Research spend in the UK
Comparing stroke, cancer, coronary heart disease and dementia
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EXECUTIVE SUMMARY
Foreword

Stroke is the biggest cause of complex disability worldwide, with an estimated 1.2 million stroke survivors in the UK today. Living with the long term impact of the condition can be devastating, yet research funding dedicated to stroke remains disproportionately small.

The Stroke Association commissioned this study to compare the burden of stroke, cancer, coronary heart disease (CHD) and dementia against levels of research funding.

An earlier study found that in 2007/08 only 3% of research funding spent on these four diseases was being allocated to stroke. The results from this latest study suggest that, although the UK spend on stroke research by government and the third sector has increased, stroke still lags behind other conditions.

Stroke prevalence in the UK places huge pressure on the NHS and social care services, which will only increase unless we further invest in stroke research to develop effective prevention, treatment and rehabilitation.

For too long, stroke was considered by many health professionals as a sad but untreatable condition. With fairly modest resource, the stroke research community has won major breakthroughs in the last 20 years, helping to transform the way stroke is treated.

If funding levels for stroke research remain the same, we will not be ready for the challenges that lie ahead. Current levels of research funding equate to £48 for every stroke patient, compared to £241 per person with cancer and £118 per person with dementia. We can, and must, do better for stroke patients.

As a research charity, the Stroke Association is proud to have funded pioneering research that has helped to save lives and improve stroke rehabilitation. It is vital that we bring together funders, researchers, stroke survivors and their families to help us increase investment into stroke research. Major advances in research are changing the world for patients affected by a range of different health conditions. With stroke now the second largest cause of death in the world, we cannot, and will not, let stroke research be left behind as a priority issue.

Juliet Bouverie
Chief Executive
Stroke Association
Over the last two decades, stroke research has been the driving force behind improvements that have transformed our acute and long-term stroke services. Twenty years ago there was only a handful of dedicated stroke units in the UK and many stroke patients did not even get a brain scan. Today, all stroke patients can expect to receive an urgent brain scan and clot-busting drugs if appropriate. Every major hospital has a stroke unit where patients are treated by a multidisciplinary team to address their needs. Patients receive rehabilitative care starting in hospital and then within the community.

Starting at a time when much of the medical community thought stroke was not worthy of investment, the Stroke Association has been pivotal in supporting and encouraging research which has increased our understanding of stroke and led to better treatments. The charity has consistently taken up early phase research studies, capturing the attention of larger research funding bodies, and leading to life changing outcomes for stroke survivors, those at risk of stroke and their families.

It is encouraging that in this report the total spend on stroke research in the UK has increased from £23m to £56m. At the same time, this report provides new evidence that stroke research continues to be significantly underfunded relative to other major diseases. We know that with a growing and ageing population, the burden of stroke is set to double worldwide by the year 2030, and we need a major shift in efforts and investment into this condition if we are to be in a position to respond.

Professor Tony Rudd CBE
National Clinical Director for Stroke
NHS England
Rationale and objectives

Stroke is one of the leading causes of death, both globally and in high income countries. Stroke patients are at a high risk of death, and a large proportion of survivors face disability and having to rely on health and social care services, relatives and friends to provide care and assistance.

This report is the outcome of a study commissioned by the Stroke Association to compare the burden and costs of stroke, coronary heart disease (CHD), dementia and cancer to the UK economy in 2012 with current levels of research funding. Cancer and CHD are also leading causes of death in Europe and, together with dementia, have a significant economic impact on health and social care services, on patients and relatives, and on the wider economy and society. The burden and costs of the four diseases were estimated using the same methodological approach. UK government and charity research funding was obtained for each of the diseases in the financial year 2011/12. The aim was to update previous estimates from a study comparing UK research funding with the economic burden of these four diseases in the year 2007/08. That study found that more than 70% of the research funding into these four diseases was targeted at cancer, with only 6% being allocated to dementia and 3% to stroke.

Methods

Disease burden and costs

For each of the four diseases, we obtained the number of prevalent disease cases, Disability Adjusted Life Years (DALYs) lost and their economic burden. Cancer was defined as International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) codes C00-D48, CHD as ICD-10 I20-I25, dementia as ICD-10 F00-F03 and G30, and stroke as ICD-10 I60-I69.

Prevalence estimates were obtained from sources such as the European Community Concerted Action on the Epidemiology and Prevention of Dementia (EURODEM) group, the Cognitive Function and Ageing Study (CFAS) and national disease registries. The number of DALYs lost for cancer, dementia, stroke and CHD was obtained from the Global Burden of Disease study.

Finally, the economic burden of cancer, CHD, dementia and stroke was obtained from a separate study conducted by us, evaluating the annual prevalence costs of these four diseases to the UK health and social care system, using the same methodology and a “top down” approach, i.e. aggregate national data.
Research funding

We identified UK governmental organisations that provide health research funding and contacted them to determine the value of research grants and fellowships awarded for dementia, cancer, CHD and stroke in the financial year 2011/12. These agencies included research councils, such as the Medical Research Council (MRC), and research agencies from the Department of Health and its devolved administrations, such as the National Institute for Health Research (NIHR). To these levels of research grant funding, we added the research infrastructure expenditure from three governmental agencies: Chief Scientist Office (CSO), NIHR and the National Institute for Social Care & Health Research (NISCHR).

Charity organisations that fund health research were identified from the Association for Medical Research Charities (AMRC) and the Charity Commission for England and Wales. Due to the large number of charities in the Charity Commission register that potentially fund health research, only the top 214 charities, in terms of their annual income, were considered in this study. These charities accounted for over 75% of the total income of all research funding charities. The levels of charity research funding for each of the four diseases were obtained from annual reports. Research funding provided by the pharmaceutical and biotechnology industry was excluded from the analysis.

