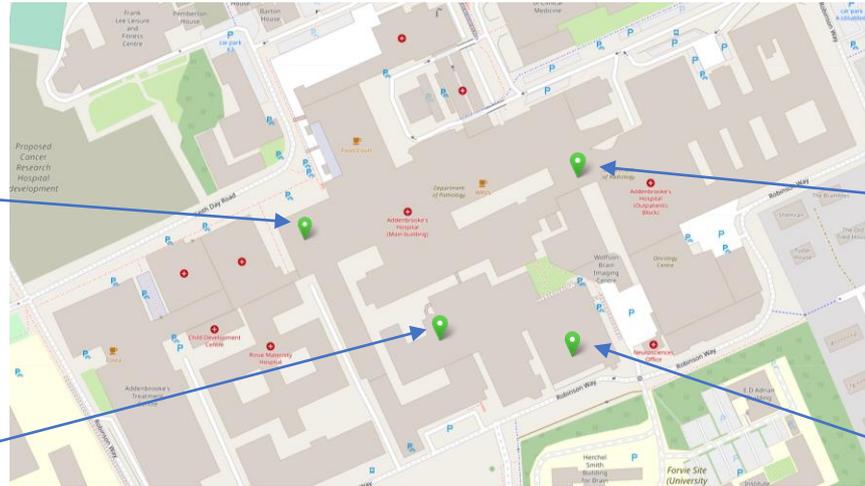
Better Planning through  
analytics



[office@map-innovation.com](mailto:office@map-innovation.com)

Versatile low power Asset tracking

# MAP-Ping SMART TRACKING



Location of inventory viewable on a map

- Effective management of resource
- Mitigate inventory loss
- Eradicate lost time



