Medical research leads to significant economic activity. Safeguarding medical research funding must remain a priority and be appropriately protected through the Spending Review.

Overview

Funding for medical research is essential for the health and wealth of the nation. Government funding, provided for by taxes from the public, works to enhance charity funded medical research, supported by our donors. Both sources of funding are vital to enable the unique and enviable environment for research in the UK, for the following reasons:

1. Publicly funded medical research in the UK produces not only major health gains and scientific advances but also makes a vital contribution to the economy. A pound of public money spent on medical research stimulates much more than a pound of additional private sector research and together they generate increased GDP for the UK. The economic contribution is even more important now as we try to climb out of the recession.

2. Cancer Research UK is fully committing our resources to research that is additional to the work that is funded by the taxpayer, by other charities or by the private sector. We have no spare funds to compensate for cuts in other sources of funding. A reduction in public support for medical research will lead directly to less research and less benefit from this research.

3. The benefits created from the research we fund at Cancer Research UK are magnified thanks to publicly funded research due to the complementary nature of both funding sources.

4. Medical research takes time and is cumulative. Consequently, short term cuts are likely to cause losses of economic, health and scientific benefits that would take a long time to repair even if funding is restored later.

We understand that in the current economic situation, tough decisions need to be made to restore public finances. However, we strongly believe that publicly funded medical research should be protected as far as possible.

In absolute terms, every pound cut by government on medical research results in much more than a pound’s worth of loss of total medical research in the UK.¹ The productivity of Cancer Research UK’s, and others’, research will decrease if the publicly funded research base is shrunk. This is because part of the benefit of the research we fund is contingent on the availability of publicly funded medical research. Decisions taken today on the level and future growth of publicly funded medical research impact both our current environment and our future capabilities.

(a) The crucial role of medical research in the future health and prosperity of the nation

There is clear evidence demonstrating that public and charitable-funded medical research generates large health and economic gains to the UK. A recent economic study for the Medical Research Council (MRC), the Wellcome Trust and the Academy of Medical Sciences\(^1\) made clear that every taxpayer pound spent on medical research yields exceptionally good returns, not only in terms of health gains but perhaps even more so in terms of increased national income. The **economic contribution** is even more important now as we try to climb out of the recession. Few if any other destinations of public expenditure are as beneficial to the UK economy. Medical research is a vital source of competitive advantage to the UK.

At Cancer Research UK our vision is ‘Together we will beat cancer’. It is clear that the public understands the important role that medical research plays in tackling complex diseases such as cancer. Our supporters expect us to deliver research that will improve outcomes for cancer patients. Perhaps less well understood is the fact that in conducting medical research, we, the MRC, and other funders, are at the same time making the UK more prosperous.

Cancer Research UK has over 9 million supporters across the UK. In 2008/09 we spent over £355 million on research, funding the work of more than 4,800 researchers, doctors and nurses. Our research is entirely funded by the generosity of the public and 90% of the population lives no more than thirty miles from one of our research centres.

(b) Diverse, complementary sources of funding for UK science

A reduction in publicly funded medical research implies an equivalent reduction in total medical research in the UK. A lower level of investment in medical research implies lower health and economic benefits arising from that research. This is a direct negative impact. Cancer Research UK simply cannot replace decreased public funds. We are cash constrained and most other charities are too. In economic terms, there is no ‘crowding out effect’ between public and charitable-funded research. This means that in the (optimistic) scenario that public spend actually increased, we would not spend less as a result of that increase.

But there is also an indirect, negative, effect from reduced public medical research spending. Our work is highly dependent on investment from a range of government agencies. Industry, charities and the government have different but complementary roles as research funders. The synergistic nature of these relationships, and how they link with the unique resource provided by the NHS, is a vital asset to UK biomedical research. This implies that the benefits of our research would be reduced if there was a cut in publicly funded medical research, and we are deeply concerned about the possibility of such a scenario.

Below are specific examples to show how we work with the public sector, other charities and the private sector, to obtain the best returns from the research we collectively fund.

**Manchester Cancer Research Centre: strength through collaboration**

Cancer research conducted in Greater Manchester is a prime example of how public funding can leverage significant investment from other funders. It illustrates the direct benefits of publicly-funded research, but also shows that our investment in this project is mutually supportive with the resources provided publicly, both to set up the project and to ensure it can continue in the future.
The Manchester Cancer Research Centre (MCRC) is a multi-million pound partnership between the University of Manchester, the Paterson Institute, the Christie Hospital and Cancer Research UK. The MCRC is a world-class centre of excellence for research, with ambitions to more than double the level of cancer-related research activity in Manchester by 2015.2

Key enablers behind the success of the MCRC are the quality related (QR) funding received by the University from the Higher Education Funding Council for England (HEFCE), support funding that the Christie Hospital receives from the NHS, and infrastructure funding that the Paterson Institute, primarily funded by Cancer Research UK, receives from the Christie Hospital Endowment Fund. This funding, and the freedom for institutions to direct it strategically, contributes facilities and personnel vital for high quality research.

