NIHR | Manchester Biomedical Research Centre

Key achievements 2024/25

Annual Report Summary – 1 April 2024 to 31 March 2025

Foreword

I am delighted to introduce a summary of key achievements from the National Institute for Health and Care Research (NIHR) Manchester Biomedical Research Centre (BRC), covering our activity from 1 April 2024 to 31 March 2025.

Reflecting on the year, we have made excellent progress in our vision to drive personalised health and care for all.

From improving patient diagnostics and shaping clinical practice, to investing in people in a diverse and inclusive research environment, Manchester BRC continues to bridge gaps between new discoveries and individualised care.

Thank you to everyone who is involved in and supports our efforts to drive forward health improvements and reduce health inequalities for people across Greater Manchester, Lancashire, South Cumbria and beyond.

Our workforce, students, healthcare professionals, research participants, industry colleagues, funders and public contributors are working together to create lasting change for all.

Professor Anne Barton

Director, NIHR Manchester Biomedical Research Centre

Awarded more than £64.1 million for 2022-28, Manchester BRC brings together world-leading researchers based at The University of Manchester and 6 NHS Trusts: 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 and Northern Care Alliance NHS Foundation Trust.

Who we are

191

NIHR Investigators

World-class researchers

285

NIHR Associates

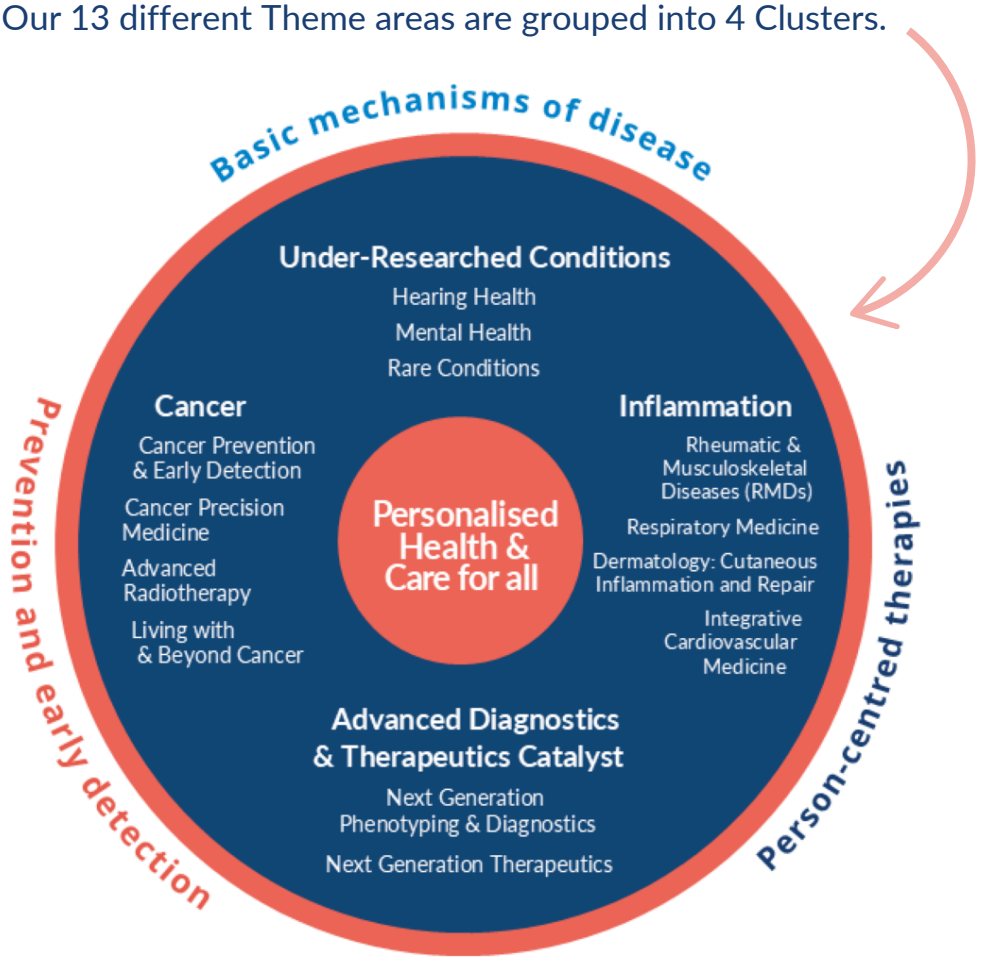
Multidisciplinary team to support our research

