







	Public sector				Private sector	Non-profit sector
<p>How does each part of the system:</p>	 <p>Government and public bodies</p>	 <p>NHS</p>	 <p>Patients and the public</p>	 <p>Academia and HEIs</p>	 <p>Industry</p>	 <p>Medical research charities</p>
	<p><i>Researchers: Work and move across all sectors, enabling different research settings to benefit from their skills and perspectives.</i></p>					
<p>Advance health research?</p> <p>This explainer separates each part of the system into <b>what function it performs</b> and <b>how it funds the system</b> (next page)</p> <p>↓</p>	<p>UK Research and Innovation (UKRI) and the National Institute for Health Research (NIHR) fund the research that <b>provides the evidence to improve outcomes for patients</b> and to inform decisions on the effectiveness, efficiency and safety of the health and care system.</p> <p>The public sector is a crucial space for <b>new generations of researchers to train and gain experience and skills.</b></p> <p>Public bodies play an <b>important regulatory role.</b> The Medicines and Healthcare products Regulatory Agency (MHRA) <b>regulates and authorises clinical trials</b>, and the Health Research Authority (HRA) works to <b>protect and promote the interests of patients and the public</b> in research.</p> <p>Other structures, such as the UK Health Security Agency and Office for Health Improvement and Disparities will also have <b>important roles in the public health</b> and research landscape over coming years.</p>	<p>The NHS has <b>unique capabilities for patient-centred research</b>, with <b>national coverage and access to patients.</b> It is a vital part of the system for testing, evaluating, and delivering innovation for health.</p> <p>For example, since 2018/19, <b>every single NHS Trust in England has taken part in research</b>, with over 1 million clinical research participants.<sup>1,2,3</sup></p> <p><b>Research in the NHS improves clinical outcomes</b> and drives innovation, making it indispensable for building a sustainable future for health and social care.</p> <p>The NHS <b>supports the adoption and spread of research, evidence and innovation</b> from the public, private and charitable sectors.</p>	<p>Patients and the public <b>participate in trials</b>, providing researchers with a diverse pool of people and the ability to conduct trials at pace and scale.<sup>4</sup></p> <p>Involving patients in clinical research <b>improves the quality and quantity of research</b>, and its relevance for patients and the health service.<sup>5</sup></p> <p>To maintain a sustainable health research sector, the UK needs to have a workforce that <b>provides the next generation of research leaders</b>, made up of individuals with relevant skills, and a range of other cross-disciplinary and transferable expertise.</p> <p>Patients and the public <b>also co-lead research, or sit on committees</b>, ensuring work aligns to lived experiences.<sup>6</sup></p>	<p>The <b>majority of public and charity-funded health research takes place in Higher Education Institutions (HEIs).</b><sup>7</sup></p> <p>The higher education sector is <b>a major strength of UK health research</b>, with 5 of the world's top 20 universities for clinical and health research based in the UK.</p> <p>HEIs are particularly <b>important facilitators of cross-disciplinary research</b>, bringing disciplines beyond biomedicine (such as humanities and engineering) into health research, <b>allowing close alignment of research with training and education</b>, maintaining an important link with the UK pipeline of talent.</p> <p>Similarly, <b>research institutes</b> can be based within universities, employing an interdisciplinary approach to make new discoveries.</p>	<p>The private sector is the <b>largest performer of health-related research in the UK</b>, undertaking half of all research.<sup>8</sup></p> <p>Both large companies and small and medium-sized enterprises (SMEs) <b>develop new medicines, vaccines, and technology, bringing together investment</b> from around the world.</p> <p>Industry <b>partners with the NHS</b> on clinical trials and <b>makes innovations available to patients more quickly.</b> Such collaboration was integral to the development of the Oxford/AstraZeneca vaccine.<sup>9</sup></p>	<p>Due to the unique purpose of charities, their <b>strong relationships with patients and insights into their priorities</b>, the research they fund and take on is <b>inherently focussed on patients, unmet needs, and neglected conditions.</b></p> <p>Charities <b>cover the whole spectrum of research to tackle a condition</b>, from basic research through to uptake of innovation in the NHS.</p> <p>Charities are also crucial to building the wider research base through <b>developing the skills of the workforce, investing in infrastructure and funding high-risk, high-reward research that de-risks discovery for industry</b> and leverages investment from industry.<sup>10</sup></p>

## Fund health research?

The **Governments of all four UK nations provide a significant amount of funding to health research**<sup>11,12</sup>, funded primarily through taxation and channelled through UKRI and the NIHR in England, Health and Care Research Wales, Scotland's Chief Scientist Office, and the Department for Health in Northern Ireland.

