# Applying Innovation in the UK & South London Healthcare System

Dr. Rishi Das-Gupta

Chief Executive, HIN

@HINSouthLondon

healthinnovationnetwork.com

Health
Innovation
Network
South London

# HIN: Our vision, mission and values

**Our Mission:**
Speeding up the best of health and care together

**Our vision:**
We want a future where health and care innovation spreads fast. We're building it by connecting people with great ideas, inspiring people to think differently and giving them practical support to do something new.
Together, we can create a future where everyone benefits from the best in health and care.

**Our values:**

**Brave:** We encourage our teams and others to be brave with their ideas and support them to try something new.

**Kind:** We care about each other, the people we work with and about the health and wellbeing of south Londoners.

**Open:** We're open about what we do and we share what we learn.

**Different:** We think differently and we are strong because of our diverse backgrounds, talents and experiences.

**Together:** We build communities and networks, we collaborate and we connect.

# (South) London is a great place to innovate in healthcare

- Diverse population
- Strong universities & research
- Clear regulatory environment
- High cost of space / land
- Every type of care provider
- Thriving innovator ecosystem
- Culture of innovation & entrepreneurs
- Few levers to 'force' change
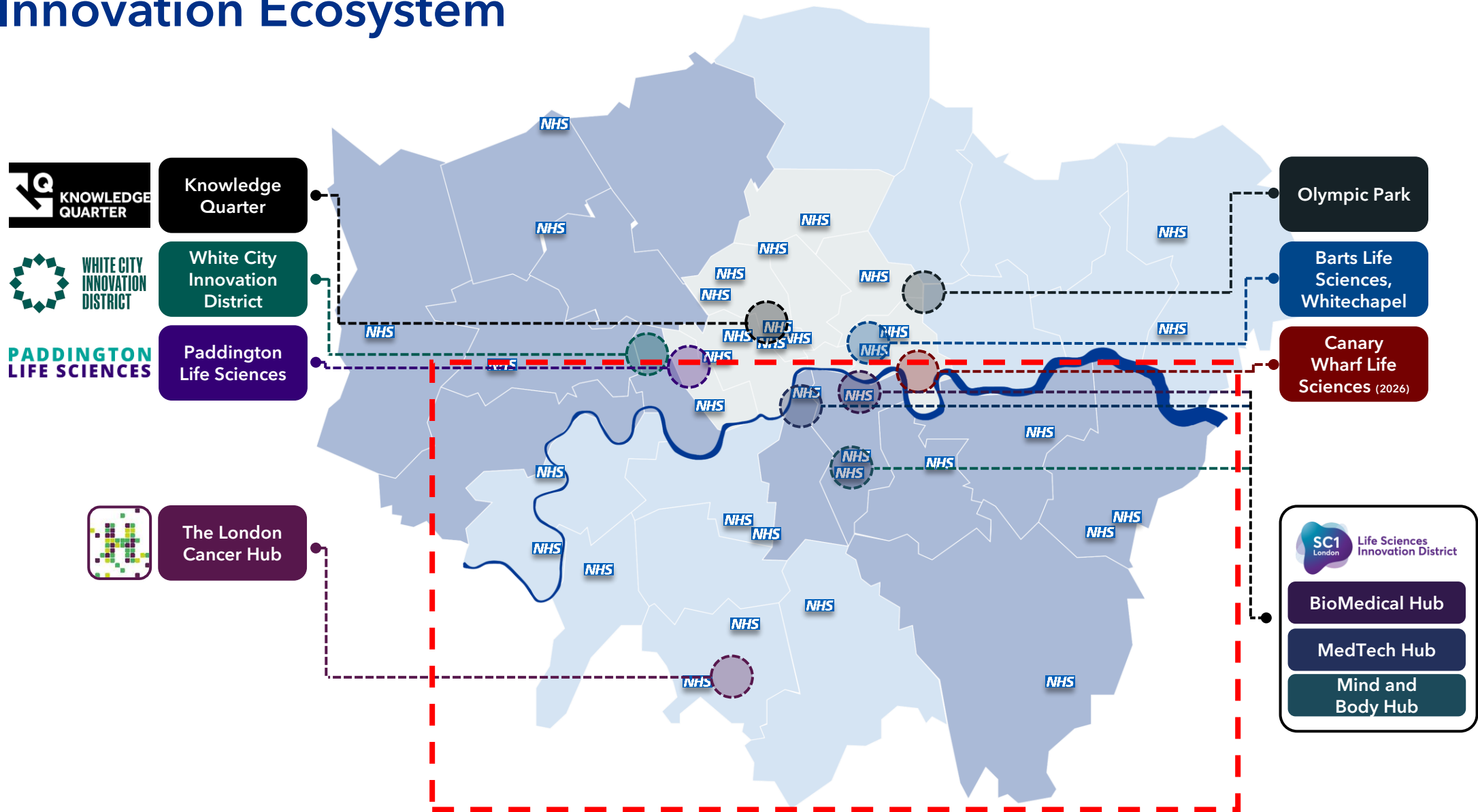- Shared data platform
- Strong funding mechanisms
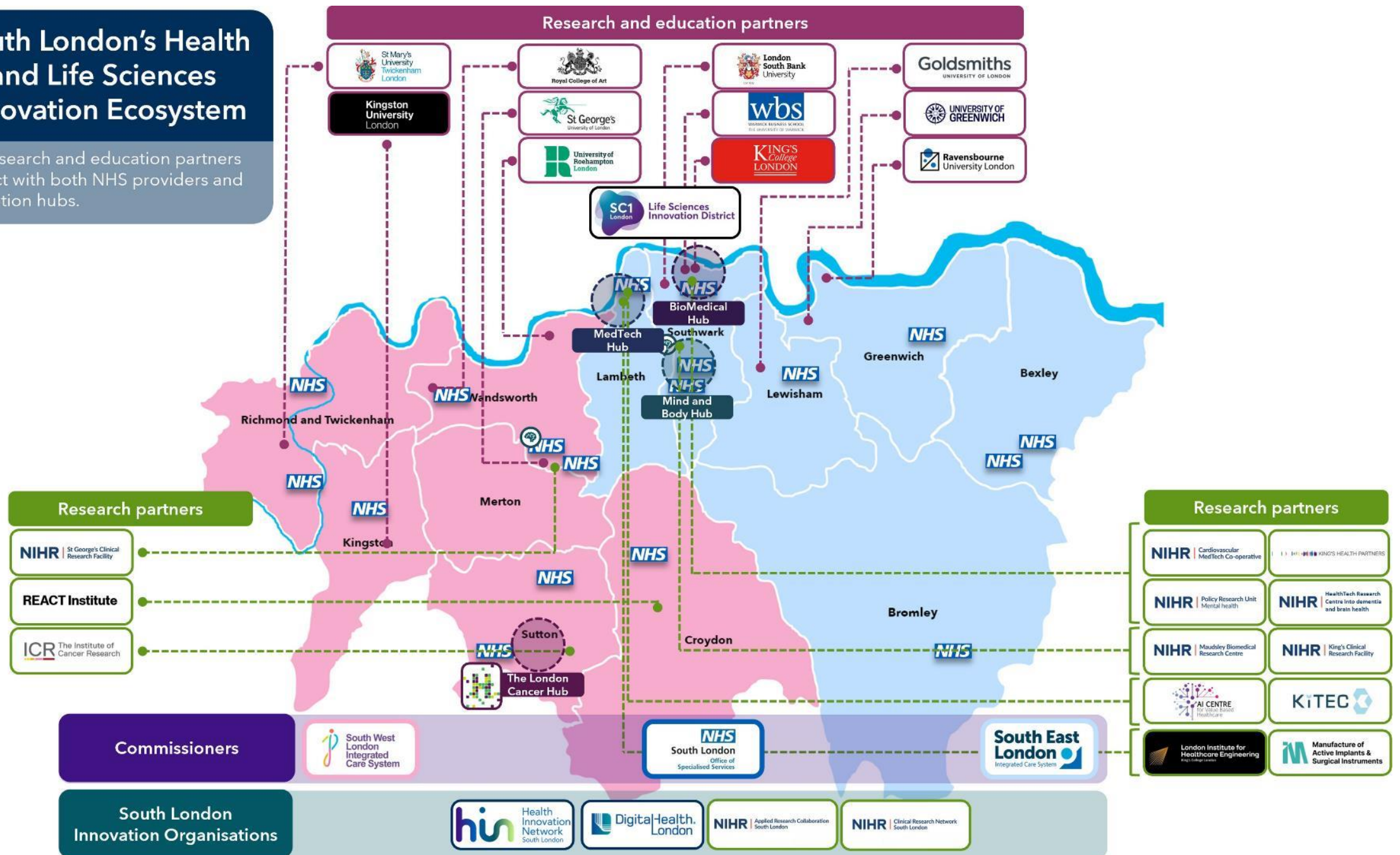- Testing / evaluating infrastructure
- Single payor system
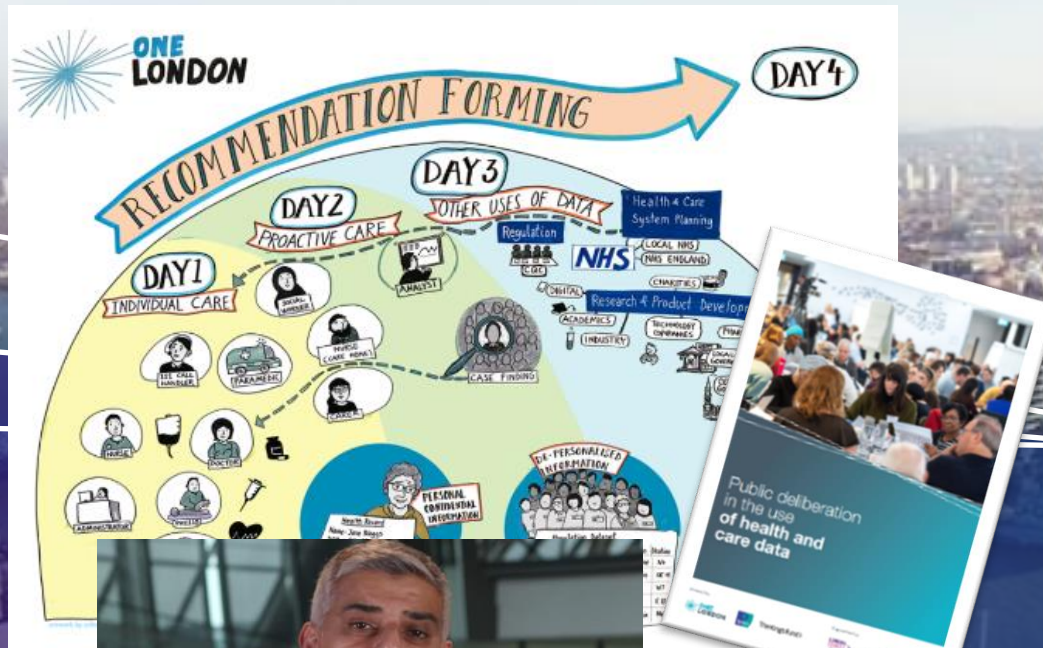
# London's Health and Life Sciences Innovation Ecosystem

