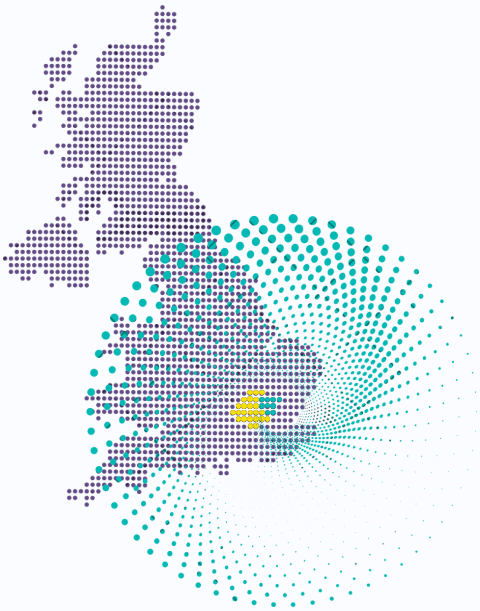
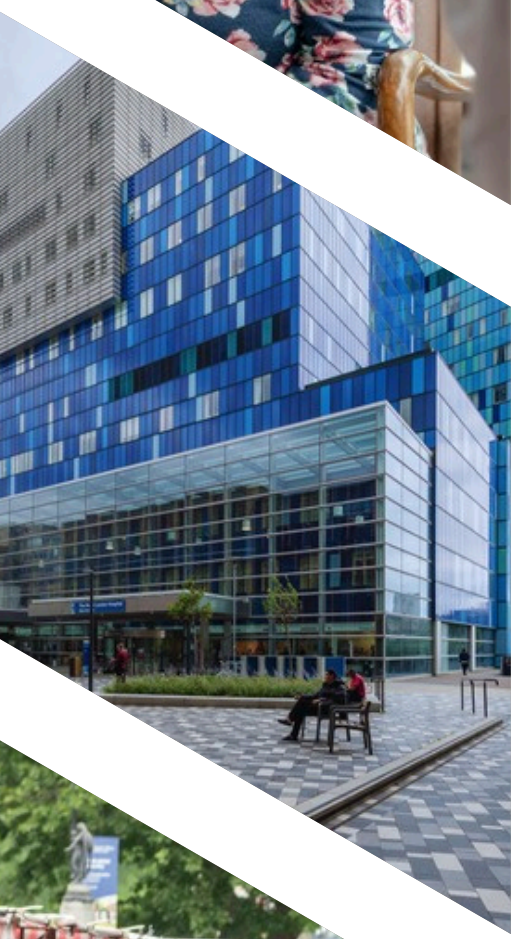
NHS
Barts Health
NHS Trust

