

**The National Institute for Health and Care Research (NIHR)
Manchester Biomedical Research Centre (BRC) and NIHR
Manchester Clinical Research Facility (CRF):
Inclusive Research examples**



Case Title	Supporting a BRC Pump Priming Call Application – Automated Research Notifications (ARNs) for Enhancing Time-Sensitive Clinical Trial Participant Identification and Inclusivity
BRC Cluster(s)/Themes	All clusters and their associated Themes
Other NIHR Infrastructure (Greater Manchester)	Clinical Research Facility (CRF), Health Research Determinants Collaboration (HDRC) and Healthtech Research Centre (HRC)
Inclusive Research Element	Inclusive Trial Design
Rationale for case study	This case demonstrates how the Inclusive Research Methods Team (IRMT) supported a time-critical digital innovation project (BRC Pump Priming Call Application) to embed inclusivity into both design and delivery. It also demonstrates how the IRMT can support researchers across the NIHR infrastructure to meet the funding requirement for IR set by the NIHR.
Background	<p>The BRC Pump Priming application sought to pilot Automated Research Notifications (ARNs) within Manchester University NHS Foundation Trust (MFT)'s Epic system (a cloud-based Electronic Health Records (EHRs) platform widely used across NHS Trusts). It is a comprehensive software suite designed to speed up and manage patient data and information within healthcare organisations, and make the recruitment of critically ill patients into research more inclusive. This project introduces an innovative automated system that integrates directly with hospital EHRs known as ARNs. It draws on routinely collected patient data to rapidly flag individuals who may be eligible for specific research studies. When certain criteria are met, real-time alerts are sent to research teams, minimising the risk of missing potential participants.</p> <p>The approach repurposes an existing module within Epic and inclusive clinical research. For each study, a bespoke ARN rule is developed and tested in a virtual environment before implementation in live clinical settings. By automating the identification process, ARNs have the potential to reduce selection bias and make research opportunities more equitably accessible. Epic Systems serve as a strategic industry partner in this initiative. The primary objective of the study is to determine whether ARNs enhance the speed and efficiency of research recruitment. The main outcome will be the proportion of eligible patients assessed within one hour of meeting inclusion criteria, with secondary outcomes capturing measures of inclusivity, such as the demographic and clinical characteristics of identified and enrolled participants. By comparing these results with conventional methods of recruitment, the study will assess the potential impact of ARNs on clinical trial recruitment.</p>
What we did	In autumn 2024, the NIHR declared inclusive research as a core operating principle and a condition for research funding. As such all researchers within the NIHR are mandated to explicitly address inclusivity in their studies. To support this, the NIHR recommends using a standard template of questions and response categories covering the 9 protected characteristics (as defined in the



	<p>Equality Act 2010) and socio-economic background to collect diversity data. The IRMT provides information and tools including all the NIHR resources, offering training and capacity-building, and supporting knowledge exchange activities to effectively deploy such methods in research projects for the BRC, CRF, HDRC and HRC and the wider research community. We supported the researcher by explaining the NIHR requirements for funding and sharing a paper version of the NIHR standardised questionnaire for monitoring the diversity and characteristics of patients assessed using ARNs. We also provided resources on IR training and seminars. We reviewed, commented on successive drafts of the application, weaving IR in design and delivery of the study and suggested costings for IR activities.</p>
What the outcome(s) is/are	<p>The final application aligned with the NIHR conditions for funding research, the BRC inclusive research strategy and demonstrated clear potential for multi-centre scale-up, best practice and future publication. The application was successful, and funding was secured for the study. The project is now poised to pilot its ARNs within NHS clinical settings, with built-in monitoring to ensure recruitment equity. A budget was added to the bid to cover the cost of ongoing support throughout the project from the IRM team. Monthly meeting will be held to facilitate this.</p> <p>This project has the potential to transform the delivery of clinical research, particularly in emergency and acute care settings. By accelerating recruitment, it supports the NHS ambition of embedding research into routine patient care. The system has been designed to align with national priorities on inclusivity and to maintain robust patient data privacy throughout.</p> <p>The ARN approach could be scaled across other NHS Trusts currently using Epic i.e. 13 in England to create a blueprint for national adoption. An expert, multi-stakeholder panel will also develop a strategy for wider NHS implementation. The project will generate public-facing resources to communicate its benefits more broadly.</p> <p>Ultimately, this model could enable more patients to access experimental treatments sooner, enhance the quality and inclusivity of clinical research, and strengthen the NHS's position as a global leader in research innovation.</p>
Conclusions	<p>Early engagement with IRMT strengthened the inclusivity elements (e.g. ongoing monitoring of diversity of patients) of the proposal and helped secure funding for an innovative technology-driven study. It shows the value of embedding inclusivity from the outset and throughout the lifetime of the project to enhance recruitment diversity and speed of delivery.</p>
Recommendations	<ul style="list-style-type: none"> • Continue to offer IRMT input early in grant development to strengthen IR. • Use this case story as an exemplar to encourage other researchers during cluster/theme meetings to seek IR support in their research studies. • Encourage systematic monitoring of inclusivity data in all funded studies. • This example offers a template for clearly costed long-term involvement from IRM team as a co-applicant in a BRC research project. It also shows following NIHR IR directive is feasible and successful.
Future work	<p>The IRMT will continue to offer IR support until the end of the project. Feedback from the project team on IRMT support will also be collected to evidence impact for future BRC reporting and progression. The IRMT will continue to offer support to all NIHR researchers to embed IR in their studies.</p> <p>The IRMT can be contacted using the Inclusive Research Methods Contact Form or attending one of the drop-in clinics help on TEAMs every 2nd Tuesday of the month, by emailing IROB@manchester.ac.uk or if from the BRC using your designated IRM team link.</p>