South London's Health and Life Sciences Innovation Ecosystem

The research and education partners interact with both NHS providers and innovation hubs.

Core principles that characterise our OneLondon approach are to:

- ***collect data once, and use it for multiple purposes***

- ***collaborate on data platforms, compete on research***

- ***capture reciprocal value in the real world***

- ***cultivate a leadership community***

We are developing this as a Learning Health System: an improvement loop where data about care drives research which drives better care

**Activities within a functioning learning health system: there is no transformation without information**

**Foundations**

| **1** Collect & Store (Local data acquisition) | **2** Collate & Store (System data acquisition) | **3** Curate & Catalogue (Data curation) | **4** Enquire & Explore (Data analysis) | **5** Present & Prioritise (Data visualisation) | **6** Act & Interact (Data use & users) |
|---|---|---|---|---|---|
| Patient interactions happen, some of which are recorded | Info about a person, drawn from across care settings, is combined to form a 'whole person' view | Concepts and rules (like cohort definitions) are established as structured queries / data tables that organise the data for use (stored in catalogues) | Data catalogues/searches identify the right data, which is analysed for a specific question using a range of specialist tools (e.g. stats programmes) | Some of the outputs of the analysis are visualised through applications (e.g. system dashboards, clinical systems, or patient apps) | Clinical decisions are made which enhance care at an individual level<br><br>Public health & planning decisions are made to enhance services, access, effectiveness and efficiency<br><br>Research findings are shared to enhance knowledge, and develop diagnostics and treatments |

Activities of a Data Service

Activities of an Analytics Platform

Brought together as a Secure Data Environment

Supported by Clinical Networks, Clinical Effectiveness Groups and Health Innovation Networks

# We are using this data to identify & address health disparities – leveraging expertise at universities e.g. King's College London