62

PhD Trainees

The next generation of researchers

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 have made advances across innovation, investment, and clinical impact.
Our 3 top achievements are:

1 Innovation – Near-patient diagnostics

Within the Cancer Prevention and Early Detection Theme, Manchester BRC has pioneered a **groundbreaking urine-based test for human papillomavirus (HPV)**, the primary cause of cervical cancer. This test is not only cost-effective and 6 times less carbon-intensive than traditional testing methods, but also significantly more acceptable to minoritised groups, including LGBTQ+ and ethnically diverse populations, due to its home-based design.

Within the Rare Conditions Theme, Manchester BRC collaborated with pharmacogenetic testing company genedrive to develop a **rapid, point-of-care genetic test for changes in a specific gene**. This test, now being used in stroke centres nationwide, supports National Institute for Health and Care Excellence (NICE)-recommended personalised prescribing of the current first-line treatment to prevent recurrence.

2 Investment in People – Building future innovators

Manchester BRC has fostered a **diverse and inclusive research environment**, supporting individuals at every career stage. This includes:

- 20 placements for healthcare professionals
- 25 new PhD studentships (April 2024 to March 2025)
- 6 additional consultants now have protected research time through the Clinical Research Investment Scheme.

20 clinical academics have secured prestigious external fellowships, while staff benefit from tailored training, leadership development, and active involvement in Equality, Diversity and Inclusion (EDI) initiatives, Patient and Public Involvement and Engagement (PPIE) activities, and support via our newly established neurodivergent working group.

3 Impact – Shaping clinical practice

Manchester BRC research has **directly influenced national and global clinical guidelines**, including asthma management, the monitoring of the use of biologic therapies in inflammatory arthritis, and candidiasis treatment.

Experimental medicine studies have enabled **drug repurposing** for myositis (the name for a group of rare conditions that cause weak muscles) and idiopathic pulmonary fibrosis (a condition where lungs become scarred and breathing becomes difficult) related cough. A NIHR Manchester Clinical Research Facility study led by Manchester BRC Rheumatic and Musculoskeletal Diseases Theme investigator, Professor Ben Parker recruited the first person in the UK to a CAR-T trial for severe lupus.

In 2024-25, we had:

