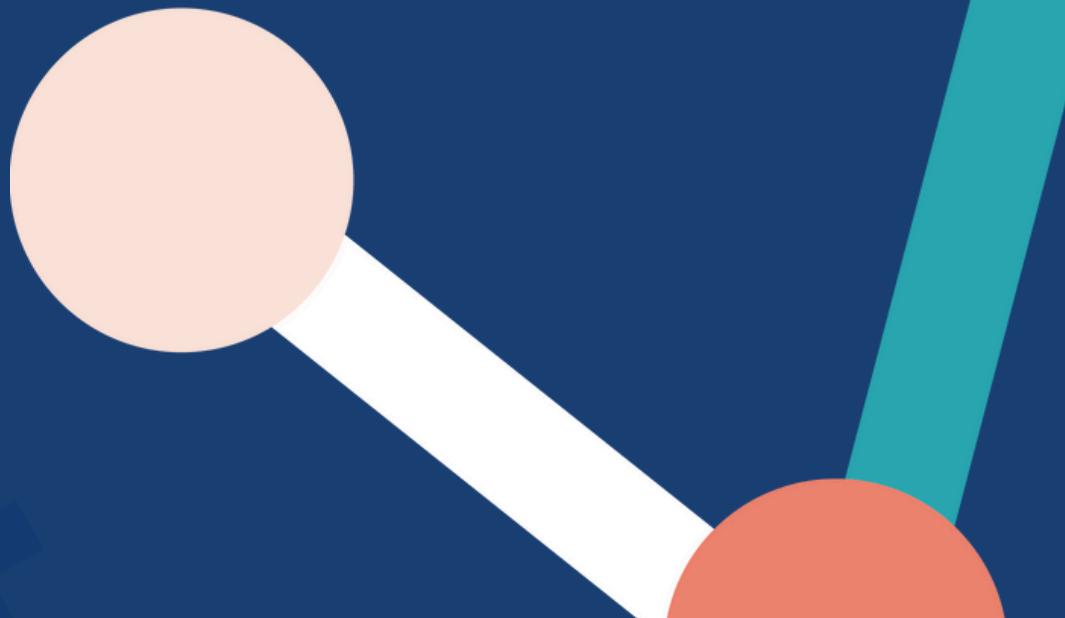




# Key achievements 2023/24

Annual Report Summary – 1 January 2023 to 31 March 2024



# Foreword

Welcome to a summary of our key achievements from the National Institute for Health and Care Research (NIHR) Manchester Biomedical Research Centre (BRC), the beating heart of translational research across Greater Manchester, Lancashire and South Cumbria.

We would like to thank **everyone** who is involved in and supports our research. Our workforce, students, healthcare professionals, research participants, industry colleagues, funders and public contributors. Your collective contributions ensure we continue to transform scientific breakthroughs into diagnostic tests and life-saving treatments for patients.

Awarded **more than £64.1 million for 2022-28**, we bring together world-leading researchers based at The University of Manchester and 6 NHS Trusts\*, with a vision to drive forward health improvements. In this summary, we look back at some of the highlights from our 2023-24 Annual Report to showcase the positive impact we made across our diverse communities. Covering activity from **1 January 2023 to 31 March 2024**, we demonstrate how we are delivering lasting change for all through creative, inclusive, and proactive research. Research that identifies and bridges gaps between new discoveries and individualised care.



## Professor Anne Barton

Director, NIHR Manchester Biomedical Research Centre

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\*Manchester University NHS Foundation Trust, Blackpool Teaching Hospitals NHS Foundation Trust, The Christie NHS Foundation Trust, Greater Manchester Mental Health NHS Foundation Trust, Lancashire Teaching Hospitals NHS Foundation Trust, Northern Care Alliance NHS Foundation Trust.



