

Paper for Ideas Wales

Maximising the Return for Government Investment in Health and Social Care R&D in Wales

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1. Introduction

- 1.1 Wales has a small HEI sector but a strong science base in a limited number of thematic areas in health and social care. Our size, population characteristics (stable yet varied) and service configuration, coupled with our technical facilities and capabilities, should all help to make the country an attractive environment for external funders of research. A strong R&D base will help to improve the health and wellbeing of the population and contribute to economic growth and social development. It will enable us to improve the evidence base of policy and practice and recruit and retain high calibre professionals.
- 1.2 By enhancing the R&D budget, the Welsh Government has succeeded in strengthening the research base of HEIs and NHS Wales. However, progress has been uneven, with that of the health sector more rapid than social care.
- 1.3 The challenge for Government is to make research more productive, more efficient and innovative, whilst keeping pace and maintaining synergies with the strategies of the other UK funders. The goal has to be to maximise the opportunities for Welsh HEIs to improve their record of grant capture from the Research Councils and research charities in a climate of increasing competition. Research must be *policy relevant and internationally excellent*. International research excellence in policy relevant areas will enhance the profile of Wales as a “small, smart country” where research drives evidence based policy, practice and social development. For this to be achieved research needs to be accessible and available to policy makers.
- 1.4 Wales also has an additional important challenge, which is to make up for the years of underinvestment and stagnation in R&D in the period before devolution. The most appropriate strategy following this period has been to spread funding as widely as possible to catalyse the research community to collaborate and increase the quality and quantity of research outputs. After seven years, however, the time has come to review this approach and to demonstrate that strategy does not lag behind the rest of the UK, is well coordinated and is focused.
- 1.5 This paper proposes a way forward to further strengthen research in health and social care. It is a personal view, based on my previous role as Head of R&D in Health and Social Care in the Welsh Assembly

Government and my present role at the School of Medicine, Cardiff University. The paper highlights three key issues, with recommendations of areas that strategy could usefully centre on in the immediate future to benefit the health and wealth of the population.

2. Protect existing strengths and maximise the return for investment by targeting funding at research excellence

- 2.1 By funding the very best research, as measured by national and international standards, we protect our strengths, provide opportunities to expand into emerging areas of importance in science and maximise the return for investment.
- 2.2 Objective measures are available to identify our strongest research groupings. These measures, used in the last Research Assessment Exercise (RAE), are based on research income generation, research outputs and critical mass.
- 2.3 According to the RAE exercise, Wales' research strengths in the field of medical sciences lie in: psychiatry, neurosciences and psychology; cancer studies; primary care and public health; and infection and immunity. The studies linked with the allied health professions and dentistry also performed well. These strengths map well onto Welsh policy priorities of mental health, chronic diseases, cancer, and the health of children and older people.
- 2.4 We have notable strengths, which are attracting the attention of industry in basic and applied clinical research, and an increasing ability to make connections between elements of the research pipeline from "bench to bedside" for the benefit of patients. This type of research is called "translational research". Our research strengths lie in: genetics and genomics; the understanding of disease pathways; the measurement of disease at the population level; clinical trials; and in discoveries and innovations in diagnostics and treatments. We also have strengths in health and social services research and the evaluation of complex interventions. These areas of expertise are underpinned by world class facilities and resources in imaging, biobanking, clinical research facilities, computing and informatics, and methodological support.
- 2.5 Wales has a long tradition of excellence in applied community based research. We must capitalise on the legacy of Cochrane and others, and make investment in social and health relevant policies a matter of priority.
- 2.6 R&D in the NHS remains a difficult endeavour on account of the challenges entailed in gaining permissions to recruit patients into studies. Yet it has been shown that participation in studies can confer health benefits even if patients are not placed in the treatment arm. The NHS stands to gain from research both in terms of new treatments and in attracting well qualified and effective professionals who tend to

choose vibrant R&D environments to work in. A faster and simpler process would make Wales an attractive environment for investment by industry and other funders of research. We need effective safeguarding mechanisms which do not act as a barrier to research for patient benefit, as some patients are being denied opportunities to contribute to research by excessive bureaucracy. We also need to have an ethics approval process which is simpler or at least better calibrated to the scale and nature of the research question. The National Institute of Social Care and Health Research (NISCHR) in the Welsh Government and equivalent departments in the UK are collaborating to address these issues and the general consistency across R&D processes. Further progress will ensure that full benefits will be realised.

- 2.7 Critical mass in biomedical research varies between Welsh HEIs and within HEIs. Collaboration between research groups can help in this respect and benefit translation and its speed. Collaborations between Welsh HEIs are supported by HEFCW and NISCHR and can be successfully forged when expectations of funding and leadership roles are realistic among partners. Cross border collaborations can be particularly beneficial with some notable successes as exemplified by DECIPHer, the public health centre of excellence involving Cardiff, Bristol and Swansea Universities; and SARTRE which is an early translational research initiative led by Bristol and Cardiff Universities.

2.8 Recommendations

- Base funding decisions on criteria of excellence.
- Ensure that applied basic science, which is critically important to translational research, is adequately funded.
- Put in place a strategy to maximise the opportunities for Wales to lead the UK in primary care and public health research.
- Encourage and support collaborations involving institutions across the border, by funding joint research projects.
- Implement a Medical Academic Board for Wales to help foster strategic alliances in research across the Medical Schools. Such a Board has been successfully used in Scotland to achieve unity in the academic community.
- Make R&D processes easier without compromising safety, data protection and ethical procedures. Support a strategy which will get the public to sign up to epidemiology and encourage patients to permit the use of their health records for research purposes.
- Within the context of excellence, introduce flexibility into funding models to meet the differing needs of research groups. Clearly identify those groups of international quality and address their bottlenecks for enhanced performance in a tailored fashion.