490
BRC-linked publications

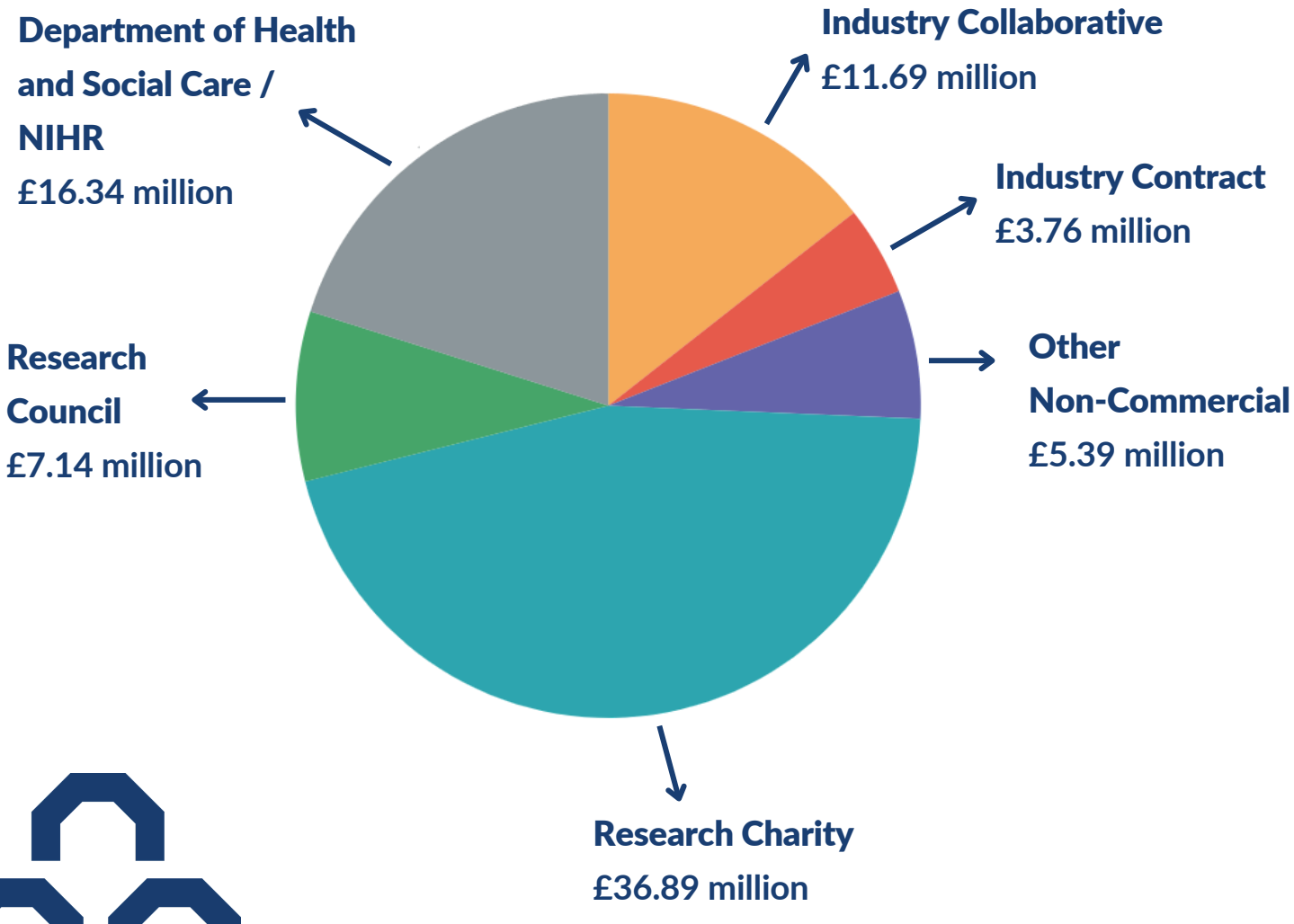
35,813
participants recruited to research projects

470
overall active projects, including 71 children's research projects

308
new public partners who worked with us, through Vocal

Additional funding awards

From April 2024 to March 2025, Manchester BRC leveraged **£81.2 million** in external income. This figure is a reflection of the quality and breadth of research expertise, a key marker of our success and ensures we can successfully deliver on our work programmes.



Collaborative working

Manchester BRC exemplifies the "One NIHR" vision through strategic collaboration across other parts of the NIHR, academic institutions, NHS Trusts, and public funders. Manchester BRC researchers also co-lead national initiatives in areas including dementia, musculoskeletal health and patient safety.

Manchester hosts **2 NIHR Translational Research Collaborations (TRCs)** in Respiratory and Musculoskeletal Health, contributes to all 6 national TRCs, and supports the newly launched Surgical and Perioperative Care TRC. Manchester BRC is also a member of the Diet and Activity Research Translation (DART) collaboration, bridging cancer, mental health, and rheumatic disease research.

Joint working with **NIHR Manchester Clinical Research Facility** has delivered 72 Manchester BRC studies — including advanced radiotherapy, rare disease trials, and osteoarthritis innovation.

With the **NIHR Applied Research Collaboration Greater Manchester**, Manchester BRC co-leads influential research such as PALOH and PROGRESS, and high-impact public engagement campaigns like Cancer & Us. We also work closely with the **Northern BRCs** in Leeds, Newcastle and Sheffield through joint events and doctoral training collaborations.