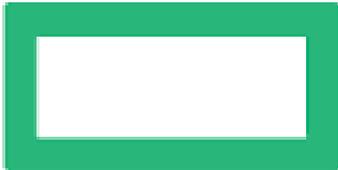
# HIGHLIGHTS



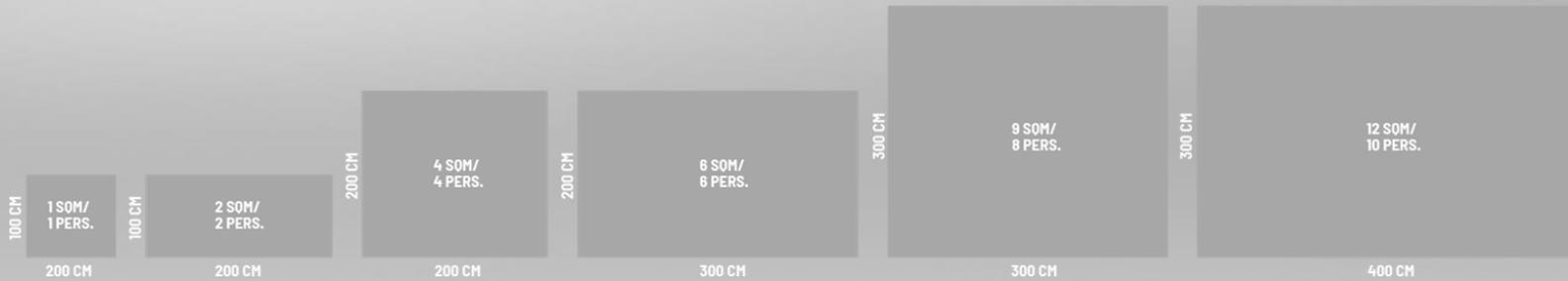
- Interface Example -

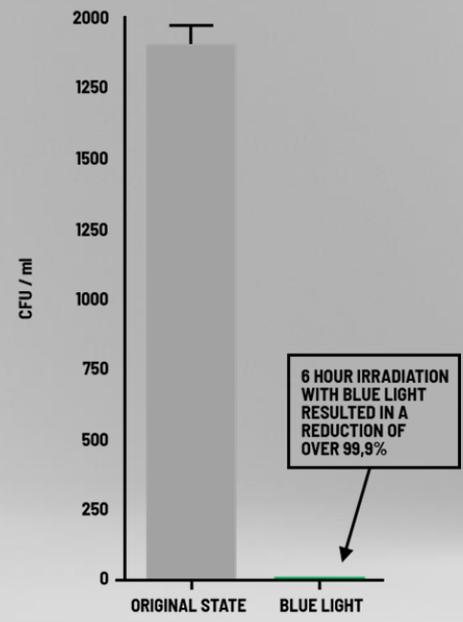
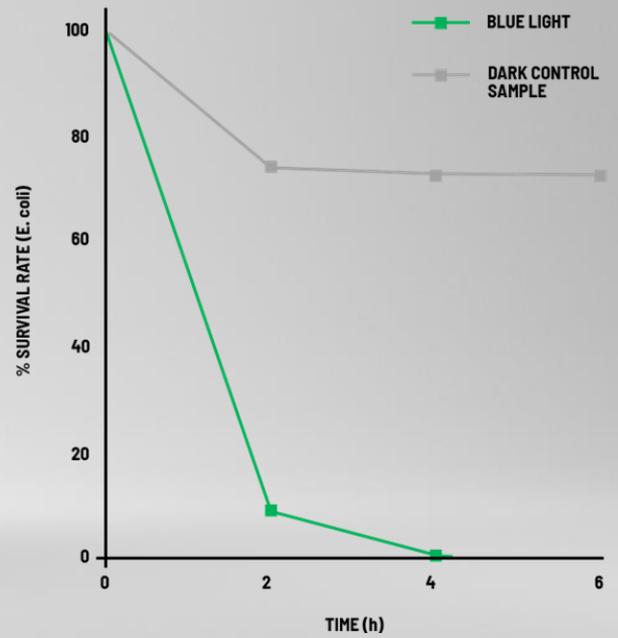
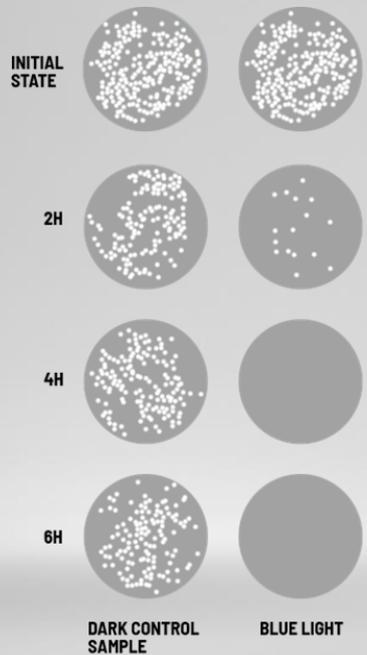
- Indoor & outdoor low effort tracking
- Data sent via secure networks
- 4 years standard autonomy
- Bespoke or standard platform
- Location historical data for each device
- Predictive analytics
- Geo-fence, Battery, temperature, humidity, tamper proof options available



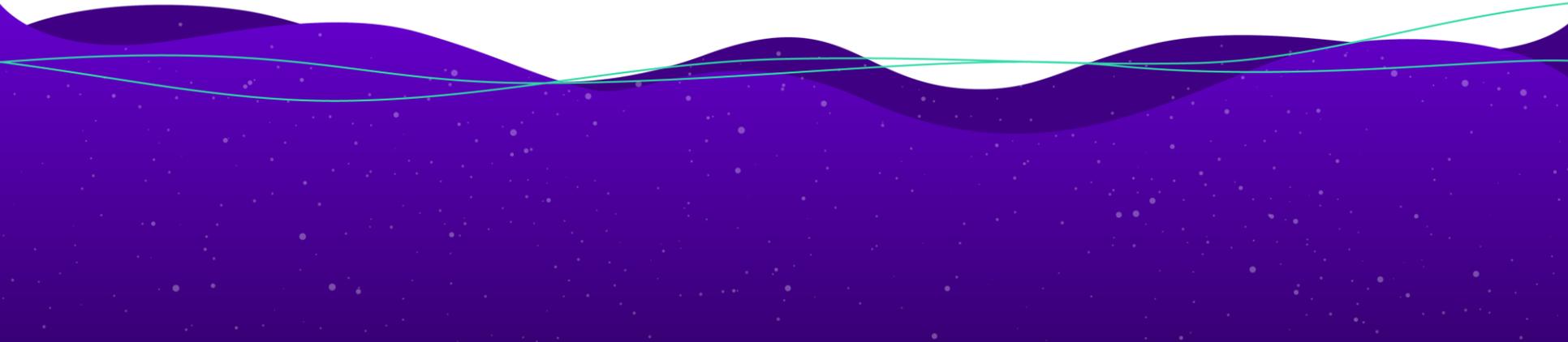
**VETRO**  **HEALTH**™

*The* **AHSN** *Network*





# Virtual Reality Space Planning Tool



# Virtual Reality Space Planning Tool

**Poorly configured healthcare space costs the NHS billions. The current procurement system is failing to eliminate this problem**

- Our virtual Reality (VR) tool would allow for realistic and precise space planning
- Applies to refurbishments or new estates
- Incorporates wayfinding tools to assist those with complex needs or fragility
- Risk visualisation, training and assessment
- Planning for annual PLACE inspections – linked to an index for scoring
- Seeking funding for a pilot project (6 months long) with room to develop in future



## Key features

### **Complete customisation of a virtual estate**

including overall layout, doors, windows, equipment and lighting placement

### **Select from a list of 3D modelled equipment**

and re-size them to fit your needs

### **Simple drag-and-drop interface**

that anyone can use, with easy rotation and stacking options

### **Easy to conduct patient testing,**

allowing you to gather feedback before committing to a layout

### **Potential savings from less wasted space**

and less time required from 3D designers



**Estimated that  
space optimisation could  
contribute to £5bn in savings  
for the NHS**

Source: BBC





*The***AHSN***Network*

# Welcome to Yuseal



# “Supporting better day to day operations and maintenance”

Yuseal can help you do this!



