Project CARDINAL: CVD Impact Through NHS Data Assets in London

Transforming the prevention, detection, and treatment of cardiovascular disease (CVD) in London through scalable programmes

London Driver Project 2025-2026

ONE LONDON | LONDON SECURE DATA ENVIRONMENT

Part of the NHS Research Secure Data Environment Network

Project Leads

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Partners

Introduction

Cardiovascular disease (CVD) remains the UK's leading cause of death. Outcomes for heart failure are worse than they were 20 years ago, and CVD now drives a 10-year life expectancy gap between the richest and poorest. In the worst cases, long NHS waiting lists for cardiac procedures have reached the point where patients die on waiting lists. Within London, this burden is especially high, as groups from the global majority face increased risk, both in terms of life expectancy and treatment outcomes. Beyond the human cost, the economic impact is staggering. Improving prevention could boost the UK's GDP by nearly 1% within a decade, equivalent to £26.3 billion every year.

Timeline and Impact

- **Phase 1 - Initiation and infrastructure:** finalise data access and data sharing agreements, confirm data curation/integration into the London SDE, build reproducible analytical code, convene PPIE forum, initiate stakeholder meetings
- **Phase 2 - Implementation of effector mechanisms:** use Virtual Hospital tools to offer NHS Health Checks to patients identified as high-risk in at least two ICBs via VISOR. Run targeted heart failure screening programmes in GP practices across at least two ICBs via TRICORDER-PLUS. Create a dashboard showing waiting list data across London; train a machine learning model via STAR-PULSE
- **Phase 3 - Reporting and business case submission:** Submit the business case and document the clinical, technical, and governance setup so it can be reused. Finalise blueprints and supporting documents. Share findings, submit evaluation reports and stakeholder materials to national bodies. Publish results in academic journals and present at national/international conferences

Project Summary and Outputs

Project CARDINAL is a clinically-led partnership that uses data to scale up proven heart health solutions across London by delivering real, measurable improvements where they are needed most. Led by a team of clinical and data experts, the project builds on three cutting-edge programmes already making an impact in North West London:

VISOR (Preventing Heart Disease)

Combining artificial intelligence (AI) with clinical insight to identify patients at risk and those most likely to benefit from early intervention

TRICORDER-PLUS (Early Detection)

Implementation of an AI-enabled screening programme to detect heart failure, atrial fibrillation and valve disease – before symptoms appear

STAR-PULSE (Faster Treatment)

Replacing outdated systems with a digital platform, changing how patients waiting for heart procedures are monitored and prioritised

The wide-scale adoption of these programmes will show how the secure, collaborative use of NHS data within the London SDE can lead to smarter decisions, faster treatment, and better outcomes for people living with, or are at risk of, CVD. Project CARDINAL aims to improve measurable cardiovascular outcomes in London by 25% by 2030.

Patient and Public Involvement and Engagement (PPIE)

PPIE is embedded into this work as a core delivery function, aligned to the London SDE priority of trusted, inclusive, and meaningful data use. A dedicated £10,000 budget will directly fund high-quality, structured and engaged involvement with the public via:

CARDINAL PPIE Forum

Members will include people at risk of CVD, those living with diagnosed disease, and individuals waiting for procedures. This quarterly forum ensures regular feedback loops from diverse lived experiences, as members will inform programme design, data governance, communication, and impact evaluation

Bespoke Training and Support

All members will be offered training in research governance, artificial intelligence (AI) in healthcare and NHS commissioning/health policy decision-making. This includes plain-language induction, modular research workshops and an optional shadowing of project team members