



# SBRI Healthcare

Small Business Research Initiative Competition 25 AMR Briefing Event

Chaired by: Dr Caterina Lombardo

> Accelerated Access Collaborative



Time	Торіс	Presenters
10:00 -10:05	Welcome and introductions	Dr Caterina Lombardo
10:05 - 10:20	Introduction and overview of the SBRI Healthcare Programme and Competition 25	Dr Michelle Edye
10:20 - 10:40	Antimicrobial Resistance (AMR) - overview of the priority areas	Professor Matt Inada-Kim
10:40 - 11:00	Q&A session	All
11:00 - 11:10	The Health Innovation Network	Dr Raasti Naseem
11:10 - 11:20	The application and assessment process	Dr Danilo Villanueva Navarrete
11:20 - 11:50	Q&A session	All
11:50 - 11:55	Closing remarks	Dr Caterina Lombardo

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- Thank you all for taking the time to join
- Feel free to ask questions in the Q&A box as we go along, and we will answer them in the Q&A sessions
- Please flag any technical issues in the chat
- The slides and the recording will be uploaded on SBRI Healthcare website
- For further enquiries: sbri@lgcgroup.com





# Overview of SBRI Healthcare

Presented by: Dr Michelle Edye





- Pan-government, structured process enabling the public sector to engage with innovative suppliers
- AAC programme managed by LGC Group & supported by the Health Innovation Network (HIN)



Improve patient care



Increase efficiency in the NHS



Enable the NHS to access new innovations through R&D that solve identified healthcare challenges and unmet need



Bring economic value and wealth creation opportunity to the UK economy

















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Themed competitions to address identified unmet NHS challenges at early and late stage of innovation

• Particularly suitable for SMEs, but any size of businesses is eligible



Based anywhere in Europe



- At early stage of innovation the Programme has a phased development approach
- Phase 1, feasibility project (6 months, up to £100K, NET)
- Phase 2, development project (12 months, up to £800K, NET)







### What this is for

#### **Innovation type -**

Digital health & AI, medical devices, in-vitrodiagnostics, behaviour interventions and service improvements

## What this is not for



**Innovation type -** N/A

#### Entry point -

**Phase 1** - no set entry point **Phase 2** - open only to successful Phase 1



#### Entry point -

Phase 1 - N/A

**Phase 2 -** new proposals which haven't been through Phase 1

#### Scope -

Phase 1 - technical/commercial feasibility
Phase 2 - prototype development/clinical evidence



#### Scope -

Proposals that do not address the specific competition brief

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# Phase 1 and Phase 2 expected exit points



Demonstrate the technical and commercial feasibility of the proposed technology:

- Feasibility technical study
- Market validation
- Business plan
- Clinical partners identified
- Evidence generation plan for adoption
- Development of PPIE strategy
- Health inequalities impact assessment
- Plan to support the NHS to achieve its net zero ambitions

## Phase 2

- Minimal Viable Product developed
- Early clinical evidence gathering to demonstrate accuracy (and safety)
- Commercialisation strategy: business model, price strategy and plan for next funding stream
- Health economics
- Evidence gathered towards regulatory documentation
- Implementation plan for adoption
- Steps towards the carbon neutral strategy and objectives for the NHS
- Strong involvement and engagement with patients and public, steps towards equality, diversity and inclusion and commitment to reduce health inequalities









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	PRE-COMPETITION	Launch webinars, drop-in sessions and clinics	
Support	IN-COMPETITION	NICE Metatool Webinar support on: what a good application looks like, Patient and Public in commercialisation, IP, finance, impact, tailored sessions etc	volvement,
Su	IN-PORTFOLIO	Investment readiness programme, showcase events, webinar series on regulatory landscape, roadmap to the NHS, health economics, DTAC, peer to peer support, women in Healthtech Leadership programme	
	IMPACT	Case studies, annual survey and annual report	
		bartment for rmational Trade	Innovate UK EDGE
	N Health and C	titute for Care Excellence YHEC ASTHMA+ LUNG UK	OXENTIA
Accelerated Access Collaborative		Health Innovation Network	IHS

# **SBRI** Phase 1 competition: Antimicrobial Resistance (AMR)



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# Challenges

- Point of care diagnostics, monitoring, and susceptibility testing
- Prescribing decision support and risk stratification
- Novel care delivery methods
- Infection prevention and control (IPC)

<u>AMR Web Page</u> <u>AMR Challenge Brief</u> <u>Phase 1 – Guidance for Applicants</u>





# Antimicrobial Resistance (AMR) - priorities

Presented by: Professor Matt Inada-Kim

> Accelerated Access Collaborative



# **NHS Landscape**



#### Infection system redesign



Public satisfaction with the NHS and social care in 2021

nuffieldtrus

Satisfaction with GP services fell from 68% to 38% Satisfaction with A&E)services fell from 54% to 39%

The Kings Fund>

#### What are the challenges?

linked data

# Prevention (& preparation)



Poorest going to A&E more than 300 times a year 'because they have nowhere else to turn', say Red Cross

How can we innovate? What are the opportunities?