BARTS HEALTH DATA PLATFORM

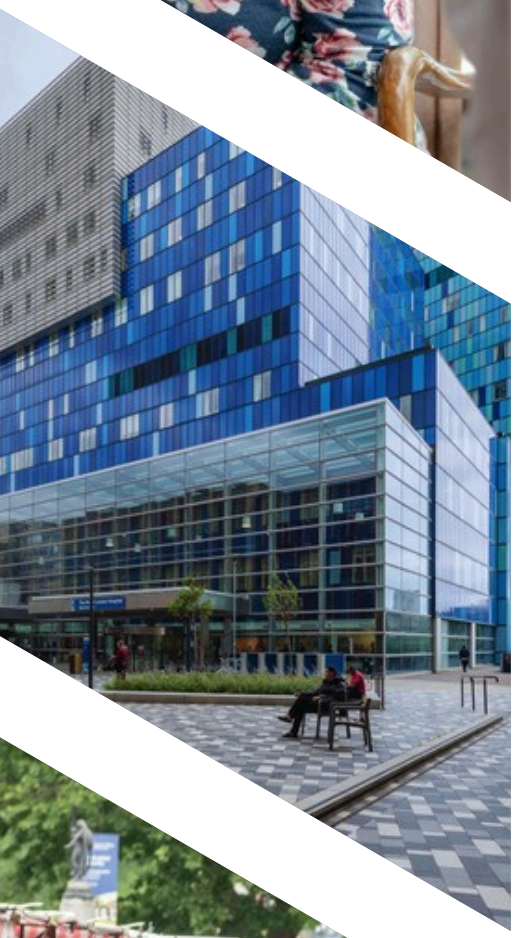
Digibook 2025



barts CHARITY



Content



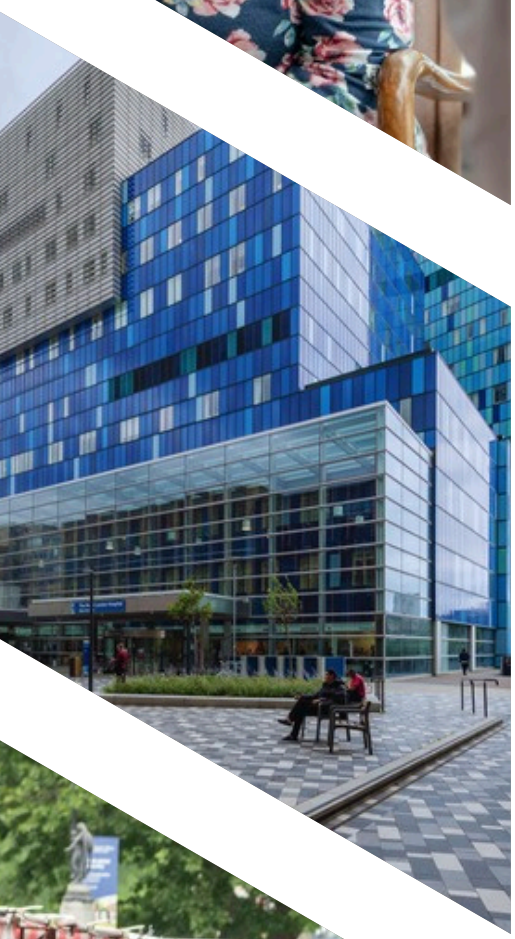
About us

The Precision Medicine Programme has established an integrated health data platform which provides a route to apply for access to research ready NHS patient data and a secure analysis environment for researchers to find insights from the data they have been authorised to access where they can improve the outcome of patients and public in East London.

The Barts Health Data Platform (BHDP) uses modern technology that complies with necessary data security and governance requirements required for patient data analysis. All projects using the data access service will follow GDPR and other legal and ethical responsibilities, protecting patient and public rights to confidentiality, fairness and equity.

By offering an integrated data access service, Barts Health will be at the forefront of supporting data-led innovation around patient data, developing its role as a key player in the life sciences economy and improving patient health and wellbeing, reducing inequalities and improving patient care globally.

The BHDP generously supported with an investment of £5.8m from Barts Charity, stands at the forefront of healthcare innovation. This "research-ready" resource will bring together diverse health data, including imaging, electronic health records, and genomics, to facilitate innovative research.



Our journey

2025

Public Launch

The BHDP was made available to all users, supported by marketing, onboarding, and ongoing product optimisation.

Sectra release

We became the first in the UK to integrate and align the platform with Sectra systems, ensuring seamless imaging interoperability and data security.

Beta Launch

We expanded access to selected users to refine performance, usability, and design based on real-world insights.

2024

MVP Launch

The minimum viable product was released to test key functionality and gather early feedback from a small user group.

BHDP implementation

We transitioned from planning to delivery, coordinating with partners to drive the platform.

2023

System Design

Refinement of use case & Architecture

Scoping

Scoping and design of BHDP

2022

Barts Charity

The Barts Health Data Platform (BHDP), generously supported with an investment of £5.8m from Barts Charity, stands at the forefront of healthcare innovation. This "research-ready" resource will bring together diverse health data, including imaging, electronic health records, and genomics, to facilitate innovative research.

The BHDP represents a significant leap forward in harnessing the power of patient data to improve healthcare outcomes. This innovative initiative not only demonstrates the potential of collaborative efforts between healthcare providers, researchers, and charitable organisations but also promises to transform patient care and medical research for the diverse communities of East London and beyond.

Together, Barts Health NHS Trust, Barts Charity and Barts Life Sciences are proving that when we combine compassion, innovation, and data-driven insights through initiatives like the BHDP, we can make better healthcare possible for all.

Scan the QR code to find out more:

Impact

Discover how research and innovation at Barts Health are making a real difference. You can explore case studies which show how approved projects at Barts Health are making a difference, from improving patient care to shaping better services. These examples highlight the real-world value of turning data into action. You can learn more on our website.