# Who we are

180

NIHR Investigators

World-class researchers



225

NIHR Associates

Multidisciplinary teams driving our research programmes and strategic areas



32

PhD Trainees

Range of clinical and non-clinical PhDs training researchers of the future



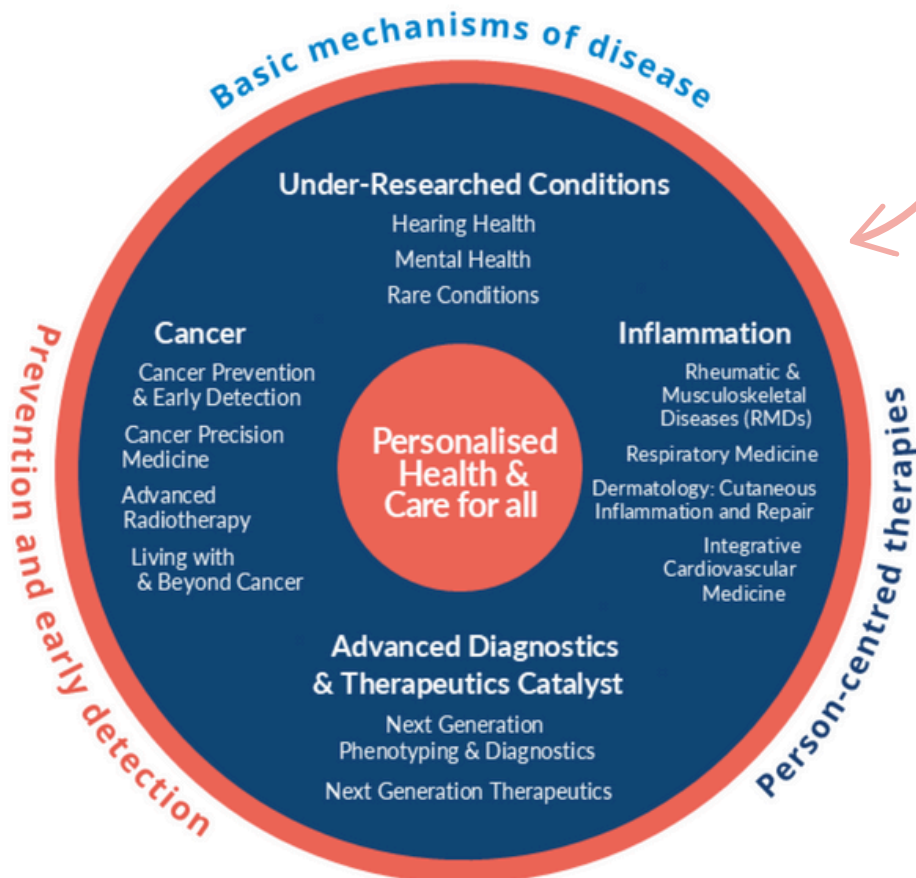
86

Rising Stars

Identified from clinical and non-clinical roles across our research Themes



Our research Themes bring together a dynamic team of internationally recognised researchers, in the areas where we believe we can have the **greatest impact on improving people's health**. Our 13 different Theme areas are grouped into 4 Clusters.





# Our progress

We made significant progress against our 3 core objectives: **Embed, Build, and Accelerate**, and towards our vision of driving personalised health and care for all.

All short-term objectives remained on track, including workforce and PhD cohort appointments, governance, communications, Patient and Public Involvement, Engagement and Participation (PPIEP), and capacity building strategies.

## Key advancements included:

- The importance of an **inclusive and diverse workforce** through the development of a joint Equality, Diversity and Inclusion (EDI) Strategy with the NIHR Manchester Clinical Research Facility. A dedicated EDI Lead and Deputy Leads were appointed.
- A focus on **children's research** with enhanced project management support and ring-fenced funding.