Additional funding bodies, including smaller more specialist charities and industry, have been attracted to the concentration of expertise and infrastructure in Manchester.3 Extensive collaboration with industry involves many different pharmaceutical and bioscience companies. AstraZeneca, for example, is funding a strategic alliance in Manchester which was worth £2.12 million in 2008. Public funds leverage Cancer Research UK and other charity contributions, which together stimulate further commercial investment, to the benefit of the UK economy.

Creating the right environment: the UK Centre for Medical Research and Innovation

One of the most exciting developments in UK medical science over recent years, and a major priority for Cancer Research UK, is the UK Centre for Medical Research and Innovation (UKCMRI). We welcome recent assertions that funding commitments for this project will be met. This ambitious project demonstrates our commitment to establishing a research environment that enables the highest quality research to take place. It has provided an opportunity to consider from scratch how a world-leading national research institute should be organised and run, with a distinctive vision of how biomedical research should be conducted.

The UKCMRI is a pioneering and exciting partnership between the MRC, Cancer Research UK, the Wellcome Trust and University College London to establish an interdisciplinary medical research institute in central London by 2015. The project has ignited substantial enthusiasm throughout the scientific community, promising to create a multidisciplinary research complex to host 1,270 researchers.4

The new state of the art research facility will be situated in St Pancras and Somers Town, in London. Well connected to the rest of the UK, Europe and further afield, this centre will attract the best researchers from across the globe and provide PhD programmes to train future scientific leaders. Its world-class reputation, building on those of the contributing partners, will attract high value investment to London, generating further employment opportunities. It is an invaluable project that will transform the fight against diseases and will enhance the UK’s economy.

Building excellence through strategic funding: Cancer Research UK Centres initiative

Cancer Research UK has taken a strategic decision to invest in research infrastructure in up to 20 Centres around the UK. These long-term centres of excellence will provide a sustainable environment for translational research, maximising health impact for local communities.

---

2 http://www.mcrc.manchester.ac.uk/ambition/goals.htm
3 For example the charity Breakthrough Breast Cancer funds the Breakthrough Breast Cancer Research Unit. The unit, officially opened in March 2010, is based within the MCRC: http://www.breastcentre.manchester.ac.uk/breakthrough/press.html
4 Scientific Vision and Research Strategy, UKCMRI, 2010
The Centres each have a critical mass of funding in the form of several research programme grants from Cancer Research UK, or senior fellowships, together with significant cross-disciplinary expertise. Nearly all locations also have an Experimental Cancer Medicine Centre as a resource for early phase clinical trials. In developing the Centre Strategies, partners have demonstrated a shared commitment to common goals in cancer research and public health with measurable milestones for the next three years and beyond. Centres are more effective than the ‘sum of their parts’, providing synergy and therefore value for money.

In setting up the Centres, the Charity has leveraged funding from universities for new, strategically important, senior research posts in areas such as radiotherapy and lung cancer. As with all the environments we work in, partnership is critical to maximise what we do. The success of our Centres relies on partnership with universities, NHS Trusts, and public funding for infrastructure from the Funding Councils, and the National Institute of Health Research.

Radiotherapy research: turning the ship around

Radiotherapy is a major treatment for cancer patients; used in around 40% of cases where cancer is cured. In 2003, the National Cancer Research Institute found radiobiology research in the UK in a state of decline, with the number of people active in the field nearing the point where it would no longer be sustainable as an academic discipline. A lack of scientific supervisors and few post-doctoral positions meant that young researchers had little option but to leave the country or choose an alternative research discipline. If this had continued there would have been no radiotherapy-based academics in the UK within 10 years. The sharp decline in radiobiology experts was due to progressive reductions in support for research over 15 years from the late 1980s. This was because of a belief that radiotherapy would not play such an important role in cancer treatment in the future; we now know this is not the case.

To actively overturn the decline in this area, re-growth has required a coherent approach from key stakeholders, including government, charities and industry funders. The Gray Institute for Radiation Oncology and Biology in Oxford, collaboratively supported by the MRC, Cancer Research UK and University of Oxford has been central to re-establishing radiobiology research in the UK. The three-way partnership supports a combination of research costs and infrastructure funding, including senior staff salaries. To date it is estimated that over £70 million has been invested, with on-going annual investments of around £10 million per year.

Nearly ten years since the decision to repair the dire state of radiobiology research in the UK, there is still much work to be done. This is a clear demonstration of how long it can take to turn the ship around, if there is a sharp reduction in support for an important area of research.

(c) Conclusion

Public funds devoted to medical research provide excellent value for money, not only because of the direct health, scientific and economic gains they generate, but also because they help the funding provided by organisations like us to be more productive. Cuts to public funding of medical research would be likely to have disproportionately negative consequences. The forthcoming Spending Review is a good opportunity to protect this funding for the benefit of the future health and wealth of the nation.

For more information please contact Hilary Tovey, Policy Manager at Cancer Research UK on 020 3469 8362 or email hilary.tovey@cancer.org.uk

---

1 Achieving a world-class radiotherapy service across the UK. Cancer Research UK, 2010.