Before



After





*The* **AHSN** *Network*

## Customer Centric Wayfinding

### MANAGED COMMUNICATION AND COST IMPROVEMENT PROGRAMS

**Mission Statement**

*Helping you make clear and defined decisions  
In delivering hybrid communications to aid the patient  
journey and reduce resource pressures.*



## Reference

*"I have been engaged with Stephen and the team at FIFY through my time as Chair of two NHS Trusts and the Chair of the Greater Lincolnshire LEP Health and Care Enterprise Board.*

*FIFY have highlighted potential efficiencies in the supply chain and offered communication insight that can have a tremendous effect on the patients, staff, the community, and the digital transformation agenda. Their passion to assist patients and the staff during their journey and bring innovation from other industries to assist is highly commended.*

*FIFY has presented an innovative, and in my opinion, a financially robust solution to address key challenges within physical and mental health services, as well as in elderly care, home and community support. As an independent observer I am very happy to recommend Trusts engage with FIFY."*

**Dean Fathers – NHS Chair - Nottingham**

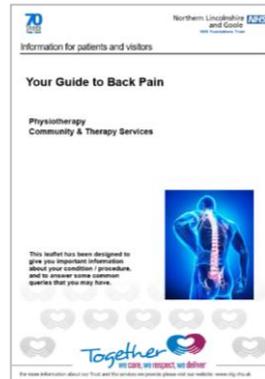
Communication and pathway planning for less than the cost of a



Standard appointment letter from PAS system or Administration staffs print driver



Automated Personalised letter based on the patient needs, and appointed venue



Pre appointment info to ease frequently asked question during consultancy increasing time



Personalised journey planning based on travel, date, time, work being carried out, patient need



Patient Incentives to aid family support and social-educational interaction

# Patient Journey Ap – single digit access



Initial log in with options to link into secure records and personal NHS records

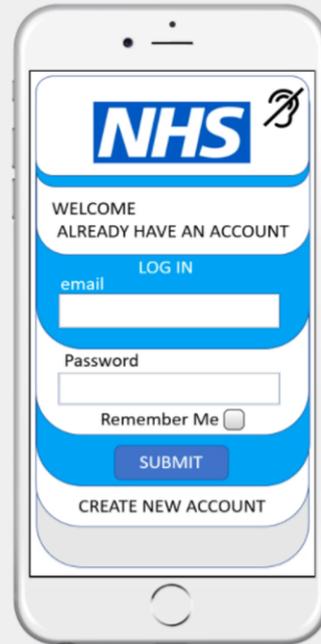
Appointment Booking and reminders with options to change linked with staff rota

Synchronized calendar with localised care and NHS Trust allocations

Journey planning from external GPS mapping tools incorporating road hazards

Personalised patient immersive video hospital mapping for walkthrough to desantation

## Patient Journey Ap



## Patient Journey Ap



Trust Care Specialty



- Trauma & Orthopaedics
- Ear, nose and throat (ENT)
- Ophthalmology
  
- Clinical haematology
- Cardiology
  
- Dermatology
  
- Rheumatology

## Digital DNA



### **Immersive 3D Interaction**

Access to other facilities within the community without attending the hospital including interactive information, venue resource and capability, and app mapping.

Using visual communication can decrease stress for patients suffering from symptoms such as Asperger's syndrome, Autism, Alzheimer's, and other pressures.





# *The***AHSN***Network*

## **Introduction to the Innovation Zone**

**Helen Oliver**

Chief Operating Officer  
Eastern AHSN

**#InnovationX  
@AHSNNetwork**

# The AHSN Network

## What's in it for you?

### Innovators

- Opportunity to meet key people in the Health System from two AHSN's
- Potential to follow up post event
- Opportunities for AHSN support
  - Funding
  - Project support
  - Implementation expertise
  - National Adoption and Spread
- Networking, building beneficial relationships

### Delegates

- Meet innovators with solutions to your challenges
- Opportunity to think outside of your usual environment
- AHSN support
  - Funding
  - Project support
  - Implementation expertise
  - National Adoption and Spread
- Network with like minded colleagues

## Innovation Zone Structure

- Every innovator has a demonstration stand
- There are 4 x 30 minute sessions
- Sessions 1 and 2 are allocated for named delegates to meet specific innovators. These are listed on your Blendology badge, if in doubt ask your table host
- Sessions 3 and 4 are free format and delegates are free to see all innovators
- At 15:15 we will reconvene in the Peterborough Suite for closing statements followed by refreshments and networking.

## **Break**

- Now it's time for lunch.
- Served in the Cambridge Suite
- The first innovator session starts at 13:15.  
Please be prompt!



# *The***AHSN***Network*

## **Next steps**

**Suzanne Horobin**

Head of Innovation Exchange  
East Midlands AHSN

**#InnovationX**  
**@AHSNNetwork**

# *The AHSN Network*

## **Innovation Exchange**

- 1. Defining needs – support to understand the needs that could respond to innovation. Support to identify proven solutions**
- 2. Innovator support and signposting – consistent and coordinated offer to innovators**
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