#### Point of Care tests

Standardised rate of Infections admissions per		
10,000 population in 2016-17		

	Episodes	Deaths	Bed days
1 Most deprived	438	38	4,488
2 More deprived	353	31	3,589
3 Mid quintile	303	26	2,963
4 Less deprived	271	23	2,635
5 Least deprived	243	20	2,301

Prof Matt Inada-Kim, Acute Physician, Hampshire Hospitals NHS Foundation trust & University of Southampton National Clinical Director Infection management & Antimicrobial resistance, NHS England & UK Health Security Agency

# The NAP's key priorities

Will require a patient centred, coordinated response across/within all NHS organisations and Must be Clinically Led and Implemented



#### **Optimal management of both Infection & AMR**

#### the importance of balance

Treat when

possible

Antibiotic

resistance



#### Do you give antibiotics just in case?



Optimising processes in AMR Treat appropriately Start Smart then Focus Reliable antibiotic reviews De escalation Avoid/remove catheters

#### What is the incidence & trajectory of infections?



#### **Top** reasons for ED attendance

SNOMED-CT Description	Total
ALL	10,199,364
Urinary tract infectious disease	257,373
Sprain of ankle (disorder)	212,361
Lower respiratory tract infection	209,747
Cellulitis	151,790
Open wound of finger	144,683
Coronavirus disease 19 caused by severe	
acute respiratory syndrome coronavirus 2	139,645
Acute coronary syndrome	139,044
Traumatic brain injury with no LOC	138,976
Upper respiratory infection	125,108

#### **Proportion of Total NHS Hospital Deaths**



And yet 'infection' budgets for improvement are a tiny fraction of workstreams for established specialty conditions

#### Infections cause half of total bed days



How can we integrate/bring services together?

How can we use the opportunities to improve care?

How can we improve access for optimal infections management in community settings?

## Increasing growth of those susceptible to infections

• 3.9% of the population are now classified as immunocompromised

https://www.thelancet.com/journals/lanepe/article/PIIS2666-7762(23)00166-7/fulltext

• Growing use of complex immunosuppressive treatments

https://pubmed.ncbi.nlm.nih.gov/18793004/

• Increased success at keeping those with severe, chronic illnesses alive

Over a 36-year period, the overall Standardised mortality in the first and last decades were 12.60 and 3.46 respectively



Transparency declaration

With greater advances in medicine, more patients with immunocompromising conditions are living longer [[1]]. In parallel, patients with terminal diseases are being treated with immunosuppressive therapies to extend their lifespan and cure their underlying disease [[2],[3]]. Overall, it is estimated that immunocompromised patients, such as those with asplenia, human

#### **INFECTION**



**Optimal disease Mx** 

## **Infection Systems Redesign**



Evaluation of winter pressures on general



Matt Inada-Kim 25.7.24

NHS

England

#### Acute Infection hubs - Clinical Pathway & Research opportunities



digital (e.g. Healthier together) Safety netting- written,

Matt Inada-Kim 25.7.24

### Acute respiratory infections (ARI) HUB



The hub model provides

- **Improved Access** & capacity- for the assessment, diagnostics, treatment, monitoring and coordinated care provision in acute community ARI patients- including those with COVID
- Focal point for Prevention strategies and reduced nosocomial infections
- Optimal infections management (stewardship through SOPs, POC tests; reduced nosocomial risk)
- Same Day Urgent Integrated care coordinating pathways reducing inappropriate admissions/attendances
- Supporting demand for same day urgent community assessments and enabling GP focus on chronic complex illness, high intensity users and prevention.

# What tests do we need?

Rapid (15 min) POC Diagnostics

- Patient (Hx / Ex)
- Physiology
- Tests
- Treatment

# • DIFFERENTIATE VIRAL/BACTERIAL INFECTION e.g.

**Mx proteins** 

• PATHOGEN IDENTIFICATION e.g. BCx -> Pn/Leg Ag, Metagenomic DNA, PCR

# • ILLNESS SEVERITY e.g. CRP / WBC -> PCT, ProADM

Differentiating a well looking ill patient from an ill looking well one...

No single gold standard 'sepsis' test or tool.