**K**ING'S *College* **LONDON**

## Population Health Institute
*Our vision is to make the world a healthier place*

### Precision population health

1. Create a SE London population health living lab

2. a high-value learning health system

3. Leverage data science & AI

4. co-create health outcomes with rapid prototyping & scaling-up of innovations

Health equity: addressing health disparities
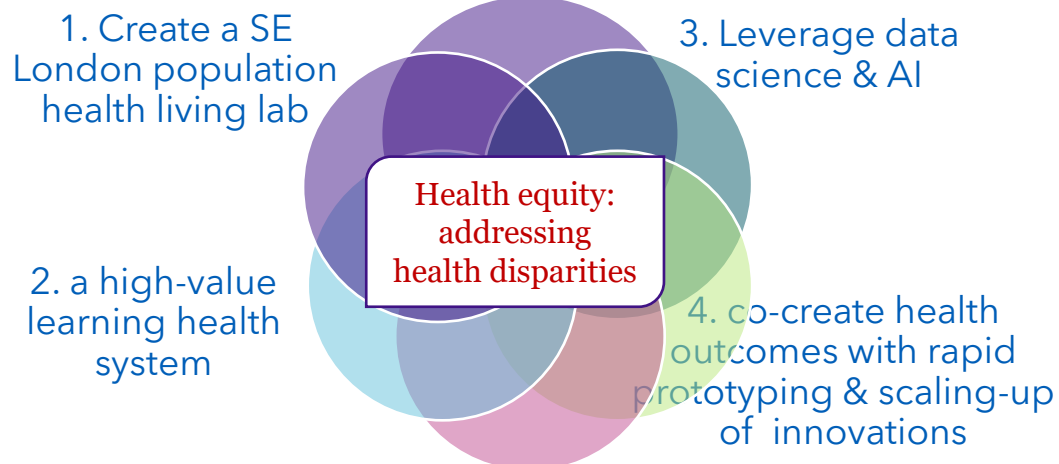
### Population health management data analytics framework
*transforming data insights into actions*

1. **Descriptive**: reporting & visualisation
2. **Diagnostic:** root cause analysis
3. **Predictive**: forecasting
4. **Prescriptive**: optimisation
5. **Cognitive**: AI & Machine Learning
6. **Actionable**: real-time support
7. **Outcome optimisation:** continuous learning

*For more information visit: KCL Population Health Institute – Leads: Professors Josip Car, Matthew Hotopf CBE, Irene Higginson OBE*

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# The AI centre for Value Based Healthcare forms the centre for a network focused on applying AI in healthcare settings

## AI Centre partners:
(10 NHS orgs., 4 universities, 17 industry)



## AI Centre supports across the whole AI lifecycle
(including several key infrastructure platforms shared across partners)



| Data collection and standardisation | Protect safety and privacy, respect patient opt-out | Train and validate AI | Deploy AI for clinical use and patient care |

*For more information visit: https://www.aicentre.co.uk — Lead: Prof. Seb Ourselin, Sigal Hachlili*
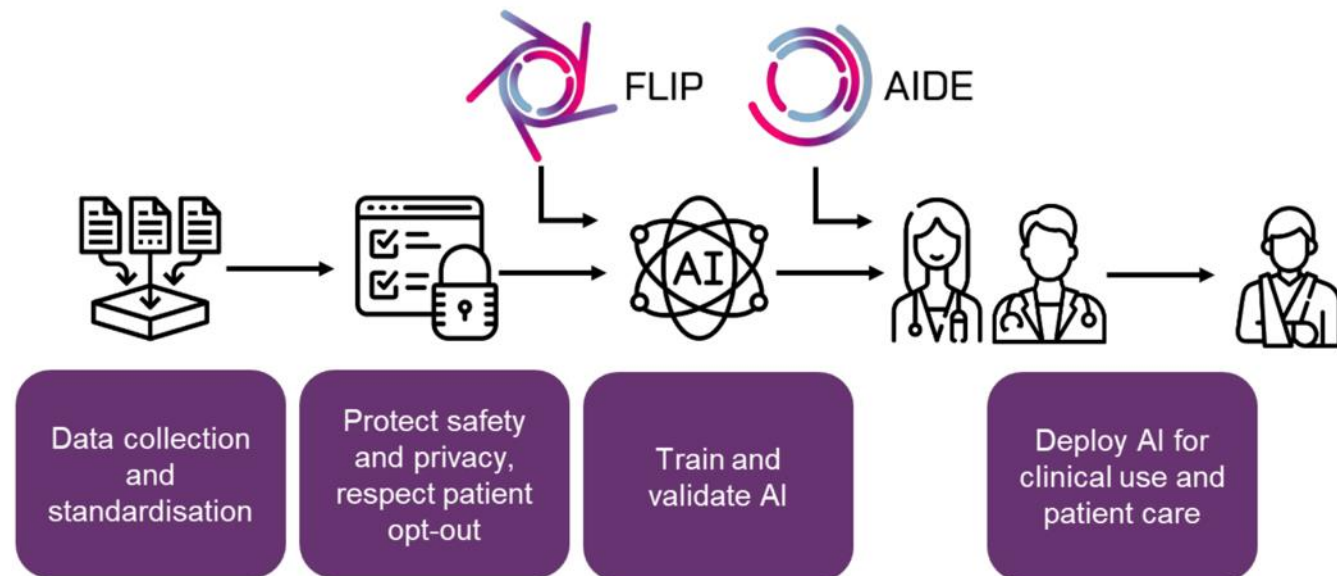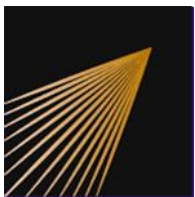
# London Institute for Healthcare Engineering (LIHE) is at the centre of our MedTech hub