## Top achievements

- 1 Inclusivity:** Our Hearing Health Theme developed an Arabic-language remote hearing test, a first-in-kind tool for researchers working with Arabic-speaking participants. This achievement demonstrates Manchester's commitment to inclusivity and accessibility.
- 2 Investment in excellence:** Manchester BRC secured £90.9 million in income (December 2022 - March 2024), including 3 Medical Research Council (MRC) UK Research and Innovation (UKRI) Rare Disease Network awards worth £4 million, £2 million for the Genes and Health Study, and £2 million for the NHS Network of Excellence for Rare and Inherited Diseases. Manchester also secured Mental Health Mission funding to support child and adolescent mental health research.
- 3 Saving lives:** The Breast Screening After Radiotherapy Dataset (BARD) is a confidential database of women in England who have received radiotherapy involving breast tissue when aged between 10 and 35 years for whom there is an increased risk of developing breast cancer. It has been set up to make sure eligible patients can be informed of screening options at the right time. BARD is now being used as an exemplar for monitoring in other high-risk populations.

In 2023-24, we had:

**588**

BRC-linked publications



**21,970**

participants recruited to research projects



**111**

research projects supported by the BRC



**405**

new public partners who worked with us, through Vocal

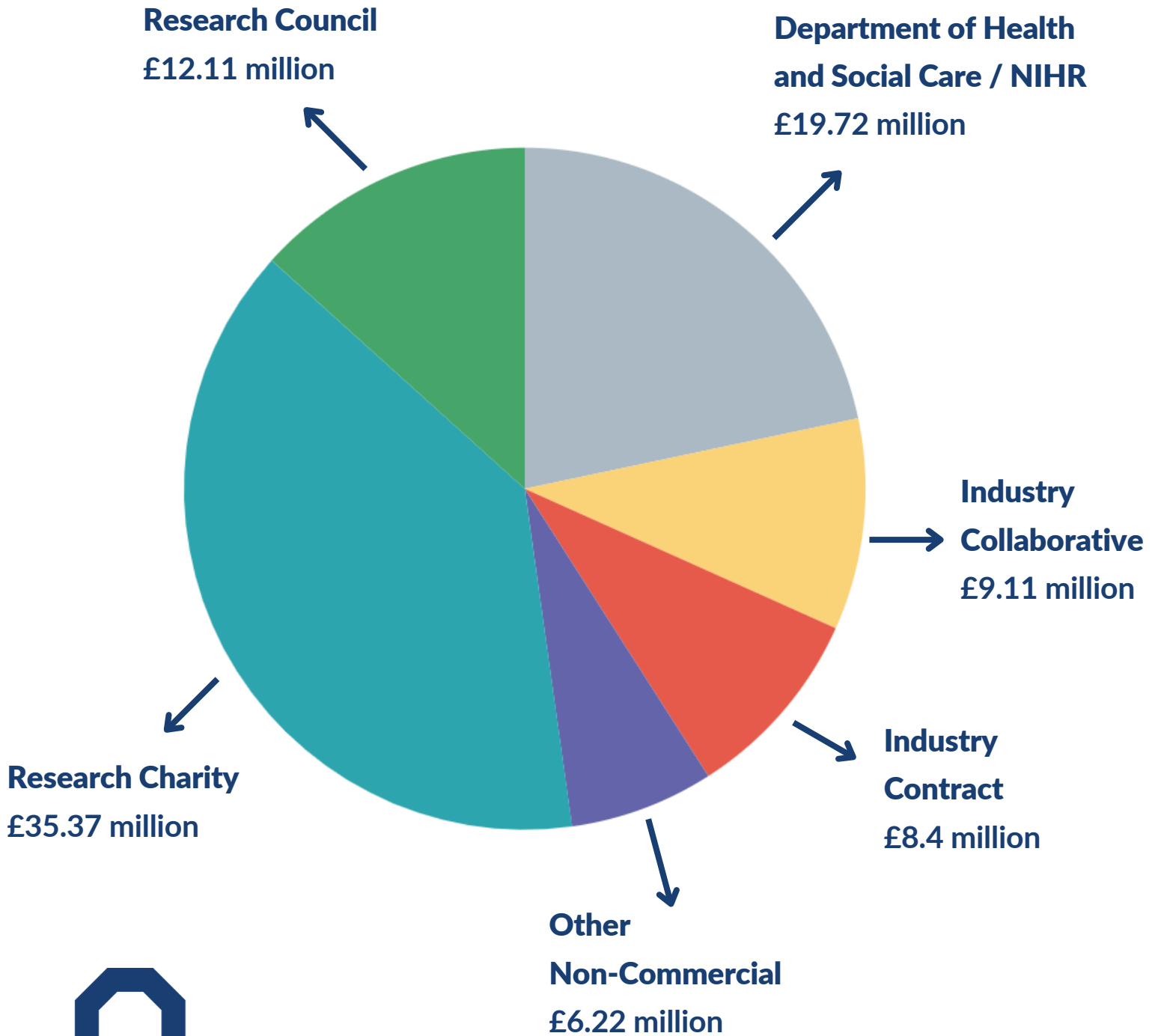




## Additional funding awards

From December 2022 to March 2024, Manchester BRC leveraged **£90.9 million** in external income.

This figure is a reflection of the quality and breadth of research expertise, a key marker of our success and a metric that we can measure and build on each year.





# Collaborative working

At Manchester BRC, collaboration is at the heart of everything we do.

We work closely across NIHR, industry, charities, and public funders to drive impactful research and foster partnerships that enhance translational research and improve patient outcomes.



## NIHR infrastructure collaboration

We worked hand in hand with [NIHR infrastructure partners](#) to strengthen research capabilities and drive innovation. Our Leadership Team shared key roles across the network which included NIHR Clinical Research Network (now NIHR Research Delivery Network), NIHR Applied Research Collaboration Greater Manchester (ARC-GM), NIHR Patient Safety Research Collaboration (PSRC) and Manchester Academic Health Science Centre (MAHSC).