# ...and who will pay for them?

#### What are the @home treatment options for moderate-severe infections?









Can they reduce LoS? Can they prevent admission?



#### How can we improve the

- Accessibility
- Efficiency
- Effectiveness

of these treatment options?

# Acute respiratory infection hubs



**363** ARI Hubs



729,808

people seen in an ARI hub

compared to

450,000

people attended ED with an ARI Impact

@mattinadakim

61% Agree/strongly agree that ARI hubs Reduced ARI pressures on ED attendance

83% Agree/strongly agree that ARI hubs Reduced ARI pressures on primary care

87% Agree/strongly agree that ARI hubs Improved same day access to urgent care

without a hub, it is estimated that up to half of people seen would have gone to an emergency department and up to half to general practice

Areas with the highest rates of ARI hub activity had the greatest reductions in ARI ED attendees

Population coverage

Reported in February 2023

> 8 Average cost per appointment

87%

High volume hubs Average cost per appointment

# **Evidence based reframing of antibiotic treatment urgency New National Sepsis guidance**



- 1. How sick is the patient?
- 2. What is the likelihood of infection?
- 3. Appropriate treatment urgency
- 4. Hospital centric guidancewhat about the community?



# NEWS2 0-4

If infection is unlikely do not treat

You have time

Send tests

Use Clinical Judgement

Escalate to next level if concerned

Certainty of bacterial infection V Illness severity

	Vital signs: NEWS-2 'Physiology first'	0	1-4
	If Clinical/carer concern, continuing deterioration, neutropenia or lab evidence of organ dysfunction (incl. lactate), upgrade actions to next NEWS2 level		
eneric) ons	Monitoring and escalation plan	Standard observations	<ul> <li>Registered nurse review &lt;1 h</li> <li>Obs 4-6 hrly if stable.</li> <li>Escalate if no improvement</li> </ul>
Initial (generic) actions	Initial treatment of precipitating condition	Standard care	< 6 hr
Likelihood of infection & actions	Unlikely	Standard care	Review daily and reconsider infection if diagnosis remains uncertain
	Possible	Review at least daily	<b>&lt; 6 h</b> <ul> <li>Source identification &amp; control plan documented.</li> </ul>
	Probable or definite	< 6 h • Diagnostic tests & R plan	<ul> <li>&lt; 6 h</li> <li>Microbiology tests</li> <li>Antimicrobials: administer or revise</li> <li>Source identification &amp; control plan.</li> <li>D/w ID/micro if uncertain, &amp; review</li> </ul>

# NEWS2 5 or more

If infection is unlikely, do not treat

If infection is possible or probable then treat

Do not delay where there is shock or NEWS2 7 or more



	Vital signs: NEWS-2 'Physiology first'	5-6	≥ 7
Initial (generic) actions	Monitoring and escalation plan	<ul> <li>Obs hourly.</li> <li>Review &lt;1 hr by clinician competent in acute illness assessment</li> <li>Escalate if no improvement</li> </ul>	<ul> <li>Obs every 30 mins.</li> <li>Review &lt;30 min by clinician competent in acute illness assessment.</li> <li>Senior doctor review &lt;1 hr if no improvement: refer to Outreach or ICU</li> </ul>
	Initial treatment of precipitating condition	< 3 hr	< 1 hr
ctions	Unlikely	Review daily and reconsider infection if diagnosis remains uncertain	
Likelihood of infection & actions	Possible	<ul> <li><b>3 h:</b></li> <li>Microbiology tests</li> <li>Antimicrobials: administer or revise</li> </ul>	<ul> <li>&lt; 1 h:</li> <li>Microbiology tests</li> <li>Antimicrobials: administer or revise (broad-spectrum if causative organism uncertain).</li> </ul>
	Probable or definite	<ul> <li>Source identification &amp; control plan documented.</li> <li>6h</li> <li>Source control initiated</li> <li>48 – 72 h</li> <li>Review antimicrobials with ID/micro/senior clinician</li> </ul>	<ul> <li>&lt; 3 h</li> <li>Source identification</li> <li>3-6 h</li> <li>Source control initiated according to clinical urgency</li> <li>48 - 72 h:</li> <li>Review antimicrobials with ID/micro/senior clinician</li> </ul>

# Suspected acute respiratory infection in over 16s: assessment at first presentation and initial management

NICE guideline [NG237] Published: 31 October 2023 Last updated: 16 November 2023

#### **Research recommendations**

- NEWS2 for ARI assessment in community settings
- Point of Care tests
- Antimicrobial usage

#### se antibiotics

Article

Acute Respiratory Infection Hubs: A Service Model with Potential to Optimise Infection Management

