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UK Health Research Analysis 2014

UK Clinical Research Collaboration 2015

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Acknowledgment should include “UK Health Research Analysis 2014 (UK Clinical Research Collaboration , 2015) <http://www.hrcsonline.net/pages/uk-health-research-analysis-2014>”.

The Health Research Classification System itself is open source. You are free to use and distribute the HRCS but you should not alter it or use it for commercial benefit.

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EXECUTIVE SUMMARY



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Executive Summary

The UK Clinical Research Collaboration (UKCRC) is a partnership of the main stakeholders that influence clinical research across the business, public and charitable sectors in the UK. The aim of the UKCRC is to keep the UK a world leader in clinical research¹. For partner organisations to be able to effectively co-ordinate activities accurate and timely evidence is needed about health research supported across the UK. The UKCRC Health Research Analysis Forum (HRAF) is a subgroup of twelve large public and charity funders of health research, plus the association of medical research charities (AMRC), responsible for periodically analysing the UK health research landscape.

This report is the third UK-wide analysis of public and charity funded health relevant research produced by the HRAF since 2004, and provides the most detailed view so far of UK research in this area. The Health Research Classification System (HRCS)² was used to categorise over 17,000 projects supported by 64 funding organisations, corresponding to £3bn of spend in 2014 (£2bn directly on research projects and £1bn on infrastructure).

Analysis of this dataset shows that public funding for health relevant research in the UK, both by taxation via the Government or by donation via medical research charities, has increased significantly over the ten year period. However, almost all growth in this funding is likely to have occurred in the first five years, with analysis of funding in 2004 and 2009 implying a compound annual growth rate (CAGR) of 8.2%, but little difference in total funding in real terms between 2009 and 2014 (CAGR 1.4%). Health relevant research in the UK has had five years of level funding across the public and charity sectors.

Building on the approach used for the 2009/10 analysis, it is estimated that a total of £8.5bn was spent on health relevant research and development in the UK in 2014, a real terms decrease of £780m from the revised estimate for 2009/10, largely due to a decrease in pharmaceutical company spend in this area. Based on higher education statistics agency (HESA) data it is estimated that more of the available funding is being spent in Universities in 2014

than in 2009, and we suggest that some of this is a result of moving some public sector research establishments (MRC Units) to University ownership.

Examining the breadth of research activities undertaken by projects, and comparing 2004 and 2014 data, there has been a decrease in the *proportion* of total funding for underpinning (-9.7%) and aetiological (-5.2%) research, although a *real terms* increase in funding for these areas across the 12 HRAF members of £195m. These fundamental discovery activities still include more than half of UK public and charity spend on health research (52%) and across all 64 funders participating in the analysis £1bn was spent on these activities.

There has been a noticeable additional investment in research important for translation of discoveries into new treatments with work on detection and diagnosis, treatment development, and treatment evaluation all increasing their proportion of total health research spend when 2004 and 2014 data is compared (total +9.3% across HRAF members, a real terms increase of £332m over ten years). This is strong evidence of the strategic re-prioritisation of activities across funders to accelerate the translation of discoveries from the laboratory to the clinic. Funders have complementary research activity profiles with some focussing on discovery, some translation, and others implementation and health services research.

Spend in previously under-represented areas of primary prevention research and respiratory medicine increased as a proportion of overall spend over ten years. The National Prevention Research Initiative (NPRI), a collaboration between 16 Government and charity funding agencies, plays an important role in the increased spend for prevention research, particularly between 2009/10 and 2014.

The largest growth as a proportion of overall spend has been in the area of infections research (+2.4%), possibly due to the renewed emphasis on addressing the challenge of anti-microbial resistance. Research on mental health also increased as a proportion of overall spend (+1.5%). A lower proportion of overall spend was allocated to Neurological diseases (-2.5%)

and Inflammatory and Immune System disorders (-1.5%). However most health categories³ received a real terms increase in spending comparing 2004 data with 2014.

Analysis of each funder's research portfolio highlights the complementarity between funders. Many charities have a focus on a particular disease type and therefore contribute significantly to spend in particular health categories. While inclusion of a wider range of organisations made little change to the overall picture of spend, important differences were seen at the detailed level (e.g. the contribution of Diabetes UK to spend in metabolic and endocrine disease, the collective contribution of Alzheimer's Research UK, the Alzheimer's Society and Parkinson's UK to neurological disease research, and Innovate UK to treatment development research). Aggregating spend across the charities, research councils and other Government funding lost most of these interesting differences, although with respect to research activity research council funding made up the majority of the *underpinning* category, charity funding spanned *aetiology*, *detection and diagnosis*, and *treatment development*, whereas other Government funding made up the majority of *treatment evaluation*, *disease management*, and *health services* research.

The geographical distribution of health relevant research funding has changed little between 2004 and 2014. Over a third of funding is allocated to London although this proportion has decreased slightly between 2004 and 2014 (-1.4%), Scotland has seen a similar decrease in its proportion of total UK spend (-1.2%), Wales a small increase (+0.8%), and Northern Ireland largely unchanged (-0.4%). Oxford has the largest increase in the proportion of total UK spend (+1.9%) of any location.

The monitoring and strategic co-ordination of health research is important given that it represents a substantial part of the UK science base, and has been shown to provide an exceptional rate of return to the UK economy⁴.

At a practical level one of the aims of this work was to compile a robust and openly accessible dataset on UK public and charity funded health research. All the data collected in this exercise will be made openly available (www.hrcsonline.net) for further analysis. HRCS coding has been a useful approach for initial analysis of the dataset, and extensive quality control of this categorisation has been undertaken. HRAF plan to continue to promote the HRCS as an international standard for health research classification and encourage international access to research portfolio data.

Ian Viney PhD

Chair UKCRC HRAF
MRC Director of Strategic Evaluation and Impact

1. UK Clinical Research Collaboration (UKCRC) <http://www.ukcrc.org/>
2. Health Research Classification System (HRCS) is described at www.hrcsonline.net
3. Only spending in the category *Ear* (research on deafness and normal ear development and function) was lower in 2014 in real terms compared to 2004, although this is due to changes in a small number of awards.
4. Estimating the returns to UK publicly funded cancer-related research in terms of the net value of improved health outcomes *BMC Medicine* (2014) <http://www.biomedcentral.com/1741-7015/12/99> This study commissioned by Cancer Research UK, the Wellcome Trust, and NIHR explored the social returns to public and charity funded research in cancer. It concluded that the returns were 40 per cent i.e. for every £1 of public and charity R&D spend, society gains 40 pence every year over the long term. This work built on an earlier study which found similar returns from cardiovascular disease research.



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