Our collaboration with the [NIHR Manchester Clinical Research Facility](#) (CRF) enabled joint funding of core posts, enhancing capacity in public engagement, industry partnerships, data management and communications. We contributed to national and regional research networks to expand our impact. More than 42% of our studies were supported by the NIHR Clinical Research Network (CRN), and we utilised innovative resources such as the GM-CRN research van to engage diverse populations, including healthy volunteers for [NIHR BioResource](#) studies.



Through the **Northern BRC Network**, we collaborated on pioneering projects such as Pulmonary Magnetic Resonance Imaging for Cystic Fibrosis (Sheffield) and research on Ageing, Sarcopenia, and Multimorbidity (Newcastle).

Our strong relationship with [MAHSC](#) ensured a seamless translational pathway from research to clinical application.

We continued to collaborate with **charities** including Cancer Research UK (CRUK), British Heart Foundation, and Versus Arthritis. CRUK's investment in RadNet and Manchester Centre projects accelerates advancements in radiotherapy and drug development.

## Industry engagement

We prioritised **co-development with industry**, working with partners such as [Novartis](#), [Roche](#), [GSK](#), and [Janssen](#). Our iMATCH programme enhanced access to advanced therapies, while the TARGET National and DETERMINE trials leveraged industry support to expand precision medicine. The [Manchester Rare Conditions Centre](#) played a key role in fostering partnerships with industry and rare disease networks, ensuring innovative therapies reached patients sooner.





# Equality, Diversity and Inclusion

We remain committed to creating an inclusive research environment that reflects societal diversity and promotes equitable career pathways.

To achieve this goal, we published a joint [Equality, Diversity and Inclusion strategy](#) with the NIHR Manchester Clinical Research Facility. This provided a clear roadmap for embedding effective Equality, Diversity and Inclusion (EDI) practices across our research communities to support our workforce and students.



In February 2024, we appointed an **EDI Leadership Team** to drive implementation of key strategic objectives and track progress against EDI key performance indicators. We also targeted funding calls for under-represented groups in research, including nurses and allied health professionals.

## Our future activity will include:

- Next rising stars cohort to focus on under-represented groups to ensure an inclusive workplace.
- Implementing EDI training sessions for staff and students.
- Setting up staff networks to support under-represented groups.
- Expanding Training Needs Analysis to incorporate EDI questions for a better understanding of workforce needs to promote diverse, inclusive and equitable workplace culture.
- Conducting a workforce diversity survey across the BRC to gain insights into the diversity within teams, Themes and leadership positions.