Top floor event space and terrace
2 board rooms with foldable partition

Resident industry partners

Spin-outs/SMEs

St Thomas' Accelerator

LIHE expert team offices

Common area and members' café

2 x 70 person capacity lecture theatres Foldable partition
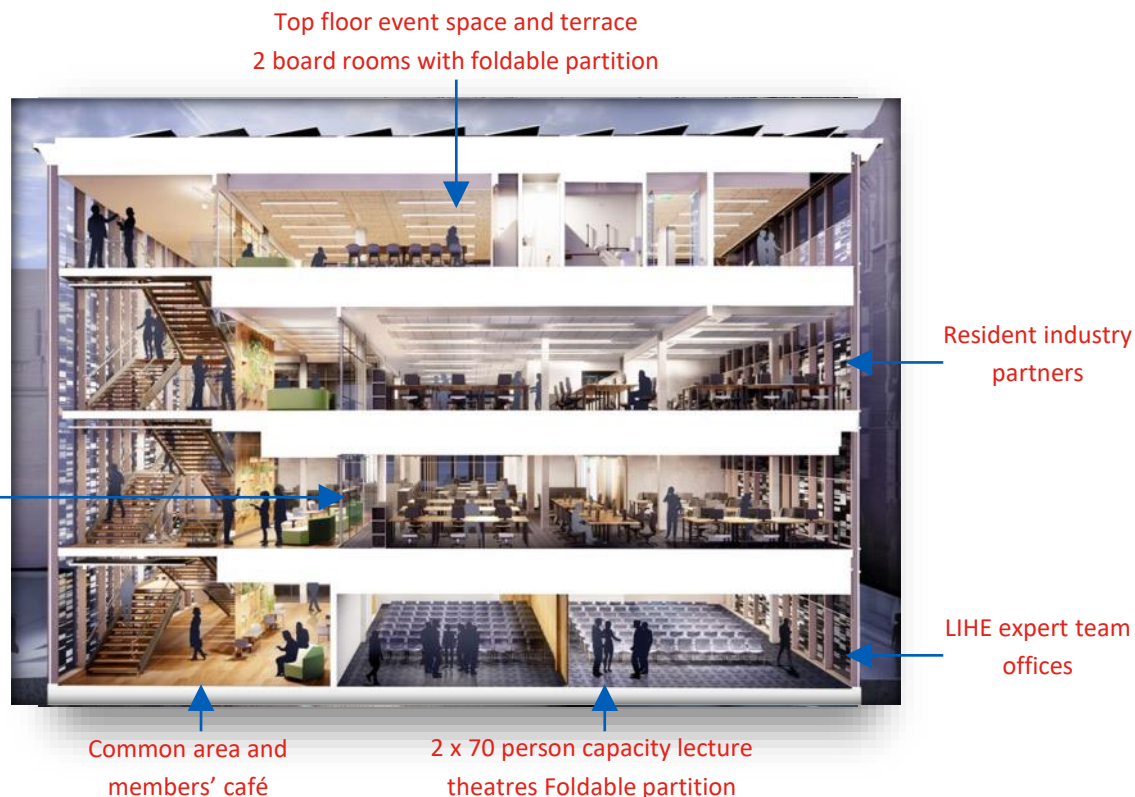
- A globally recognised centre of excellence for medical device translation

- The hub for all MedTech activity in the UK and EU

- An Ecosystem of the MedTech Industry With Global Reach

- Partnership with 6 universities

For more information visit: https://lihe.org.uk

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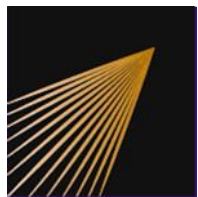
# London Institute for Healthcare Engineering (LIHE) is a good example of how we support an ecosystem at hubs



