Alzheimer’s Research UK (ARUK) response to Department for Business and Innovation (BIS) consultation on Proposals for Long-Term Capital Investment in Science and Research

1. Introduction

1.1. Alzheimer’s Research UK (ARUK) is the UK’s leading dementia research charity. As research experts, we specialise in funding world-class, pioneering projects at leading universities to find preventions, treatments and a cure for dementia. We believe science and innovation hold the key to defeating dementia and invest in the scientists discovering more about the condition and its causes.

1.2. It is important the UK remains a world leader in research and having a strong infrastructure is essential if we are going to achieve this. Therefore we welcome the opportunity to influence the Government’s Science Capital Roadmap through this consultation. We also welcome the Government’s long-term commitment to invest in the infrastructure for science and research. Increasing capital investment in 2015-16 to £1.1bn, and increasing it in line with inflation up to 2021, is an important step forward.

1.1. We think there is a strong business case to link Government capital investment to Alzheimer’s Research UK’s planned investment over the next five years. If you would be interested to understand our plans in more detail we would be keen to meet and discuss.

2. Aligning capital investment with Government priorities

2.1. The Prime Minister launched his Dementia Challenge in March 2012. The ‘Dementia Challenge’ represents the most comprehensive and high profile effort yet in tackling dementia. It works across three core strands – improving health and social care, creating dementia friendly communities and better research.
2.2. Alzheimer’s Research UK strongly welcomed this move to prioritise dementia and is supporting delivery of the Challenge through our position on the Research Champion Group, as well as contributing to the delivery of some of the commitments within the Challenge.

2.3. There is an opportunity to build on existing national and international momentum and align capital investment with a significant priority for the Government. We would propose doing this through investing in the development of Drug Discovery Institutes (see section 3) and potentially as part of a broader Dementia Research Institute.

3. The statistics and what increased investment in dementia research infrastructure could help achieve

3.1. Dementia is one of the biggest health crises of our time and to defeat it requires commitment on both a national and international scale.

3.2. 820,000 people are affected by dementia across the UK and 44 million people across the world. The annual cost of dementia in the UK is £23.6bn, this rises to £360bn worldwide. By 2030, with an ageing population, the costs will rise by a further 85 per cent, with much of the cost being met by unpaid carers including families.

3.3. Working with the Office of Health Economics, we have developed an economic model to examine the impact of hypothetical disease modifying treatments. Analysis published in our recent report ‘Defeat Dementia’\(^1\) shows that the numbers of people with dementia in the UK are set to grow rapidly over the next 36 years from around 831,000 people today to 1,133,000 in 2025 and 2,014,000 by 2050. However, if by 2020 a treatment was developed that could delay the onset of dementia by 5 years, compared to current projections without an intervention, there would be:

3.3.1. Thirty-six per cent fewer (469,220) people with dementia by 2030 and hence 398,837 fewer informal carers required. The reduction in numbers of people with the condition would mean dementia would cost £14.1 billion less in 2030 than without a treatment.

3.3.2. 666,000 fewer people with dementia by 2050 and 566,000 fewer informal carers required. The reduction in numbers of people with the condition would mean dementia would cost £21.2 billion less in 2050 than without a treatment. Thus an intervention that delays the onset of dementia by five years could reduce costs by 36 per cent in 2050.

4. Building on existing strategies and maximising the potential of Alzheimer’s Research UK and research charities more broadly

4.1. We recommend BIS use this opportunity to listen to charities as experts in their field who don’t have a particular funder, we are unique experts that can offer neutral advice. Charities also have broad international links that can significantly support the development of priorities that can have an impact at a much a larger scale. For example, Alzheimer’s Research UK has just worked with the Department of Health and partners across the world

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\(^1\) Alzheimer’s Research UK, *Defeat Dementia: The evidence and a vision for action*, June 2014
to deliver the first Global action against dementia legacy event, following the initial Summit in December 2013.

4.2. Alzheimer’s Research UK has launched an ambitious new strategy and launched a £100m campaign which will invest in the following areas over the next five years:

4.2.1. Drug Discovery Institutes (DDIs) - We will launch a network of Drug Discovery Institutes. These institutes will bring together basic science and clinical expertise together with drug discovery capability and enable the most promising drug discovery research. They will also work directly with the people who stand to benefit most from treatments. We strongly believe that drug discovery is not just the role of industry and the breakthrough for some will be achieved through bringing SMEs, academics and pharma together in collaboration. Our model for drug discovery is driven out of Institutes being more closely linked to academic institutions.

4.2.2. Capacity building – We will fund more scientists at all levels, from PhD to Senior Research Fellow and attract expertise from other areas of science to the dementia field. We aim to grow UK dementia research capacity by 20 per cent and we will vastly expand the ARUK Network of scientists, providing more funding for resources to enable collaboration.

4.2.3. Responsive grant funding – This will fund the strongest ideas from the field. We will also strategically invest in new research centres that specialise in the key areas of science that help move discoveries into translation. Our new Stem Cell Research Centre is one such innovation.

4.2.4. Global clinical development fund – The fund will be dedicated to taking promising treatments into testing in people. The fund will have the objective of increasing the number of phase 1 and phase 2 clinical drug studies and biomarker studies to help disease detection, diagnosis and monitoring. The outcomes of these studies will help create promising potential medicines to move into pharmaceutical development.