To inspire evidence-led Equality, Diversity and Inclusion (EDI) practice, supporting a diverse and inclusive workforce to drive improvements in health and care for all.



# Patient and Public Involvement and Engagement (PPIE)

The Vocal logo features the word "VOCAL" in a bold, sans-serif font. The letters "V", "O", and "C" are orange, while "A", "L", and "A" are red. The logo is positioned in the upper right quadrant of the page, partially overlapping a decorative graphic of red and blue curved segments.

## Working together

Our 5-year joint Manchester BRC and Manchester CRF [PPIEP Strategy](#) was co-developed with [Vocal](#), based on 4 values: **Working Together, Everyone Matters, Innovating, and Driving Excellence**. Collaborators included the [Black, Asian and Minority Ethnic Research Advisory Group \(BRAG\)](#), 60 public/community partners, 11 young people (Voice Up), and 35 researchers.

## Governance

In line with Manchester's actions for change resulting from piloting [NIHR's Race Equality Framework \(2021-2022\)](#), public partners with experience of racial inequalities are now included across our Governance structures.

## Impact



PPIE Specialists engaged people with diverse lived experience through [Research Advisory Groups/Networks](#). They worked across our research Clusters with PPIE Leads to prioritise PPIE activities. Understanding the impact of PPIE is key to our work, (see [Vocal's evaluation strategy](#)).

Across our Clusters, we focused on under-served populations and inclusive opportunities, which included:

- **Inflammation Cluster:** Two new patient advisory groups were established (Cardiovascular, Cardio-Rheumatology). Advice from public contributors resulted in changes to the recruitment materials.
- **Under-Researched Conditions Cluster:** A new Vocal Rare Conditions Network (34 members) was established. In Hearing Health, public partners influenced the protocols of a study on hearing loss caused by Type 2 diabetes and highlighted the need for adaptive diabetes devices for darker skin tones.
- **Cancer Cluster:** The Get Vocal on Cancer Network now has 215 members. A new Community Cancer Insight Group has been established in Gorton to guide inclusive practices.

Researchers reported increased motivation following PPIE activities, with public partners highlighting meaningful contributions and impactful changes.



## Reaching under-served populations

405 new public partners worked with Vocal from December 2022 to March 2024 (diversity data below; comparable to GM Census data 2021).

### Of new partners:

- 65%: White British, 15%: Asian, 6.5%: Black (African or Caribbean heritage).
- 39% identify as disabled.
- 81.2%: Heterosexual, 6%: Bisexual, 9%: Gay or Lesbian.
- 37%: working, 11%: unable to work, 3%: unemployed.



BRAG won Community Initiative of the Year (BAME Health & Care Awards 2023) and continues to exert strategic influence through Manchester BRC's Governance structure membership and by advising on inclusive approaches.

**34**

**members**

New Vocal Rare  
Conditions Network



**215**

**members**

Get Vocal on  
Cancer Network



**2**

**new patient advisory  
groups established**

Cardiovascular and  
Cardio-Rheumatology



# Academic career development

Building experimental medicine capacity across our NHS Trust partnership continued to be a priority and significant progress was made against our key workstreams in our capacity building (CB) strategy.

In 2023-2024, 32 PhD students were recruited through a competitive recruitment process. We introduced a bespoke induction to standardise training and recruitment, ensuring students felt part of the BRC. Our PhD Buddy Scheme has encouraged peer to peer support and collaboration.



We advertised our Clinical Research Investment Scheme (CRIS) which offered healthcare professionals the chance to unlock protected research time and access vital project funding. The overall ambition of the CRIS is to invest in and increase the capacity of healthcare professionals with research experience focusing on experimental medicine and early-phase translational research.

Working with NIHR, we recruited 2 researchers to the **Associate Principal Investigator (PI) scheme** for respiratory studies, with plans to expand across more areas. The Associate PI scheme is a 6-month in-work training opportunity, providing practical experience for health and care professionals starting their research career.