For more information visit: https://lihe.org.uk
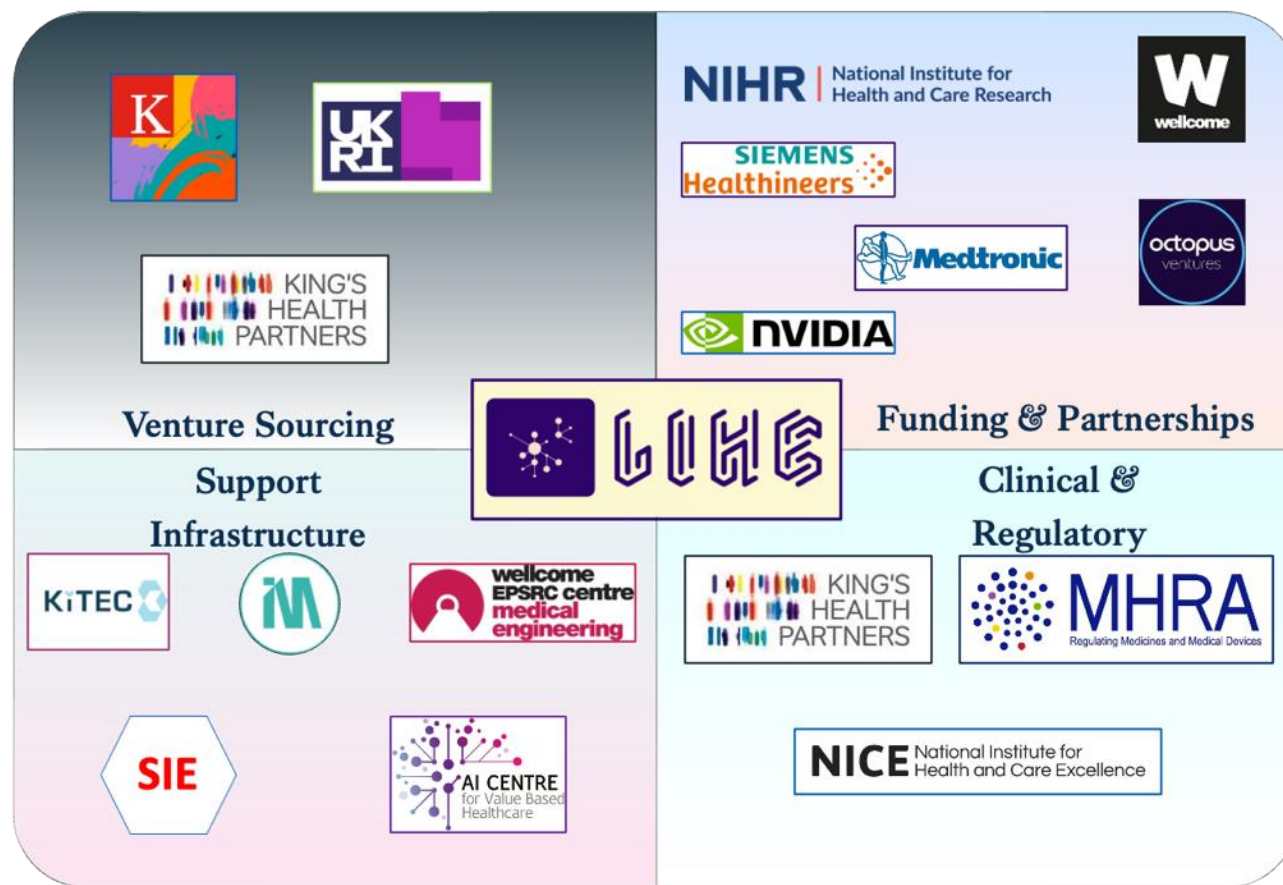
# Pharmaceutical research across the south London hospitals is coordinated from the Biomedical hub and mind and body hub



- These networks coordinate clinical trials across the south London hospitals including at:
  - Guy's and St. Thomas'
  - King's College Hospital
  - St. George's hospital
  - Maudsley Hospital
  - Royal Marsden

- The Centre for Translational Medicine is focused on linking research to local health needs and the population

For more information visit: https://rdn.nihr.ac.uk/region/south-London, https://www.maudsleybrc.nihr.ac.uk

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# Several centres across south London with facilities to test/simulate clinical environments including REACT in southwest London
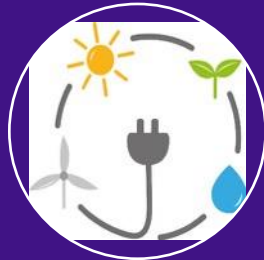
Energy and Sustainability

Health Tech

Smart Manufacturing

**Croydon Innovation Centre Verticals**

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LSBU
EST 1892
School of Engineering

For more information visit: https://www.lsbu.ac.uk/research/centres-groups/react-innovation-centre

# The Health Innovation Network runs programmes to support innovators to develop and deploy solutions to local problems

**Health Innovation Network South London**

**Health Innovation Network**

Universal offer for all innovators (innovation clinics, signposting and advice) along with enhanced and distinctive offers

**Health Innovation Network | NHS England**
**NHS Innovation Accelerator**

National scale programme for health innovators

**Accelerating FemTech**

Innovators with technology solutions to address current challenges in women's health

**Mindset-XR**
**Innovator Support programme**

Innovators with XR technology solutions to address mental health & wellbeing

**DigitalHealth.London**

**DigitalHealth.London | ACCELERATOR**

Helping companies speed up spread and adoption

**DigitalHealth.London | GENERATOR**

Helping companies and academics to generate evidence

**DigitalHealth.London | LAUNCHPAD**

Helping companies launch a new product or service

**DigitalHealth.London | LEAP**

Supporting founders from diverse backgrounds who are underrepresented in the digital health space.