Nationally, Manchester BRC collaborates across the NIHR network contributing to rare disease networks, polygenic risk score initiatives, and the **NIHR BioResource**. The NIHR BioResource is actively supported by our partner NHS Trusts including Blackpool Teaching Hospitals NHS Foundation Trust and Lancashire Teaching Hospitals NHS Foundation Trust. Manchester BRC co-leads the Immune Mediated Inflammatory Diseases BioResource and supports the NIHR Health Informatics Collaborative and Imaging Network.

Charities and funders

Manchester BRC had **299 strategic partnerships** with charities and funders. Strategic collaboration has driven major funding successes which included:

- £5.87m from Cancer Research UK for RadNet Manchester 2.0
- £3m Versus Arthritis Consortium Grant
- £2.9m Alzheimer's Society Doctoral Training Centre
- £1.8m GMC Life Sciences Fund for digital mental health
- $2.7m US Department of Defense for neurofibromatosis
- £30m from The Christie Charity
- £5.2m Biotechnology and Biological Sciences Research Council/Boots for skin research
- £4m British Heart Foundation Centre of Research Excellence

Together, we are advancing translational research that reduces inequalities and improves health across the UK.

Equality, Diversity and Inclusion (EDI)

We progressed the delivery of the joint NIHR Manchester BRC and NIHR Manchester Clinical Research Facility EDI Strategy. This strategy provides a clear roadmap for embedding effective EDI practices across our research communities to support our workforce and students.

Our activity has included:

- Ensuring EDI is a standing item across Manchester BRC Governance and Theme meetings.
- Establishing a Manchester BRC Operations Committee, bringing together EDI, Patient and Public Involvement and Engagement (PPIE) and Inclusive Research Methods to drive research inclusion.
- Carrying out a Manchester BRC and Manchester CRF workforce diversity survey to shape future strategy. This was co-developed with Theme EDI Leads and core Manchester BRC and Manchester CRF staff.
  - A pilot survey on Manchester BRC Governance structures received a 94% response rate, demonstrating leadership commitment.
- Developing Manchester BRC and Manchester CRF EDI toolkits, for example EDI objectives for annual appraisals.

We have delivered inclusive and accessible communications and training, such as:

- An annual accessibility review of the Manchester BRC website.
- Provision of subtitles and transcripts with video and audio communications, such as the International Women's Day podcast to raise visibility of talented women from diverse backgrounds.
- Online and face to face training captured diversity of attendees with feedback to tailor future events.
- EDI embedded in Manchester BRC funding calls and awards, with EDI-trained reviewer panels, EDI monitoring questions and applicants required to explain inclusive research plans.
- We established a Manchester BRC-led neurodiversity working group, chaired by a member of the EDI/BRC Core Team with lived experience. This has had a positive impact on members from Manchester BRC partner organisations.

Patient and Public Involvement and Engagement (PPIE)

VOCAL

Engaging and involving under-served communities

The Greater Manchester (GM) Research Engagement Network (co-led by Vocal, the Caribbean African Health Network (CAHN), NIHR Applied Research Collaboration Greater Manchester (ARC-GM) and the Greater Manchester Integrated Care Partnership) focused on engaging under-served communities in research. A new Respectful Research Charter and training was co-produced to support equitable research and community partnerships.

Working with our Black & Asian Research Advisory Group we co-produced guidance on inclusive communication and the Let's Talk Labs campaign which highlighted questions about research from people in under-served communities.

Inclusive opportunities

Across Manchester BRC, we work inclusively with public contributors including;

- **Under-Researched Conditions Cluster:** Co-designing sessions with young people with Neurofibromatosis type 1 (NF1) who often experience learning difficulties. Patients with rare conditions who frequently report "feeling forgotten" by wider society are now shaping research priorities.
- **Cancer Cluster:** The Community Cancer Insight Group is informing a wide range of research projects. Men with learning disabilities are co-designing approaches to national prostate cancer screening.
- **Inflammation Cluster:** The All About Alopecia event (co-designed with patients and Alopecia UK) provided a sensitive and inclusive space for patients to discover more about research opportunities.

308 new public partners joined Vocal from April 2024 to March 2025; diversity data below (comparable to GM Census data 2021):

- 64% White British, 14% Asian, 8% Black (African or Caribbean heritage)
- 40% identify as disabled.
- 87% Heterosexual, 3% Bisexual, 5% Gay or Lesbian.