Federated analytics for studying drug utilisation in primary care and hospital settings in the UK

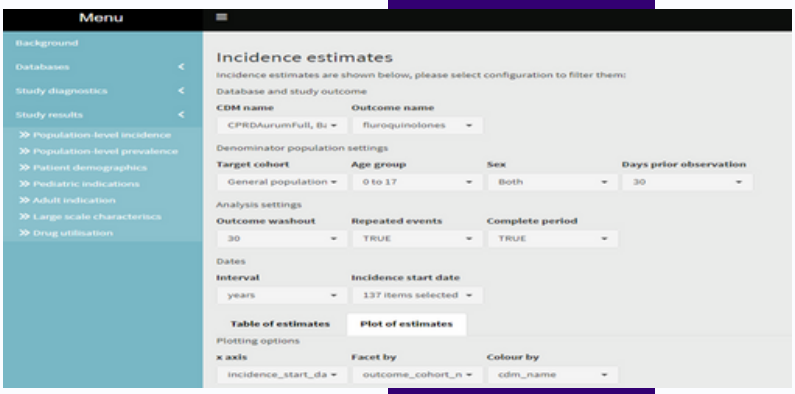


Figure 1

case study

Aim

To assess a federated analysis approach for studying drug utilisation in paediatrics.

Background

Data for paediatric studies can be sparse and require multiple data sources gathered from primary and secondary care. Using multiple datasets poses data governance risks. One approach is to minimise the risk of data transfers by using a federated analysis design. In this UK study, we aim to apply a FA design to the trends of Fluoroquinolones (FQ) drug utilisation in the UK, in response to the 2019 risk minimisation measures (RMM) issued by the UK's Medicines and Healthcare products Regulatory Agency.

Methods

Data were locally extracted from four UK databases CPRD GOLD, Barts Health, Great Ormond Street Hospital, and HIC Dundee. We included all subjects <18years old, registered in any of the databases between 01/01/2012 and 31/12/2022 with at least 30 days of previous database visibility before exposure to FQ. The code was developed by the UK Observational Health Data Science and Informatics team at Oxford University then tested at each individual site prior to running the final iteration. Results from each site were combined in summary form during a 5-day study-a-thon.

Conclusion

The federated analytics approach facilitated a large-scale multi-centre study, combining several national and hospital datasets, with minimal risk to data governance. These large-scale characterisation and drug utilisation studies are essential, particularly in paediatrics where data may be sparse.

RESULTS

Over the 5-day studyathon period, we successfully generated results for six data partner sites. Using a RShiny app which was built by the data science study team during the studyathon, the aggregated results were pooled and shared with the study partners. The app allows various explorations of the pooled data from contributing data partners to be carried out. See Figure 1. We combined the results from all partner sites to calculate annual incidence rates of FQ. Country-wide trends before and after the RMM and differences in FQ utilisation between primary (CPRD) and secondary care (Barts Hospital) are presented as prevalence and incidence in Figure 2.

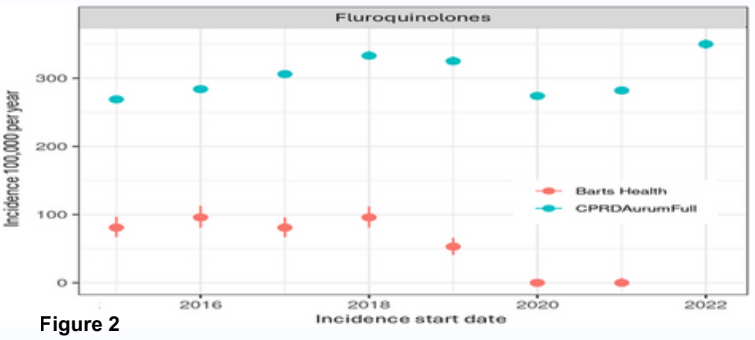


Figure 2

Study Authors

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5 Health Informatics Centre (HIC), School of Medicine, University of Dundee, Dundee, DD1 4HN, United Kingdom
6 Barts Bone and Joint Health, Blizard Institute, Queen Mary University of London, London, E1 2AT, United Kingdom
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8 Barts Health Data, The Royal Hospital, London, E1 1BB, United Kingdom
9 Medicines and Healthcare products Regulatory Agency (MHRA), London, E14 4PU, United Kingdom

Empowering Cancer Care through AI: OncoFlow's Journey with Barts Health NHS Trust

case study

About

At OncoFlow, we believe that artificial intelligence (AI) has the potential to radically enhance the way cancer care is delivered. Over the past year, our team had the privilege of working with Barts Health NHS Trust via their Precision Medicine Platform to access breast cancer data.