**DigitalHealth.London | DIGITAL PIONEER FELLOWSHIP**

Helping staff transform the NHS through digital

**DigitalHealth.London | NET ZERO**

Helping companies learn about the importance of net zero

**DigitalHealth.London | SOCIAL ENTREPRENEURS**

Helping social entrepreneurs realise impact in health and social care

# Driving investment - Success to date

- Over **300 enterprises** supported by HIN's innovator  support programmes

  - Over **150 enterprises** over **8 cohorts** of the **DigitalHealth.London Accelerator** programme

- **£2.16bn** Investment raised by innovators supported

- **200+** Investors engaged

# DigitalHealth.London's Accelerator has supported many of the leading companies in digital health over the last 8 years

# Investment for healthcare and growth – *Relationships at all stages of growth*



**Investment Relationships for Growth**

**Start-ups & Spin-outs**   **Angel investors**   **Venture Capital**   **Private Equity**   **Public Markets**

# Process for deploying innovation in south London
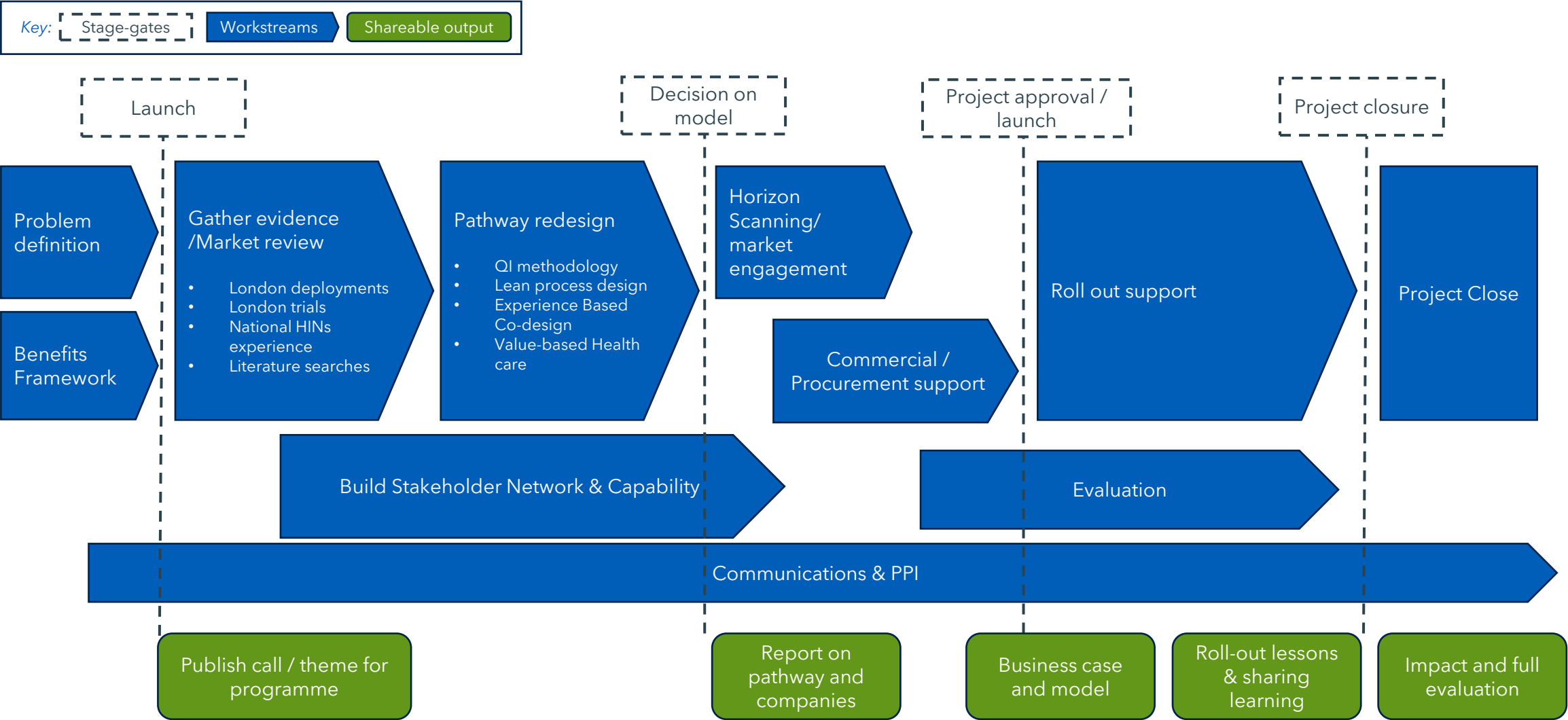
# Case-study: Innovation Partnership with South East London Cancer Alliance

**AIM:** Supporting the South East London Cancer Alliance (SELCA) to understand the market for personalised care platforms to inform future personalised care module development or procurement.