Public partners in governance

On advice from public partners in governance roles, we are developing more accessible communications about research for general audiences, such as case studies about how our research Themes are addressing health inequalities.

Collaborating with stakeholders

New relationships have been established with community-based groups including Tameside Pulmonary Fibrosis Support Group (Respiratory), the Dementia Research Action Group (Hearing Health) and Cancer Care Diaspora (Cancer Cluster). In Blackpool, new relationships have been established with schools in areas of multiple deprivation.

Academic career development

We made significant progress in capacity building (CB), supporting a diverse research workforce through multiple schemes and targeted training initiatives.

PhD training and cohorts

Sixty-two PhD students (17 clinical, 45 non-clinical) were recruited across 2 cohorts, with 7 core-funded and others embedded across Manchester BRC Themes. Three students are supported by external partners.

Tailored training (e.g. Team Research, EDI, PPIE), a buddy scheme, a **PhD showcase**, and a **blog and video series** have enhanced collaboration and visibility within Manchester BRC and other Northern BRCs.

Professional development

The **Clinical Research Investment Scheme** (CRIS) supported 6 consultants in 2024, with cohort 2 recruitment underway.

The **Healthcare Professional Placement Scheme** recruited 12 candidates, with the next round planned for 2026. A 2025 Showcase Event highlighted Nurse, Midwife and Allied Health Professional (NMAHP)-led research.

Manchester BRC secured NIHR **Pre-Application Support Fund** backing, enabling 8 professionals to prepare for NIHR fellowship applications. The scheme will continue in 2025/2026.

Training and seminars

The **Training Event and Seminar Series** shaped by a 2024 Training Needs Analysis survey, delivered virtual and in-person sessions with positive feedback. For example, 80% of attendees were highly satisfied at the Advanced Radiotherapy Showcase and there was strong praise for the UK Biobank event's networking and foundational content.

A training matrix and passport are being developed to define core skills for experimental medicine. Formal University of Manchester programmes and tailored placements continue to build digital and healthtech skills.

Widening access and EDI

Manchester BRC prioritises inclusion through **EDI-focused training, workshops, and data collection**. Opportunities have been extended to NMAHPs who now sit on panels and lead CB activities. Targeted support includes CRIS grant-writing sessions and mentorship for underrepresented applicants. An Equality Impact Assessment case study showcases this approach.

Collaboration and impact

Collaborations with **Northern BRCs, University of Lancashire, and NIHR networks** continue to grow, with jointly funded PhDs and cross-BRC training. Manchester BRC has expanded regional research capacity and attracted additional PhD funding. Ongoing engagement, feedback, and inclusive recruitment practices aim to ensure diverse career progression and a thriving, equitable research culture.

6
consultants
Supported by Clinical Research Investment Scheme (CRIS)

12
candidates
Recruited to Healthcare Professional Placement Scheme

8
professionals
Secured NIHR Pre-Application Support Fund backing

Working with industry

We prioritise collaborative working with industry, as demonstrated by the wide variety of projects we deliver that involve industry partners. In 2024/25, we have worked with 237 partners across the pharma, biotech, MedTech, in vitro diagnostics and digital sectors to aid in evaluation and co-development of novel treatments and technologies.

How we are working with a broad range of industry partners

Event: Greater Manchester Inflammation Research Industry Showcase

Our Inflammation Cluster, NIHR Manchester CRF and NIHR North West Regional Research Delivery Network, collaborated on an event bringing together industry, clinicians, academics and patients to help foster and drive innovation in inflammation-related research, providing a vital platform to connect our BRC research with industry stakeholders.

With **120 attendees**, the event enabled private industry-researcher meetings and discussions initiated with Immunocore, Inspiritus Health, Smerud Medical Research, Srotas Health and Johnson & Johnson, UKRI Innovate UK, Brainfeed, and MAC.