3. Improve Wales' position in R&D by sustaining investment in research infrastructure and capacity building schemes.

- 3.1 Wales has a well developed All -Wales infrastructure, funded by NISCHR, to support research in HEIs and the NHS. Those led by HEIs are spread across many thematic research groups some of which are in their second five year cycle of funding.
- 3.2 The infrastructure in the social care service sector remains to be implemented, despite a review and an agreed strategy in place.
- 3.3 Attracting young talent and providing training and career opportunities at different points in the clinical and non clinical career pathway are important strategies for capacity building and succession planning. Strategy in this respect is inextricably linked with the major research Councils and research charities, and Welsh funding needs careful targeting to maximise potential benefits.
- 3.4 NISCHR currently funds PhD studentships and fellowships, the former a regular feature of competitive calls. Grant schemes which meet direct research costs are no longer run on a regular basis in the medical sciences in Wales despite their importance in funding pilot and exploratory work, which could pave the way for scientists winning bigger grants from funding bodies.
- 3.5 Some grant schemes are run on a partnership basis with other UK funders but there are notable gaps in provision for scientists in Wales, gaps which must impact negatively on innovation and the evidence base of policy and practice in the NHS. Researchers in Wales do not have access to all funding schemes or equivalents that are available in England. Examples include: Research for Patient Benefit, Senior Investigator Status and Sustainability and Flexibility funding. This makes it difficult to recruit to senior posts in Wales and encourages talented researchers to leave the country.
- 3.6 Informatics and bioinformatics provision is an important component of the research infrastructure needs of the R&D community. We have high power computing facilities and technical expertise but still lack a comprehensive strategy and management structure to meet needs in a co-ordinated and prioritised manner on an All-Wales basis.

3.7 Recommendations

- Review the HEI led thematic research groups and disinvest in those that have not met their objectives. In the interest of cost effectiveness this review could also usefully consider the potential to merge the two major components of the All- Wales research infrastructure which are NHS and HEI led: Academic Health Science Collaboration and NISCHR Clinical Research

Collaboration.

- Urgently review the balance of investment between infrastructure and research grants as the balance is tipped too far in the direction of infrastructure.
- Strategically target investment in studentships and fellowships to address gap areas in research: health economics, statistics, bioinformatics and imaging.
- Building on the Welsh Clinical Academic Training Scheme, introduce cost effective pre-fellowship grants to help researchers prepare for the highly competitive UK fellowship grants run by the NIHR, MRC, Wellcome and CRUK, where Wales has a poor record. The grants should be for one year and based on the potential of the person and excellence of place and team.
- Address the gaps in innovation, Welsh policy and service related research, through grant scheme(s).
- In partnership with the ESRC, set up a Welsh policy research unit in health and social care. This could serve the First Minister's Delivery Unit and also support the Welsh Government's intention to set up a pan-Wales public policy institute during this Assembly term.
- Place the implementation and management of the forthcoming NISCHR informatics and bioinformatics strategy in the hands of the NHS: The Academic Health Science Collaboration, to ensure delivery.
- Provide "seed corn" funding to boost research in areas of greatest health need: cardiovascular disease, diabetes and inequalities in health, which can lead to full proposals to larger funders.
- Advance the implementation of the strategy for social care R&D as a matter of priority in NISCHR. This is another area where Wales has potential to lead the rest of the UK.

4. Support innovation and collaborations with industry

- 4.1 The importance of increasing activity in R&D, innovation and commercialisation is highlighted by the policies of the Welsh Government Departments of DHSS, DE&T, DCELLS and the OCS. Health and Biosciences or Lifesciences is identified as a priority theme and a whole Government approach to support is highlighted.
- 4.2 Collaborations between HEIs and industry are undeveloped and there is no model for successful partnership working to build on. The proposed options appraisal and business model for Phase II of SARTRE could be useful in this respect. Preliminary thinking proposes a South West federated model involving a number of universities in Wales and South West England focusing on medical technologies and the alignment of material sciences and engineering to further aims in translational research.
- 4.3 Business advice for HEIs and the NHS, delivered by DE&T, is well

developed and comprehensive. However a funding gap still exists for early stage translation with schemes in England closed to Welsh principal investigators and no equivalent schemes in place in Wales. In the field of health related innovation and commercialisation, this problem is at times compounded by an apparent confusion in the responsibilities of the Welsh Government Departments.

4.4 Recommendations

- Create a flexible proof of concept fund levied from the relevant Welsh Government Departments. Peer review applications and where appropriate place priority on funding those with a major partner already in place.
- Place a senior civil servant in charge of coordinating strategy across the Welsh Government in innovation and commercialisation.
- Support SARTRE in developing a successful model for HEI and industry links, which could benefit all HEIs in Wales.
- Introduce devolved portfolios of funding, a tried and tested model by the MRC, to foster early translational research links between HEIs and industry.
- Recognising the current financial constraints on industry, examine alternative way of HEIs working with industry e.g. people exchange programmes.

5. Conclusion

The recommendations of this paper have not proposed dramatic or wholesale changes to current strategy. Such changes would make Wales out of step with the rest of the UK and therefore vulnerable to isolation in research. They could also be costly at a time of ever increasing pressure on resources. What has been proposed is a potentially cost neutral solution involving a thorough and timely review and a reorientation of current strategy to focus on excellence to achieve health and economic gains.