As one of only four companies UK-wide selected to partake in Medicines and Healthcare Products Regulatory Agency (MHRA's) first-of-a-kind AI Airlock regulatory sandbox, we leveraged this dataset to test and refine OncoFlow - our AI-powered cancer decision support system for multidisciplinary teams (MDTs). The data was pivotal in helping us evaluate the safety, accuracy, and explainability of our AI models under a controlled, regulatory-grade environment, as well as shape and inform the future guidance from the MHRA for AI medical devices (AIaMD).

Impact of Accessing Barts Health Data

The dataset from Barts enabled us to benchmark OncoFlow's performance on real, representative clinical data, which would not have been possible with synthetic or generic datasets. As a result:

- We demonstrated that large language models (LLMs) significantly outperformed traditional tools in extracting clinically relevant information from radiology and histopathology reports.
- Our AI achieved 92% accuracy in treatment matching based on UK guidelines for breast cancer (NICE), and 100% adherence to the NHS SACT protocols.
- These outcomes contributed directly to our ability to secure additional partnerships and initiate early-stage NHS and international pilot discussions.

Benefits to Patients and the Local Community

By focusing on data from a richly diverse East London population, our AI models have been shaped to reflect the complexity and variability of real-world cancer cases. The goal is that OncoFlow will:

- Enable faster and more consistent MDT decisions, reducing time to treatment. Reduce the MDT prep time, introducing time and cost efficiencies into cancer pathways Trust-wide.
- Ensure evidence-based, personalised care pathways, particularly for complex or borderline cases.
- Support more equitable access to cutting-edge decision tools in underserved populations.

Feedback on the DAC Process

The data access process via Barts' Precision Medicine Platform was clear, well-governed, and ensured high standards of security and compliance. The support and oversight from the Barts DAC team helped us build internal practices aligned with NHS governance expectations—something that proved vital during MHRA Airlock participation.

We're proud to have collaborated with Barts Health NHS Trust and grateful for their continued leadership in enabling innovation in cancer care. OncoFlow will now continue its journey through real-world pilots, broader use cases across the UK and beyond, and expansion to other tumour types—with patients and clinicians always at the centre of what we do.

Accessing lung cancer care in urban and rural settings: Development of a patient engagement tool

Background

Lung cancer is the third most common cancer in the United Kingdom (UK) and the leading cause of cancer mortality globally. There are stark inequalities in cancer care and outcomes in the UK, with patients from deprived areas facing poorer outcomes. Timely diagnosis and treatment are essential for improving cancer outcomes, but patients in remote rural and coastal areas, or densely populated urban communities, likely face unique and overlapping challenges to engaging with care. We aimed to design a patient engagement intervention informed by lung cancer patients' and carers' experiences of the care pathway, rapid review evidence and stakeholder input.

Methods

A pragmatic, evidence- and theory-based intervention development process was taken. In-depth interviews were conducted with people with lung cancer and their informal carers from the contrasting areas of North East London and Lincolnshire. Purposive sampling was used to ensure diversity in treatment modality, gender, ethnicity, location, and carer relationship. A rapid review was conducted to identify patient engagement interventions for lung cancer patients, and barriers and facilitators to implementation. Three phases of stakeholder consultations were conducted to explore healthcare professional and administrative perspectives of the barriers and facilitators for patient engagement and experience, and to help develop the patient engagement tool. Data were triangulated using the Capability-Opportunity-Motivation Model of behaviour change (COM-B) and the Theoretical Domains Framework, to identify factors to target.

Conclusion

This study sheds light on the experiences and challenges faced by lung cancer patient and carers in rural, urban and coastal areas. The resulting patient engagement tool aims to improve health outcomes and patient experience by addressing general and location-specific barriers to lung cancer care. The tool will help address disparities in experiences and health outcomes by addressing factors that contribute to inequalities in lung cancer patient engagement.