The majority of UKRI health research funding (£548 million in 2022/23) comes via the Medical Research Council (MRC).<sup>13</sup> **Most MRC funding flows to HEIs, covering discovery through to early clinical research, and funds research costs through programme and project grants.**

In England; **NIHR funding flows to HEIs; the NHS and health and care organisations; infrastructure, and staff; covering early clinical to applied research.**

MRC funding also goes to various **research institutes, which contribute hugely** to health research, such as the Laboratory of Molecular Biology and Francis Crick Institute.

Other councils including the Biotechnology and Biological Sciences Research Council (BBSRC), and Engineering and Physical Sciences Research Council (EPSRC) bring their expertise and investment to health challenges.

**The NHS supports individual research projects and research infrastructure** within devolved NHS Trust budgets not otherwise administered through NIHR.<sup>14</sup>

Funding from the NHS **also provides around 41% of clinical academic posts**, with the rest supported by universities (45%) and other sources (14%).<sup>15</sup>

The funding of health-related research within the NHS includes funding for Clinical Research Networks (CRNs), Biomedical Research Centres (BRCs) and Biomedical Research Units (BRUs), who bring together researchers, patients, and institutions to deliver different types of research.<sup>16</sup>

Public donations to medical research charities **offer a unique form of patient and public involvement and engagement**, ensuring UK health research reflects the needs of the public across the UK, in a way not found in other parts of the RDI landscape.

Public dialogue undertaken by the Academy found a 'strong sense that health research is incredibly important to all, as it has the potential to apply to everyone at some stage in their lifetime.'<sup>17</sup>, and polling shows that **medical research is by far the most popular discipline for R&D investment with the public**, with 57% of respondents ranking it among their top three priorities.<sup>18</sup>

In complement to the 'response mode' funding available for HEIs through UKRI, NIHR and other channels (outlined in column 1), government also provides funds through **quality-related (QR) funding**, the second branch of this 'dual support system'.

**QR funding comprises block grants that HEIs have the flexibility to spend strategically.** Funding is administered by UKRI proportionately to the quality of research outputs from HEIs, on behalf of Research England, the Scottish Funding Council, the Higher Education Funding Council for Wales and the Department for the Economy in Northern Ireland. **Funding is assessed periodically through the Research Excellence Framework.** QR funding also includes a charity research support fund (CRSF), providing additional funds unable to be covered by charitable investment, and a 'business research element', to support HEI research undertaken with industry.

For many academic institutions **the full costs of research are not covered by research income** (particularly overheads like infrastructure, facilities, and administration), partly due to a real terms decline in QR funding and the CRSF since 2010,<sup>19</sup> so health research is **cross-subsidised from other sources** (primarily international student fees).<sup>20</sup>

The private sector, particularly the pharmaceutical industry, **is the largest single investor in research in the UK**<sup>21,22</sup>, so will be crucial for achieving long term investment targets in UK R&D.

The relationship between public medical research spend and private industry spend is mutually beneficial for health research outcomes, in that **each pound of Government investment in R&D crowds in roughly two pounds of private investment.**<sup>23</sup>

In 2021, member charities of the Association of Medical Research Charities (AMRC) **invested £1.55 billion in medical research across the UK.**<sup>24</sup>

AMRC have calculated that the total annual rate of return on public or charitable investment in medical research is 24-28%.<sup>25</sup>

Often, this **investment is made in early-stage, high-risk research** which may not initially attract private investors.

With limited resources, charities often make **targeted investments to ensure value for money**, such as exploring the repurposing of existing drugs.

Some **charities also support research in dedicated research institutes**, such as the Wellcome Sanger Institute in Cambridge and Cancer Research UK's Beatson Institute in Glasgow.<sup>26</sup>

Charities also often support the costs of enabling infrastructure that allows research to take place, for example, the set-up and maintenance of tissue banks.

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