Sarah Jawad <sup>1</sup><sup>©</sup>, Anna Buckingham <sup>2</sup>, Charlotte Richardson <sup>1,2</sup>, Aoife Molloy <sup>2,3</sup>, Bola Owolabi <sup>2,4</sup> and Matt Inada-Kim <sup>2,5,6,7,\*</sup>

#### The impact of ARI hubs

- ? Primary care, ED attendances
- ? Hospital Admissions
- ? Deaths, Length of stay, costs

NHS @home

• ? Patient satisfaction

### tisfaction

# National Ambulance ARI assessment tool



- Primary care- chronic/prevention and acute episodic
- Reduced avoidable ED attendances
- Reduced Hospital Admissions

•

•

- Reduced Deaths, Length of stay, costs
- Broadening of conditions to other acute syndromic presentations
- Expansion into chronic complex disease management

Matt Inada-Kim 25.7.24



# AMR Phase 1 Funding Competition



- Novel care delivery methods e.g. infection hubs using linked data management systems
- 2. Optimising use of antimicrobials e.g. Clinical decision support tools
- POC diagnostics, monitoring and susceptibility testing – LRTI, UTI, Sepsis, Surgical site
- 4. Infection prevention and control

NHS @home




### Q&A session- please do fire up any questions you might have in the Q&A box





# Health Innovation Network Support

Presented by: Dr Raasti Naseem

Accelerated Access Collaborative



# Health Innovation North East and North Cumbria (HI NENC)

#### Dr Raasti Naseem Programme Manager – Economic Growth

## What are the Health Innovation Networks?



-lealth Innovation

15 HINs across England

 Established by NHS England in 2013 to spread health innovation at pace and scale

Improving health and generating economic growth

Innovation arm of the NHS

Office for Life Sciences



## We work locally and nationally



Identify innovation & improvements to specific problems. Healthcare, academic or business setting. Creates an innovation pipeline

**Empower** innovators to further their ideas and connect with the right stakeholders

Advance the uptake and spread of innovation and improvements by delivering national programmes and initiatives within the NHS and social care.



ealth Innovation

Nationally, our goal is to bring individual HINs together

Drive Change

#### What do we do at HI-NENC?



- Focus on 6 key areas
- Identify, evaluate, adopt, disseminate transformative innovation
- Facilitate collaborations and partnerships
- \*\*Innovation pathway\*\*



THE INNOVATION PATHWAY





innovationpathway.healthinnovationnenc.org.uk

#### **HIN support to applicants**

- Expertise across the AMR landscape
- Application review and development advice
- Awareness of current trials/ studies, emerging innovation and possible gaps
- Stakeholder engagement
- Innovation review understand the unmet need and help required to build the portfolio of evidence
- Spread and adoption toolkit to enable us to help you plan for future commercialisation



#### **Get in touch!**

• What happens next?

https://healthinnovationnenc.org.uk/

Enquiries@healthinnovationnenc.org.uk

Raasti.Naseem@healthinnovationnenc.org.uk



## Thank you

#### **Questions?**



# Assessment process and how to apply

Presented by: Dr Danilo Villanueva Navarrete





Access Collaborative Innovation Network

Patients NHS access Sales



- 1. How well does the application address the challenge brief and does the proposed solution benefit patients, the NHS and/or Social Care Sector and the wider market? 20%
- 2. Are the project plan, deliverables and risk mitigation strategy appropriate? 15%
- 3. Is the product innovative, will it have a competitive advantage over existing and alternative solutions and are the arrangements surrounding the use and development of Intellectual Property appropriate? 15%
- 4. Does the proposed project have appropriate commercialisation and implementation plans? 15%
- 5. Does the proposed innovation have potential to enhance equity of access and does the project include consideration towards patient and public involvement? 10%
- 6. Does the proposed technology have potential to contribute to net-zero emission? 5%
- Do the host organisation and project team appear to have the right skills and experience to deliver the project? 15%
- 8. Are the costs justified and appropriate? 5%











Competition launch	17 <sup>th</sup> July – 28 <sup>th</sup> August 2024
Assessment	September-October 2024
Selection Panels	November 2024
Contract awarded	January 2025



Network



# **SBRI** Application process – www.sbrihealthcare.co.uk



05 JULY, 2024
Competition 26 - Stroke
Read more >

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Programme Management Office

Research Management System



Please log in to access your account.

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Forgot Password?

E	
Fmail	
LIIIGII	

New users

Please register with us to create your account using your institutional email address.