RESULTS

Interviews were conducted with 54 lung cancer patients and 31 carers. 33 papers were included in the literature review. 39 healthcare professional and administrative stakeholders were consulted in two rounds of workshops (final workshop to be held in December 2024). A prototype tool was developed which maps out the lung cancer care pathway and signposts patients to trusted, lay-language information and local support services. The tool aims to address knowledge gaps or misconceptions, empower patients to prepare for appointments and engage in discussions, and instil motivation through goal setting, hopeful language and establishing appointment purpose.

case study

Study Authors

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Dr David Nelson, Lincoln Institute for Rural and Coastal Health, College of Health and Science, University of Lincoln, UK,

PPIE

Patient and Public Involvement and Engagement

Every day, patients, carers, and members of the public play a vital role in making research possible.

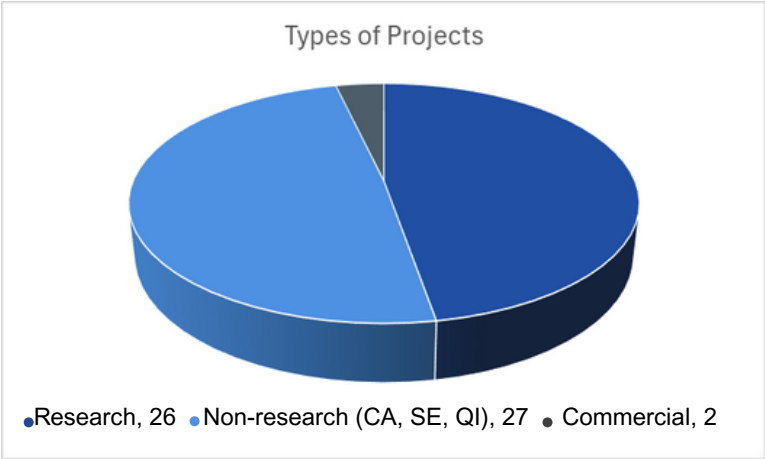
At the heart of our mission is a commitment to transparency, inclusivity, and collaboration. We actively involve the public through focus groups, our Data Access Committee, and advisory boards. Their input helps shape priorities, improve project design, and ensure that projects reflect the needs and experiences of the communities we serve. By working together, we can make research more relevant, effective, and impactful for everyone.

Learn more about public involvement initiatives by visiting our website.

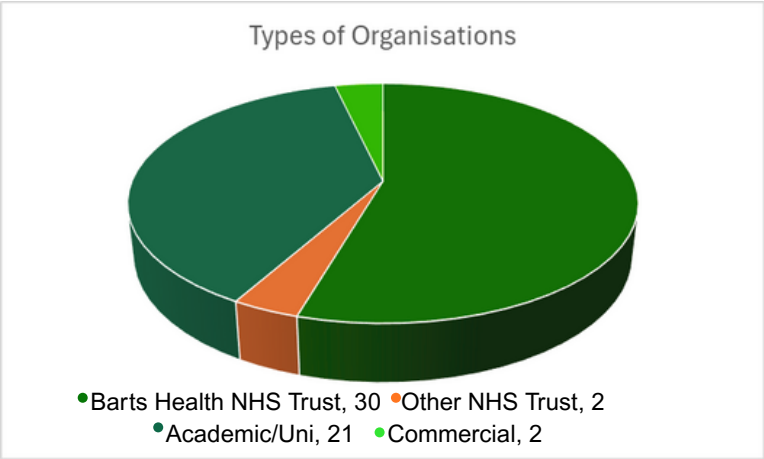
Approved projects

In these pages, you will find snapshots of research and innovation projects that use our health data to generate insights, enhance care, and support better outcomes for our community. The accompanying charts show a breakdown of project types and the organisations we collaborate with, giving you a clear picture of the breadth and reach of our work.

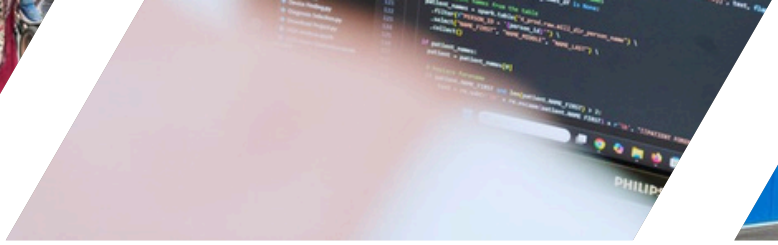
To explore the full list, visit our website.