A **Training Needs Analysis** identified gaps in training, which shaped our Training Event and Seminar Series. In 2023-2024, 15 sessions were held covering topics such as Inclusive Research and epidemiology.

A total of **86 rising stars** from diverse clinical and non-clinical roles participated in coaching sessions, with plans for bespoke leadership training. Around £1.8 million in funding was awarded to Early Career Researchers and NIHR Academy members.



To address the shortage of Clinical Research PIs at Blackpool Teaching Hospitals NHS Foundation Trust, a **clinical PhD scheme** was implemented, with 2 proposals planned for 2024-2025. Our CB Academic Career Development Lead co-chaired 3 NIHR GM Research Training Network Steering Group Meetings, promoting collaboration and sharing best practice.

With Health Innovation Manchester, we contributed to the development of the **Research Opportunities Support Office**, to streamline career development and training across Greater Manchester. Our Education and Training Manager joined the **Equality, Diversity and Inclusion (EDI) Group**, to ensure integration of EDI principles into training.

**We continued to actively promote a positive and inclusive culture:**

- Appointed leads across 13 research Themes and partner organisations to further embed CB.
- Collected EDI data from training events to improve offerings for under-represented groups.
- Used accessible communication methods and language for advertising vacancies and funding opportunities.
- Selected diverse panel members for application reviews and recruitment processes.

**15**

**sessions**

Delivered as part of  
our Training Event  
and Seminar Series



**2**

**researchers**

Recruited to NIHR  
Associate Principal  
Investigator Scheme  
for respiratory  
studies



**£1.8  
million**

Funding awarded  
to Early Career  
Researchers and  
NIHR Academy  
members





# Working with industry

The Innovation and Partnerships team, co-led by NIHR Manchester BRC and NIHR Manchester CRF, developed a strategy centred around 3 pillars to enhance industry collaboration and commercial opportunities:

## 1 Embed industry for co-development and collective impact:

- Delivered the [MedTech and IVD Innovation Lab \(May 2023\)](#) in collaboration with Translation Manchester and Manchester University NHS Foundation Trust's Diagnostics and Technology Accelerator (now [NIHR HealthTech Research Centre \(HRC\) in Emergency and Acute Care](#)), pairing small and medium enterprises (SMEs) with researchers for co-development projects.
- Supported 3 industry co-funded projects through the **BRC Innovation and Partnerships Pump-Prime Funding Call** (Elekta, HealthConnect, Pharmanovia).
- Held **2 town hall sessions** on HPV diagnostics and pan-cancer panels with our strategic partner QIAGEN, fostering partnerships in diagnostics innovation.



## 2 Build an entrepreneurial workforce:

- Re-launched the **Innovator Training Scheme**, transitioning to e-learning modules hosted on The University of Manchester's [Lifelong Learning platform](#) and delivered in-person workshops (e.g., [Essentials for Innovation](#) in January 2024).
- Next steps to partner with HRC in Emergency and Acute Care and others to provide specialised regulatory and commercial guidance.

## 3 Commercialise:

- Developed and implemented a new Manchester BRC **Intellectual Property (IP) policy**, with IP audits and impact tracking projects underway.
- Established an IP and Commercialisation group to streamline processes and facilitate industry engagement.



## Impact through long-term partnerships

- **Bellus Health:** Supported early-phase trials for camlipixant in refractory chronic cough, leading to a [£1.6 billion acquisition by GSK](#).
- **Orchard Therapeutics:** Delivered the UK's first gene therapy trial for MPSIIIA, now leading a Phase III trial and [approved clinical delivery for metachromatic leukodystrophy](#).
- **Varian:** Longstanding collaboration on advanced radiotherapy, including proton beam therapy research and the [FLASH Forward Consortium](#).

## PPIE advice to industry partners



- Collaborated with Galen Research, AbbVie, and Mitsubishi Tanabe on co-developing patient-centric tools and study designs.
- Provided input to in vitro diagnostics and MedTech partners (e.g., DEVOTE, PROGRESS) to improve test designs and service uptake.