Early diagnosis of acute coronary syndromes project

We are working closely with commercial leaders to drive innovation in early diagnosis of acute coronary syndromes (ACS) with point-of-care testing, funded investigator-initiated and industry-sponsored studies (Siemens Healthineers, Abbott Point of Care, Roche Diagnostics). Our partnership with Roche Diagnostics has extended to educational activities to support translation of scientific discoveries into new tests, treatments and technologies, including a published podcast (Cardio Insights by Roche, Spotify), and the co-development of a questionnaire to evaluate satisfaction of commercially developed point-of-care tests.

Building on this, we're also delivering **the UK-first real-world evaluations of point-of-care troponin testing** with the North West Ambulance Service, in partnership with Siemens Healthineers, Mindfield and By Gamers for Gamers, bridging the gap to sustainable adoption into a healthcare setting.

Developing and investigating commercial Digital and MedTech interventions in Mental Health conditions

Our Mental Health Theme are collaborating with technology industry giants YouTube and Google, leading the development of an online lifestyle course for young people with mental illness for YouTube Health, and to understand how wearable devices (Google Fitbit) could be integrated.

The Early Intervention in Psychosis teams are working with 23 Ltd to evaluate their Smoke Free app (which is the primary digital stop smoking tool used across GM) in the mental health setting.

Through work with bioelectronic company Neuropix, we are testing acceptability and effectiveness of auricular fiber Vagus Nerve Stimulation (afVNS) technology in autistic children and young people.

If successful, this collaboration **could** see the first ever application of this new wearable technology in children and young people worldwide, building on its early success with adults.

We worked with

237

industry partners

including:

159

international companies

127

small and medium-sized enterprises

Impact case study

NICE utilise study data in improved joint national guideline for the diagnosis of asthma

NIHR Manchester BRC research will impact every new asthma diagnosis made in the UK and beyond. This means more people will be getting the right diagnosis, and fewer people will be taking the wrong treatment for their symptoms.

Asthma affects up to 7 million people in the UK, with 200,000 people diagnosed with the disease each year. Around 1 in 3 of these people may not have asthma which could lead to inappropriate and ineffective treatment. This is likely due to poor evidence that underpins diagnostic guidelines, and lack of access to tests in primary care.

Respiratory Medicine Theme researchers set up the Rapid Access Diagnostics in Asthma (RADicA) study, delivered at the NIHR Manchester CRF, which aims to develop new and better breathing tests to diagnose asthma.

Since 2017, we have recruited more than 400 adults and children with suspected asthma. The results of the RADicA study show that current guidelines perform poorly, misdiagnosing asthma in at least 1 in 6 people.

We gave the National Institute for Health and Care Excellence (NICE) direct access to study data. This allowed them to produce new UK-wide joint guidance for the diagnosis and management of chronic asthma in adults, young people and children.

The data helped make the NICE pathway efficient (using tests which give the most unique information), clinically effective and cost effective.

The new guideline, underpinned by RADicA data, **will impact every new diagnosis made in the UK and beyond. It will result in more people getting the correct diagnosis, and fewer people taking the wrong treatment.**

We are exploring working with the NIHR Applied Research Collaboration-Greater Manchester to develop a project to measure and improve uptake of the new guidance and assess associated outcomes.

Impact case study

Transforming the care and outcomes for people with inherited eye diseases

NIHR Manchester BRC research has improved diagnosis, changed service delivery nationally and internationally and is at the forefront of developing and delivering gene-based treatments for people with inherited eye diseases, which lead to vision loss and blindness.

Inherited eye diseases (IEDs) lead to vision loss and blindness, often due to changes in genes responsible for maintaining healthy sight.

Before 2012, genetic testing was only available to a small number of families with IEDs. This left many affected families waiting years for a precise diagnosis, with limited treatment options.

To improve care and outcomes for people with IED, Professor Graeme Black, **Next Generation Phenotyping and Diagnostics** Co-Theme Lead at Manchester BRC, collaborated with Manchester Centre for Genomic Medicine, Manchester Academic Health Science Centre and the NIHR Manchester CRF to develop, and introduce genomic tests, driving the development of novel treatments.