A breakdown of the different kinds of research and innovation projects approved at Barts Health.

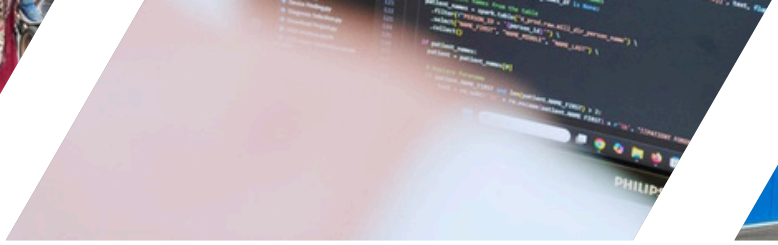


An overview of the partners and organisations we collaborate with across our portfolio.

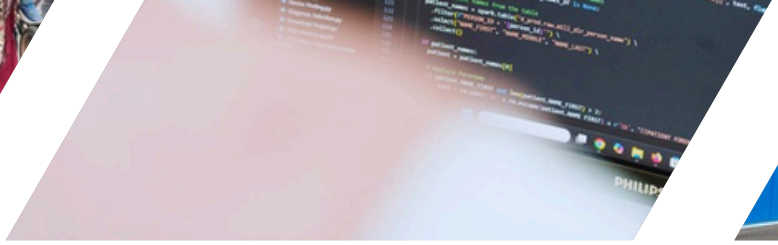

Current projects

Project Type	Short project title	Project lead name	Lead Organisation
Research (Hosted)	Lung Cancer	Dr Daisy McInnerney	QMUL (Academic/Uni)
Research (Hosted)	AssistMS	Professor Klaus Schmierer	QMUL (Academic/Uni)
Service Evaluation	UCLPartners virtual ward monitoring	Nathan Roberts	UCL Partners (Academic/Uni)
Service Evaluation	MHRA studyathon	Dr Jenny Lane & Professor Xavier Griffiths	Barts Health NHS Trust
Service Evaluation	Vascular intervention in diabetic patients	Mr Sandip Sarkar	Barts Health NHS Trust
Clinical Audit	SIRIUS	Dr Suthesh Sivapalaratnam	Barts Health NHS Trust
Quality Improvement	PREDICT	Dr Guy Lloyd	Barts Health NHS Trust
Research (Sponsored)	ACCORD	Mr Livio Di Mascio	Barts Health NHS Trust
Clinical Audit	Traumatic Knee Injury	Professor Dylan Morrissey	Barts Health NHS Trust
Quality Improvement	Cerebral Venous Sinus Thrombosis	Dr Gnanapavan	Barts Health NHS Trust
Service Evaluation	Sudden Cardiac Death Genetic Testing	Professor Perry Elliot	St Georges NHS Hospital
Research (Hosted)	Linking dental data to patient health records	Professor Jianhua Wu	QMUL (Academic/Uni)
Clinical Audit	Streamlining the Breast Cancer MDT	Dr Aruni Ghose	Barts Health NHS Trust


Projects continued

Project Type	Short project title	Project lead name	Lead Organisation
Research (Sponsored)	Claude's Biobanks & Pancreatic Cancer	Professor Clauda Chalala	Barts Health NHS Trust
Research (Sponsored)	Protect - EPR	Dr Tom Abbott	QMUL (Academic/Uni)
Service Evaluation	PYMS (Performance of paediatric yorkhill malnutrition score	Professor Konstantinos Gerasimidis	University of Glasglow (Academic/Uni)
Research (Sponsored)	Natural language processing of Histopathology reports	Dr Adam Levine	Barts Health NHS Trust
Service Evaluation	Integrated epilepsy and mental heathcare pilot	Dr Amit Kumar Bali	Barts Health NHS Trust
Research (Sponsored)	AI liver screening	Dr Usman Bashir	Barts Health NHS Trust
Service Evaluation	Request for acess to Clinithink CLiX tool	Dr Sophie Williams	Barts Health NHS Trust
Research (Sponsored)	SETRA testing tool	Dr Concetta Piazzese	Barts Health NHS Trust
Research (Hosted)	ICC Study	William Young	St. George's uni of London (Academic/Uni)
Research (Sponsored)	AI morality & surgical timing	Professor Tuan Pham	QMUL (Academic/Uni)
Quality Improvement	Dental feasibility	Dr Richard Fitzgerald	Barts Barts Health NHS Trust
Research	SNPnexus Clinica	Professor Claude Chelala	QMUL (Academic/Uni)