Results

Burden and costs of disease

In the UK, there were approximately 2.3 million people living with cancer, 2.3 million people living with CHD, 0.8 million people living with dementia, and 1.2 million people living with stroke in 2012. These corresponded to a total of 2.9 million DALYs lost due to cancer, 1.5 million due to CHD, 0.4 million due to dementia, and 0.7 million due to stroke. The combined health and social care costs of stroke were estimated at £2.9 billion in 2012, compared to £11.6 billion for dementia, £5 billion for cancer and £2.5 billion for CHD.

Research funding

A total of 1,439 research grants and fellowships awarded were reviewed from seven out of eight governmental organisations, with a total combined value of £750 million. We added to these levels of research grant funding the respective research infrastructure expenditure by disease. The combined total research spend by government on cancer, CHD, dementia and stroke was £347 million, of which £157 million (45%) was devoted to cancer, £75 million (21%) to CHD, £73 million (21%) to dementia and £43 million (12%) to stroke. A total of 66 charities that provided research funding for these four diseases were identified from the Charity Commission register and the AMRC. These charities had a combined spend of £509 million on cancer, CHD, dementia and stroke research. As with the governmental agencies, most of these funds were devoted to cancer (£387 million, 76%) followed by CHD (£91 million, 18%), dementia (£17 million, 3%) and stroke (£13 million, 3%). However, both in total and as a proportion of total research funding into the four diseases, governmental organisations devoted considerably more research funding into dementia and stroke than charities.

In total, the combined research funding into stroke, cancer, CHD and dementia by governmental and charity organisations in this study was £856 million. Of this total, £544 million (64%) was devoted to cancer, £166 million (19%) to CHD, £90 million (10%) to dementia and £56 million (7%) to stroke.
The total levels of research funding per person with the disease were evaluated at £241 per person with cancer, £73 per person with CHD, £118 per person with dementia and £48 per person with stroke. Dementia received the highest levels of total research per DALY lost, at £225 per DALY lost, followed by cancer (£187), CHD (£110) and stroke (£82). However, for every £10 of health and social care costs attributable to the disease, cancer received £1.08 in research funding, received £0.65, stroke received £0.19 (or £0.11 depending on care costs of stroke used) and finally dementia received £0.08.

When comparing how government distributed research expenditure by disease in 2007/08 and in 2012, there appears to have been a considerable shift in the way governmental organisations distribute research funding across different diseases. In 2007/08, 66% of total governmental research funding into the four diseases under study was devoted to cancer, 21% to CHD, 9% to dementia and 4% to stroke. In 2012, the proportions devoted to dementia and stroke had increased to 21% and 12%, respectively, with cancer accounting for 45% of total research spend. However, the relative proportions of charity research funding into cancer, CHD, dementia and stroke remained virtually unchanged between 2007/08 and 2012. In stroke, charity funding doubled from £6 million in 2007/8 to 13 million in 2011/12.

Research funding by charities and governmental organisations in the UK

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UK Research Spend in millions (£)
Conclusions

The Stroke Association is ready to accelerate the breakthroughs made by the stroke research community over the past 20 years. We can achieve even greater improvements in stroke prevention, treatment and care.

There is an urgent need to double the level of investment into stroke research by 2020. We are calling on governments, other funders and the general public to help us achieve this aim.

Pioneering research is crucial to identifying new ways to save stroke patients’ lives and help stroke survivors make their best possible recovery. That is why we fund such vital work. For example, we are investigating a new device to remove blood clots mechanically, which may help thousands of stroke patients make a better recovery. We are involved in international research to test whether cooling a patient’s body by a few degrees can protect the brain from damage caused by a stroke. We are also funding studies that are using robotics to find new ways to help people struck down by stroke to recover their ability to move.

We have launched two new priority research programmes focusing on haemorrhagic stroke and the psychological impact of stroke. Haemorrhagic stroke is the most deadly type of stroke, and those patients who do survive are more likely to experience severe disability as a result of lasting neurological damage. It is vital to identify alternative treatments to improve the extremely poor recovery rates from this type of stroke.

Stroke survivors also tell us time and again that the psychological consequences of stroke are poorly understood, diagnosed and treated. We want to fund major programmes of research to help more people cope with the emotional strain stroke can bring.

Investment into cutting edge research is the only way we will be able to prevent the devastating impact stroke has on people’s lives. Together we can conquer stroke.

The full report is now available stroke.org.uk/research-spend-uk
**Stroke Research Spend in the UK**

With fairly modest resource, the stroke research community has won major breakthroughs in the last 20 years, helping to transform the way stroke is treated. However, our report provides new evidence that stroke research continues to be significantly underfunded in comparison to other major health conditions. If funding levels for stroke research remain the same, we will not be ready for the challenges that lie ahead. Stroke is now the second largest cause of death in the world, and we cannot, and will not, let stroke research be left behind as a priority issue.

**We are the Stroke Association**

The Stroke Association is the leading stroke charity in the UK. We believe in the power of research to save lives, prevent stroke and ensure that people make the best recovery they can after a stroke.

**We’re here for you. If you’d like to know more, please get in touch.**

**Stroke Helpline:** 0303 3033 100  
**Website:** stroke.org.uk  
**Email:** info@stroke.org.uk  
**From a textphone:** 18001 0303 3033 100

Our research programme relies on voluntary donations.

**Please help us to fund more vital research.**

Call our Donations line on 0300 3300740, visit stroke.org.uk

**Together we can conquer stroke**

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Item code: A03R03