This research has led to:

- **Improved patient outcomes by identifying disease processes in the human eye.** Over the last 25 years, analysis has led to the discovery of more than 35 genes that cause disease and over 100 genetic tests, listed in the National Centre for Biotechnology Information Genetic Testing Registry. Manchester BRC continues to study this cohort and has recently introduced a new imaging technique in clinic because of this, called adaptive optics.
- **Changes in service delivery nationally and internationally.** Most recently, the genes responsible for albinism have been identified through the work of Manchester BRC researchers.
- **The development of a gene therapy centre for eye diseases in the North of England.** Manchester BRC, The University of Manchester and Manchester CRF are at the forefront of developing and delivering gene-based treatments for IEDs.

Patients have benefitted significantly because of this research. Retinal disease diagnostic rates have increased from less than 15% (pre-2012) to around 60-80% (2020-2024).

Impact case study

Less is more: Shorter radiotherapy treatment improves outcomes for bladder cancer treatments

NIHR Manchester BRC research has helped make bladder cancer care more effective, fairer, and more accessible in the UK and in some countries around the world. Our evidence for a shorter radiotherapy schedule changed the approach of all cancer treatment centres in the UK as well as major international guidelines.

Bladder cancer is the 11th most common type of cancer in the UK. More than half of people with advanced bladder cancer die within 5 years of being diagnosed.

Treatment usually involves either removing the bladder through surgery or having radiotherapy, both of which are similarly good at stopping the cancer from coming back. Surgery is a big operation that needs the patient to be in good health and takes time to recover from. Radiotherapy is less invasive and lets patients keep their bladders.

Bladder cancer grows quickly, which makes the length of radiotherapy treatment very important. There are two common ways of giving radiotherapy for advanced bladder cancer:

- 64 Gy (dose of radiation) given in 32 sessions over 6.5 weeks, or
- 55 Gy given in 20 sessions over 4 weeks (a shorter, more intense course called "hypofractionated").

A comprehensive analysis of two major UK trials combining individual data from over 800 patients showed that the shorter 4-week schedule is not only just as good as the longer 6.5-week one, but even better at controlling the cancer in the bladder and surrounding area. It reduces the chance of the cancer coming back in about 1 in 3 patients.

Now, the evidence from **Cancer Advanced Radiotherapy Theme** researchers is **helping drive smarter, more sustainable cancer care across the globe.** All cancer treatment centres in the UK now follow this approach, and it's also supported by major European and US guidelines.

Shorter treatment reduces pressure on NHS radiotherapy services while maintaining excellent patient outcomes. It also means fewer hospital trips for patients, less disruption to daily life, and costs less for the healthcare system.

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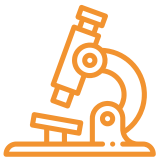
Impact case study

Let's Talk Labs: A collaboration exploring laboratory-based research and the difference it makes

An NIHR Manchester BRC Patient and Public Involvement, Engagement and Participation (PPIEP) programme engaged people with laboratory research through a co-produced campaign which included filmmaking, creative workshops, events, blogs and social media content.



Laboratory research is a crucial aspect of health research and helps to improve the lives of people affected by conditions like asthma, arthritis and cancer. Public awareness and involvement is often limited.

Vocal, community organisations from the Black & Asian Research Advisory Group (BRAG), young people's research advisory group Voice Up and 5 people from Greater Manchester, Manchester BRC and Manchester CRF co-developed and co-produced the **Let's Talk Labs campaign** to raise awareness of laboratory research and how it makes a difference to people.

Let's Talk Labs focused on community perspectives and questions about research. The programme trained and mentored 5 participants to develop their own ideas and produce their own films. It enabled participants and community groups to identify the best ways to engage their communities in this topic.

The programme delivered:

- Training and mentorship in filmmaking to people from diverse backgrounds.
- Visits to laboratories and collaboration between filmmakers and researchers.
- Creative workshops and events which brought community members and researchers together.
- 5 films produced by community members.
- 8 accessible blogs by researchers and research staff, highlighting their work and the difference that it makes to people.
- A 2-week social media campaign delivered with community partners.

All of the participants said they were likely to get involved in similar activities and to encourage others to take part in similar activities; 6 out of 7 reported that they would take part in research. Participants in the project reported that their **ideas about lab-based research had changed.**

Read more about the impacts our research has made on the Manchester BRC website.

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