Please note that all new users require validation by the Programme Management prior to receiving access to the system. We will endeavour to complete this validation process as soon as possible (within standard working hours) following completion of your initial registration

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Password	

Register	System	Help	7
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Dr .	Welcome to Programme Management Office Research Management System, Dr Amagement Lienen
Home	
My Applications	Please update your CV. Your CV was last updated on 30 April 2020.
My Co-applications	Please check that your CV details are up-to-date as it assists us when assessing grant applications and assigning external reviewers.
My Grants	To update your CV, go to Manage My Details.
My Research Outputs	
My Reviews	New Grant Application
My Tasks	To apply for funding from one of our grant streams click here.
Manage My Details	
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Logout	
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Programme Mana Research Manageme						
Mr	Logged in as Console account - Mr Ken Middleton - ken.mi	ddleton@nihr.ac.uk do not use f	or testing as an applicant	or reviewer		
Home						
New Application	Open funding rounds					
My Applications	Open funding founds					
My Research Outputs	The table below shows all the funding rounds currently acce	unting applications				
My Tasks	The table below shows all the funding rounds currently acce	pung applications.				
Manage My Details	Click <b>More info</b> to view additional information about each fu					
Contact Us	Click <b>Apply</b> to access the online application form for the typ	e of grant you wish to apply for.				
Logout	Court Tara	Funding Davied	Submissions Window	Closing Date	wore infer Apply	
System Help 🗊	Grant Type SBRI Phase 1	Funding Round	Submissions window	Closing Lette	wore mis apply	
System nety 🖉	SBRI Phase 1 SBRI Healthcare, an NHS England & NHS Improvement initiative that aims to promote UK economic growth whilst addressing unmet health needs and enhancing the take up of known best practice. SBRI supports a programme of competitions inviting companies to come forward with their ideas on novel MedTech and digital innovations that can address specific NHS challenges.	SBRI 17 Phase 1 - Urgent and Emergency Care		27 August 2020 BST	More info Opening 15/07/2020	

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#### Programme Management Office

Introduction

Research Management System



#### Urgent and Emergency

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26817

Details...

Introduction

Section 1: Application
 Summary

Section 2: Company Details

Section 3: Plain English Summary

Section 4: Project Plan

Section 5: Team

Section 6: Budget

Section 7: Supporting

information

Section 8:
 Administrative contact details

Section 9: Validation
 Summary

Previous	Next	Save	Save And Close	
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There are a number of **online guidance prompts** (marked as a ?) available to you throughout the online form to help you when completing an application. It is **strongly advised** that you also read the relevant **Guidance for Applicants** before completing your application.

Please keep the use of acronyms to a minimum. Only use acronyms where a term is used frequently throughout the application. If you do choose to use an acronym, do not assume that the reader knows what it means, and be sure to define it when first used.

You are strongly advised to structure the longer sections of the application form (particularly the Project Description and Breakdown) in such a way that they can be read easily by reviewers. The use of long passages of dense, unstructured text should be avoided.

Schematics, tables, illustrations, graphs, and other types of graphics can be embedded to clarify the project plan but they should not clutter the central narrative. Images do not count towards the overall word count but inclusion of them to overcome word limits is not permitted. Images may only be included within the Project description and breakdown. **Images included in other sections will be removed from the application and not seen by reviewers**.

Members of the project team will need to invited through the RMS *via* email to participate as team members, after which they must both **confirm and approve their participation**. Please ensure that all team members invited to collaborate on this application have confirmed their involvement and approval of the application form content before submission.

Although confirming and approving an application can be done at any time during the submission of an application, you are strongly advised to do this well in advance of the deadline.

If you have any queries with your application, you can contact the SBRI Healthcare Programme Management Office on 020 8843 8125 or SBRI@LGCGroup.com.







#### Dr Aayesha Hassan Programme Management Office aayesha.hassan@ccf-prp.org.uk Research Management System Dr My Co-applications

You have 1 co-application awaiting submission.

To view more details please select an application from the grid below.

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My Grants	Reference	Title	Main Applicant	Role	Confirmed	Last Updated	Application Status
My Research Outputs	26808		Dr	Co	N	14/07/2020	Pre-Submission
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Health Innovation Network

status





### Q&A session- please do fire up any questions you might have in the Q&A box



#### SBRI Healthcare will hold a Q&A session for any additional questions applicants might have during the application process on 8th August 2024 from 14:00 to 15:00

#### **Registration on**

https://www.eventbrite.co.uk/e/sbri-healthcare-competition-25-phase-1qa-session-tickets-952708766567

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#### **SBRI Healthcare**

LGC Ltd Grant Management Group 15 Church Street Twickenham TW1 3NL

Contact us for advice and specific guidance: T 020 8843 8125



<u>sbri@lgcgroup.com</u>



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