

Investing In research and development

Levelling up lung health briefing

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Respiratory outcomes in the UK have seen little to no improvement in the last 15 years; spending on respiratory research and development (R&D) has increased at a similar rate. It has risen by 1% since 2004, so that it now accounts for just 1.8% of all charitable and public funding spent on health research.¹

This is incredibly low comparative to the impact of respiratory disease on the nation's health. Chronic Respiratory Diseases account for 4.5% of the global impact of all disease²; and 6% in the UK. A lack of funding in northern science heavily undermines ambitions to attract industry investment in the UK, at a time when investment into respiratory R&D from the pharmaceutical sector and big tech has increased to capitalise on a global respiratory population of over 545 million.

Limited investment into respiratory R&D also has knock-on effects, such as limiting access to new treatments and stifling the talent pipeline for researchers and respiratory specialists, which further limits research activity and innovation within the field.

The change we need to see

By 2030, we need to see funding for respiratory R&D raised to £150m a year, to bring public funding in line with the proportionate impact of respiratory disease on the nation’s health.

A substantial increase in respiratory R&D funding should be focused on understanding the experience of those living with lung disease in the most deprived communities and developing innovative new pathways for improved diagnostics and care in places that have been left behind.

The North is already home to a burgeoning life sciences infrastructureⁱ and global leaders in respiratory science. These assets need to be exploited to benefit the UK’s health and wealth, and can be leveraged to drive economic growth in the North.

Respiratory R&D investment should therefore be at the centre of any attempt to level up health. Increasing funding would transform’s the UK’s ability to: better understand and prevent respiratory disease; find new drugs to treat and potentially cure conditions like COPD and asthma; develop cutting edge diagnostic tools to get people access the right treatment earlier; and harness 21st century technologies to ensure people can simply, easily and effectively manage their symptoms.

	By the end of 2022	By 2025	By 2027	By 2030
Respiratory R&D	Office for Life Sciences to identify and secure commitments from industry to match public sector investment to transform respiratory R&D in the North of England.	<p>New multi-year Life Sciences Sector Deal – funded by NIHR/UKRI and industry - for a Northern Respiratory Science Base comprising virtual centres for Experimental Lung Medicine, Diagnosis, Management and Prevention.</p> <p>Respiratory diagnostics embedded in Community Diagnostic Centres – and a potential gateway to trial recruitment.</p> <p>Our Future Health – supported by public and private funding –</p> <p>to transform understanding of respiratory disease through emphasis on recruitment in areas of greatest health inequality.</p>	<p>£150m per year for respiratory research and innovation.</p> <p>Northern Respiratory Science Base operationalised</p> <p>Transformation in diagnostics leads to vast number of previously undiagnosed who could be recruited to trials across the virtual centres</p>	<p>The Northern Respiratory Science Base is responsible for the development of new, globally marketable diagnostic tools, drug targets and digital forms of management and prevention.</p> <p>Growth in life sciences industry in the North, increasing high-wage employment and economic growth. Improvement in respiratory outcomes, reducing burden on NHS, and raising productivity.</p>

Cohort

By 2025, we need to have established a new respiratory cohort, for instance by enabling the inclusion of existing respiratory biomarkers in Our Future Health to enable better understanding of longitudinal progression of lung function decline and its impacts on other conditions. Recruitment for the patient cohort to reflect areas of greatest need including the 20 worst CCG areas for emergency respiratory admissions.

Northern Respiratory Science Base

By 2025, public funding commitments in place for a Northern Respiratory Science Base comprising new, virtual centres for Experimental Lung Medicine, Diagnosis, Management and Prevention. Total public funding commitments would be at least £80m/year (£20m/year per centre), driving similar multi-year industry commitments that drive the northern life sciences sector while being connected to expertise across the UK.

Diagnosis will be the initial flagship focus given the high rates of emergency admission. Government should ensure sure that this Northern Respiratory Science Base is connected to Community Diagnostic Centres enabling access to all data on respiratory diagnosis. The Northern Respiratory Science Base could therefore become an attractive investment proposition for technology companies focused on Artificial Intelligence and lead to the expansion of northern -omics capabilities. In turn, the application of these technologies could drive the identification of new biomarkers and development of new objective tests.

By 2027, a Northern Respiratory Science Base should be operational and resulted in a direct impact of a 20% reduction in morbidity and mortality in the 20 worst affected areas, through the development and utilisation of cutting-edge diagnostic tools and advanced respiratory management. Furthermore, the Base will increase our capacity in key technologies including Artificial Intelligence, quantum computing and regenerative medicine to drive discovery of the next class of respiratory drugs.

References

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