**ACTIVITIES:** Compiled the **needs articulation** and developed **inclusion criteria;** researched the market to identify solutions meeting the inclusion criteria; **shortlisted suppliers** and assessed functionality of solutions; produced a **market review report** to inform decision making.

## IMPACT

Teams equipped with understanding of the commercial models, costs, functionalities, capabilities and standards across the market.
Piloting of one of the identified solutions

### HIN/SELCA Partnership Roadmap



| Phase 1: 22 - 23 | Phase 2: 23 - 24 | Phase 3 : 24 - 25 |
|---|---|---|

**Understanding the Challenge**
- Needs Assessment
- Process and Innovation Mapping
- Data Analysis and Synthesis
- Establishing network and community

**Innovation Selection**
- Prioritisation and Needs Articulation
- Horizon Scanning and Rapid Review
- Market Review
- Innovation Exchange
- Innovation Selection and Funding

**Innovation Procurement and Adoption**
- Innovation Adoption Plan
- Bid Writing and Business Case Development
- Procurement Framework

**Understanding and Communicating Impact**
- Project Evaluation
- Sharing and learning through regional NHSE/CA forum
- Spread and Scale
- Communicating Impact

Guidance, developing capability and community building

# There are large disparities in income & deprivation and much of our health innovation work focuses on closing the gap



**FeNO**

The FeNO RUP (Rapid Uptake Product) project focused on the introduction of FeNO devices into primary care settings, improving access to objective testing for asthma diagnosis.

23 new FeNO devices introduced into primary care since April 2021, expected to complete over 8,000 tests per year, and to April 2023 supported asthma diagnosis for ~450 patients.

**SPECTRA tool (Asthma Biologics project)**

SPECTRA is a proactive identification tool for patients with potential severe asthma, which was promoted in primary care through the Asthma Biologics RUP (Rapid Uptake Product) project.

45 practices downloaded SPECTRA, with potential to identify 1,500 patients with 'hidden' severe asthma. If all eligible patients were optimised, annual cost savings could be >£4 million

Notes:
- Peripatetic FeNO services indicated with a dot in the centre of the borough
- For SPECTRA, several sites represented under a single PCN account (hence concentration in certain areas)

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Project
- SPECTRA
- FeNO
- InHIP (CVD)
- InHIP (Respiratory)
- InHIP (Maternity)

**InHIP CVD-prevention**

Piloting a PCN-based pharmacist-led community lipid management hub in Bexley, targeting Core20 and PLUS patients with high CV risk, statin intolerance and/or escalation of lipid lowering therapy required.

Hub launched in July 2023.

"People have more time to discuss their concerns and to explore options" - Pharmacist

**InHIP Respiratory (Merton)**

Increasing capacity for respiratory diagnostic testing in the two most deprived areas of Merton through the establishment of an additional clinic

The new clinic capacity is expected to launch in late 2023

**InHIP Respiratory (Sutton)**

Enhancing individualised support for Core20PLUS patients, into respiratory diagnostic testing, through a support package including: development of searches, increased capacity for call/recall and community outreach activities

The development of the package is planned through Q3, with implementation, and patients benefitting, in Q4 23/24

**InHIP Maternity**

Improving monitoring and risk-management of women with high BMI and / or suspected pre-eclampsia through the introduction of PlGF-based testing and home blood pressure monitoring at Croydon Univeristy Hospital.

Testing and monitoring is expected to being in late 2023.

**InHIP Respiratory (Bromley)**

Establishing primary care-based respiratory diagnostic hubs in the 3 most deprived PCNs in Bromley. 2 'arms' of testing are planned: Arm 1 delivered by a physiologist hosted by the PRUH, Arm 2 owned by primary care

Testing in both arms is expected to start in late 2023. The PRUH physiologist recruitment process has recently concluded.

# In summary, the south London innovation ecosystem is characterized by 3 key elements linked through public involvement to local priorities

| **Single combined data service for clinical care and research** | **Series of networks with central hubs for collaboration** | **Process, and programmes focused on adoption** |