Projects continued

Project Type	Short project title	Project lead name	Lead Organisation
Quality Improvement	OH care	Ian Taylor	Barts Health NHS Trust
Service Evaluation	EBP in critical care	Dr Tim Stevens	Barts Health NHS Trust
Research	NEOLA	Professor Xavier Griffin	QMUL (Academic/Uni)
Service Evaluation	VERTICALE® Cervical System	Mr Rajesh Mangattil & Mr Simon Williams	Silony Medical (Commercial)
Research	IMAGiNe study	Dr Stephen Keddie	Barts Health NHS Trust
Research	GBS3 trial	Dr Linda Fiaschi	University of Nottingham (Academic/Uni)
Research	ARCNet	Dr Usman Bashir	Barts Health NHS Trust
Service Evaluation	Trauma in pregnancy	Dr Francesca Bladt & Dr Jenny Lane	Barts Health NHS Trust
Clinical Audit	CMV in pregnancy	Dr Kathryn Harris & Harry Chinque	Barts Health NHS Trust
Clinical Audit	Mining EDW	Dr Keith Sacco	Barts Health NHS Trust
Clinical Audit	UTI diagnosis	Dr Simon Conway	Barts Health NHS Trust
Service Evaluation	Liver disease testing	Dr Michael Hewitt	Barts Health NHS Trust
Research	Genes and Health	Dr Ben Jacob and Professor David van Heel	QMUL (Academic/Uni)

Projects continued

Project Type	Short project title	Project lead name	Lead Organisation
Quality Improvement	Reducing inequality in young people with diabetes	Dr Myuri Moorthy	Barts Health NHS Trust
Service Evaluation	3D image processing software	Dr Mike Mullen	Barts Health NHS Trust
Research (Hosted)	Breast Cancer	Professor Claude Chalala	QMUL (Academic/Uni)
Research (Hosted)	ADAMS	Dr. Ruth Dobson	QMUL (Academic/Uni)
Research (Hosted)	BloodCount!	Dr Suthesh Sivapalaratnam	Cambridge Uni Hospitals NHS Foundation Trust & UCL (Academic/Uni)
Research (Sponsored)	Barts BioResource	Professor Steffen Petersen / Professor Art Tucker	Barts Health NHS Trust
Research (Hosted)	NLP & AI	Julia Ive	QMUL (Academic/Uni)
Research (Hosted)	Vertex	Professor Paul Telfer	QMUL (Academic/Uni)
Service Evaluation	Gastro (FITFILE)	Dr Shameer Mehta	Barts Health NHS Trust

Projects continued

Project Type	Short project title	Project lead name	Lead Organisation
Clinical Audit	ED and alcohol intoxication	Dr Mahmoud Kesra Haddad	Barts Health NHS Trust
Quality Improvement	Anti malaria meds	Dr Daniel Pope	Barts Health NHS Trust
Service Evaluation	Coated nails	Dr Usama Rahman	QMUL (Academic/Uni)
Research (Hosted)	AI ECG	Dr Nay Aung	QMUL (Academic/Uni)
Research (Hosted)	Preventing serious complications in patients with haematological malignancies	Dr Ricky Gondhia	PulseAI (Commercial)
Research (Hosted)	Dental attendances to A&E	Dr Richard Fitzgerald	QMUL (Academic/Uni)
Research (Hosted)	Pulmonary nodules	Dr Micheal Newnham	University of Birmingham (Academic/Uni)
Research (Sponsored)	Global Health OHDSI	Dr Jenny Lane & Dr Usama Rahman	Barts Health NHS Trust
Clinical Audit	Antibiotics resistance	Dr Jennifer Lane	QMUL (Academic/Uni)

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