4.3. Our ambitious strategy will significantly increase progress in dementia research in line with the Government’s ambition, and greater capital investment could have a significant impact in helping achieve this. Working with charities and building on existing plans to develop infrastructure into research is an opportunity to build on existing momentum and deliver significant impact for people.

5. Investing in sustainable projects

5.1. We recognise that this consultation focuses on capital infrastructure but we welcome BIS’ acknowledgement that this must be supported by ‘a highly-skilled workforce with state of the art technical skills and research leadership’.

5.2. It will be essential to build capacity and skills as well as physical infrastructure to achieve sustainable excellence in research. We recognise the importance of this and one of our commitments is to increase more of the best minds entering dementia research.
6. Question 1: What balance should we strike between meeting capital requirements at the individual research project and institution level, relative to the need for large-scale investments at national and international levels?

6.1. We recognise it is important to balance investment into individual research projects with larger scale investment at a national and international level. To this extent there needs to be a balance, but we believe that large-scale strategic investment is the best way to achieve the greatest success. This does not have to be on a single site or with a single institution, it can be through a network of sites, each of which focus on the elements in which they are world class with a commitment to work with other sites who specialise in other areas. The capital investment should be driven accordingly and co-ordinated through strong agreements and leadership. This is a model we are adopting with our Drug Discovery Institutes and would be happy to discuss this thinking in more detail.

6.2. We think the capital investment funds should focus on dementia as a key priority. Dementia is already an international priority under the leadership of the G7 nations and there is incredible momentum to increase investment in dementia research. Investing in Dementia research would be an opportunity to build infrastructure around both a national and international priority, establishing a network approach.

6.3. Historically dementia research has been significantly underfunded, reflected in the fact there are no specific Institutes (such as the Crick, for example). To try and address this there has recently been a significant increase in research funding from government, charities and the private sector. However, additional capital investment in the infrastructure for dementia research provides an opportunity to achieve significant benefits for people with dementia and the economy. We are already working to achieve this infrastructure and increased capital investment would help us reach the level of resource that is required to achieve the step change in the dementia research that is so desperately needed.

6.4. For example, we are investing in Drug Discovery Institutes with the ambition that these will be networked at an international level with the UK acting as the research leader. DDIs are an excellent example of where greater capital investment could have a large scale impact for people both nationally and internationally, whilst also establishing the UK as a leader in research. This would be strategically advantageous to the UK.

7. Question 2: What should be the UK’s priorities for large scale capital investments in the national interest, including where appropriate collaborating in international projects?

7.1. In terms of prioritising funding, dementia research should be included as a key strategic area of investment. This will support the Government’s commitment to find a cure for dementia by 2025, international commitment to work more collaboratively on research and help make the UK a leader in dementia research. It will also critically build on work that is already underway in the UK to develop the infrastructure for dementia research and drug development.

7.2. In terms of capital investment in the infrastructure for dementia research, we strongly advocate that the focus be on drug discovery. We are currently developing a new infrastructure for drug development in the form of our Drug Discovery Institutes (as described above) and increased capital investment would:
7.2.1. Make the UK a leader in dementia research and the prime place for clinical development and research.

7.2.2. Enable greater international collaboration on dementia research and reduce duplication by making the UK a repository for existing data.

7.2.3. Make optimal use of the NHS to set gold standard for conducting clinical research.

7.2.4. Support existing work to bring the whole community together (SMEs, academics, pharma, the NHS and people with dementia) to develop life-changing treatments for people with dementia. The ARUK Dementia Consortium is a good example of how to achieve this, linking the best academic research with technology transfer experts and the pharmaceutical industry to ensure that promising early stage research is pulled through to treatment development.

7.3. At Alzheimer’s Research UK we have some innovative ideas, developed through an extensive collaboration with the international community. We think that with strategic capital investment, spent in the right way, BIS could greatly enhance the existing work being done through the PM’s Dementia Challenge, by helping to fund the infrastructure that can ensure the exciting ideas that exist within dementia research at the moment can flourish within the UK economy. **We would like to be a delivery partner to achieve this and we would willingly share our current strategy in more detail.**

7.4. As a final point, we would also like to highlight our support for the prioritisation of projects designed to support developments in Big Data. Big Data enables better collaboration in research and is especially important in a network model. The Medical Insight and Impact project will be important and particularly relevant to support UK centres of excellence as hubs of international partnerships, and the project focused on high-throughput medical research will crucially improve our understanding of ‘the prediction and stratification of disease across populations’. As an overall point we support a focus on projects that encourage multidisciplinary research and comparative longitudinal studies.

8. **Conclusion**

8.1. Capital investment in the infrastructure for dementia research is an opportunity to build on existing work and extensive international collaborations. It would enhance the existing work being done through the PM’s Dementia Challenge, be strategically advantageous to the UK as a leader in research and most importantly help improve the lives of people across the world.

If you have any questions about this response, or would like to arrange a meeting to discuss our plans in more detail, please contact Clare van Lynden, Policy and Public Affairs Advisor at c.vanlynden@alzheimersresearchuk.org or on 01223 824580.