We formed

**201**

strategic  
industry partnerships



We worked with

**130**

international  
companies



We worked with

**109**

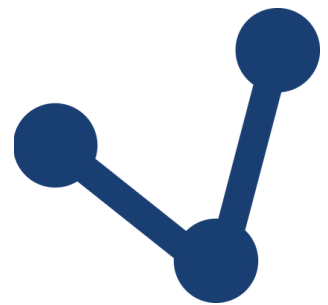
small and medium-sized  
enterprises



We collaborated on

**93**

projects with  
charities and public  
funders



# Impact case study

## Developing a new blood test to identify cancer of unknown primary

Cancer of unknown primary (CUP) is where cancer has been found in the body (secondary cancer), but current standard tests can't identify where the cancer started (primary cancer).

CUP is the 6th leading cause of cancer death in the UK and patients from the country's most deprived regions are more affected.

Treatment options for patients with CUP are limited because without knowing where the primary tumour is, we can't use treatments that target a specific cancer type, which are more likely to work.



Researchers from Manchester BRC's [Cancer Precision Medicine Theme](#) developed a new blood test that can accurately predict where the primary tumour is in patients with CUP.

The CUPiD blood test can identify DNA which has been released from tumour cells into the bloodstream and analyse this to find out which type of cancer the DNA came from.

For around 9,000 cases of CUP diagnosed in the UK each year, this could **speed up diagnosis and enable better treatment options**.

This may result in improved disease management and patient outcomes, and reducing the psychological challenges experienced by patients going through a diagnosis.

Repeated biopsies (removing a piece of tumour for testing) also wouldn't be needed, which can be invasive, so improves patient safety.

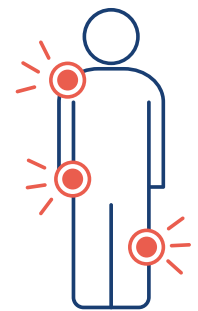




# Impact case study

## Developing the first international cancer screening guideline for a rare muscle disease

Idiopathic Inflammatory Myopathy (IIM) is a rare autoimmune condition that causes inflammation and affects muscles, skin and lungs. It causes significant disability and affects approximately 10,000 people in the UK.



Although IIM is treatable, there is no cure, and cancer is the leading cause of death. Current evidence shows up to 25% of patients will develop cancer within 3 years of disease onset.

Building on research from Manchester BRC's [Rheumatic and Musculoskeletal Diseases Theme](#), the first international cancer screening guideline was developed for clinical practice. Studies had shown 83% of IIM-associated cancers were in later stages when diagnosed. Detecting cancer early is a priority for improving patient outcomes and survival.



The guideline groups patients into risk categories based on their disease type and clinical features. Patients can then be screened with a chest X-ray or CT scan. The timing and frequency of the screening tests are guided by the risk category which helps clinicians to plan appropriately.

The guideline was developed by an international expert group, which included Manchester BRC researchers from across different Themes and Clusters.

This guideline could **help save lives through earlier** cancer diagnosis and avoid expensive tests where these are not needed, resulting in healthcare savings to the NHS.



# Impact case study

## Rapid genetic testing to improve outcomes for stroke patients

Around 100,000 people in the UK, including 6,000 in Greater Manchester, experience a stroke each year. This life-threatening condition is caused by a blood clot cutting off blood to the brain and those affected are at increased risk of further strokes and heart attacks in the following days and weeks.

Clopidogrel prevents blood clots, but changes in the CYP2C19 gene, the gene responsible for metabolising many commonly prescribed medicines, reduce its effectiveness in 29% of UK patients (up to 60% in some ethnic groups). These individuals are twice as likely to have further strokes.



Building on work by our [Next Generation Phenotyping and Diagnostics Theme](#), a rapid point of care genetic test was developed in collaboration with [genedrive](#).



Using a simple cheek swab, this non-invasive test can be performed at the bedside. From the swab, the [Genedrive system](#) interprets the genetic information and provides options on the course of treatment within one hour.

Previously, genetic testing for CYP2C19 could only be carried out using specialist laboratories. Detecting these genetic changes before treatment allows doctors to **prescribe more effective alternatives**.

Further evaluation will be undertaken at [Greater Manchester's Hyper Acute Stroke Unit \(HASU\)](#) at Northern Care Alliance NHS Foundation Trust, a partner Trust of Manchester BRC.

**Dr Gino Miele, Chief Scientific Officer, genedrive plc, said:** "The collaboration of our company with the research and clinical team is a shining example of the NHS collaborating with a commercial company, from early product development through to clinical validation in real-world settings, to deliver real improvements in patient outcomes in a cost-effective way."



# Impact case study

## Increasing research capacity and capability in Blackpool and Lancashire to improve patient outcomes

In Blackpool and other parts of Lancashire, there are areas with high levels of social deprivation, with reduced life expectancy and where people experience coexisting conditions including cancer, mental health problems, cardiovascular and respiratory disease.

Research that is designed and conducted to meet health needs of these under-served communities and which addresses barriers to inclusion is key to reducing health inequalities.



Two NHS Trusts in these areas – **Blackpool Teaching Hospitals NHS Foundation Trust (BTH)** and **Lancashire Teaching Hospitals NHS Foundation Trust (LTHTr)** – joined Manchester BRC as partner organisations in December 2022.

This has enabled residents to **access research opportunities, enhanced research networks, promoted new collaborations for patient benefit and provided capacity building opportunities** for clinicians to become research-active.

At BTH, NIHR portfolio clinical trial participants grew to around 2,500 a year, including one world-first and multiple UK-firsts to recruit. A clinical PhD programme has started, and 5 healthcare professionals were funded to deliver experimental medicine studies.

At LTHTr, students and doctors have been involved in Manchester BRC projects and 4 surgical research fellows are undertaking higher degrees. This included work to improve clinical and patient holistic decision-making for pre-invasive anal cancer, an under-represented patient group.



# Impact case study



## Bringing people and cancer researchers together to talk about cancer, prevention and research

Greater Manchester historically has poor cancer outcomes, death rates are around 10% higher than the UK average. Contributing factors include higher levels of obesity, smoking, and socio-economic challenges, as well as lower uptake of national cancer screening programmes compared to other areas.



Talking about cancer isn't always easy. That's why it's so important to engage with communities in ways that are welcoming and inclusive. This approach helps to ensure that people shape our cancer research.

Vocal, in partnership with Manchester BRC and Manchester CRF, Healthy Me, Healthy Communities, the LGBT Foundation and people affected by cancer, co-created **Cancer & Us: Community Conversations**.

### Cancer & Us took a unique and inclusive approach by:

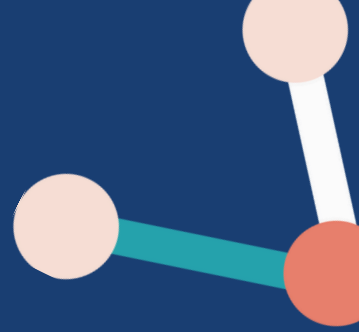
- Bringing local communities and researchers together to talk about cancer, prevention and research.
- Building fair and collaborative relationships between Manchester BRC, Manchester CRF, and community partners.
- Raising awareness of research, and having a say in research, amongst minoritised communities.

### The programme delivered:

- "Cook & Chat" workshops and engagement focusing on cancer and research.
- Research laboratory visits for patients and carers.
- Programme of Creative workshops exploring Cancer and Data.
- 11 co-produced videos and a Zine.
- A social media campaign raising awareness of cancer research and promoting public involvement in cancer research.



Across the programme **111 people** engaged through face-to-face activities and events. Of the 62% of participants who shared their demographic information, more than 30% were of Asian, African, Caribbean or Arab heritage. There was a broad range of ages from 25 to over 75 years old.



For the latest news, events and opportunities, please follow us or visit:



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