

Annual Report



2021

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Research.
Evidence.
Action.

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Chairperson and Chief Executive Report



Prof Jane Grimson
Chairperson



Dr Darrin Morrissey
Chief Executive

It is an important time for health research in Ireland. Sláintecare creates cross-party consensus and a platform for transformation in the health services; Healthy Ireland aims to improve the health and well-being of the Irish population; and there is an increasing emphasis on the importance of evidence and evidence-based decision-making in healthcare and health policy. In addition, new areas, such as big data, digitalisation and genomics, are beginning to emerge, so 2018 was an interesting and opportune year for both of us to have joined the Health Research Board, as Chairperson and Chief Executive respectively.

One of the first things that struck us on taking up our respective roles was the work ethic, teamwork and commitment of the people who work at the HRB. These qualities are central to the organisation's ability to reach the ambitious targets outlined in *HRB Strategy 2016–2020 Research. Evidence. Action*. We would like to commend the HRB team for their hard work and dedication throughout 2018. We would also like to thank the Board for their commitment and collective insights.

Three years into our plan, *Strategy 2016–2020, Research. Evidence. Action*, the HRB has demonstrated clear progress on its major goals and objectives, and during 2018 the organisation made strong advances in a number of important health research areas.

Health research leadership

The HRB's growing leadership and influence are evident both nationally and throughout Europe. In Ireland, the HRB has been spearheading initiatives around open research, research integrity, and public and patient involvement in research. We provided key evidence to underpin decision-making in relation to a series of actions in Sláintecare and the Healthy Ireland strategy, and we co-hosted Ireland's first National Drug Forum in partnership with the Department of Health's Drug Policy Unit.

In Europe, we continued to hold leading positions on research policy groups in areas such as research integrity, biobanking, open research, and personalised medicine. All of these have significant implications for Irish researchers and it is essential that Ireland has a voice at the global table. We were also successful in securing Irish membership of the European Clinical Research Infrastructure Network (ECRIN), which will increase access for Irish patients to multi-national clinical trials. It will also make it easier for Irish researchers to extend their own trials internationally and help improve the quality of patient care.

Health research delivery and impact

Key initiatives delivered by the HRB during 2018 included:

- Funding a selection of new awards worth more than €44.7 million (including co-funding) which deliver on our strategic priorities. Some examples of these are:

€44.7m

to support 93
awards across 13
host institutions

- > Applying Research into Policy & Practice Post-doctoral Fellowships
 - > Applied Partnership Awards
 - > Definitive Interventions and Feasibility Awards
 - Increasing participation in our new online data collection system, LINK, which is an ambitious programme designed to integrate our four national health information systems and receive data online from service providers in the areas of physical and intellectual disability, in-patient psychiatry, alcohol and drug treatment, and drug-related deaths
 - Delivering three evidence reviews, and completing six evidence briefs and two literature searches to support the decision-making process at the Department of Health
 - Launching HRB Open Research, Ireland's first open access publishing platform
 - Introducing a new Conference and Event Sponsorship scheme call to expand and streamline our support for health research conferences, seminars and events
 - Redeveloping the HRB website.
- research-performing institutions
 - Supported 228 research jobs
 - Helped Irish researchers leverage more than €7 million from Horizon 2020
 - Involved 10,590 patients in 399 clinical studies underway at HRB Clinical Research Facilities (CRFs)
 - Enabled 1,200 cancer patients to enrol in Cancer Trials Ireland clinical trials
 - Developed health research career pathways which, as they take shape, promise to deliver a strong cohort of researchers who will continue to work in, and improve the Irish health system.

Our activities have a direct impact on researchers, the research system, and the health services, which in turn delivers positive economic benefits for Ireland. Notably, in our research funding activity in 2018, we:

- Invested €44.7 million (including co-funding) to support 93 research projects across 13

We supported an increasingly balanced research funding portfolio, with growth in the areas of population health and health services research. We have also made great strides to ensure gender balance across our international review panels and our investments, and we continue to have excellent gender balance among our grant recipients. Moreover, we are proud to say that gender balance on our Board was achieved in 2018, and this included the appointment of the HRB's first female Chairperson by the Minister for Health.

Further examples and case studies which demonstrate what was achieved during the year are included throughout this report.

Health research partnership

Working in partnership with other funders and research-performing bodies, we have supported many initiatives during the year, including:


- HRB national co-funding initiatives with research charities, Science Foundation Ireland, and the Irish Research Council
- HRB international co-funding initiatives with Wellcome Trust, Fulbright, the US National Institutes of Health, and the Northern Ireland Health and Social Care R&D Division
- Awarding of €2 million to Evidence Synthesis Ireland to support capacity building across a broad range of evidence synthesis techniques on a cross-border basis, with Northern Ireland contributing €0.5 million of the funding
- Supporting the Department of Health by setting up a secretariat for the new Health Research Consent Declaration Committee and developing guidelines for the research community on the Health Research Regulations 2018
- Co-hosting the first National Drug Forum with the Department of Health Drug Policy Unit
- Providing data on the drug treatment situation in Ireland to the European Monitoring Centre on Drugs and Drug Addiction
- Working in partnership with the Health Service Executive (HSE) to enhance and

develop quality and patient safety through targeted research projects


Future developments

Looking ahead, we will continue to focus on delivering high-quality research, information systems and evidence that positively impact people's health, patient care and health service delivery in 2019, with a strong commitment to embedding research into the heart of the health system.

A key action for the organisation in 2019 will be to commence the development of the HRB's new strategic plan 2021–2025. We look forward to working in consultation with all of our health research stakeholders as we progress this.



Prof Jane Grimson
Chairperson



Dr Darrin Morrissey
Chief Executive

Snapshot of HRB activities during 2018

Ireland joins the European Clinical Research Infrastructure Network

The HRB funded Irish membership of the European Clinical Research Infrastructure Network (ECRIN). This will increase access for Irish patients to multinational clinical trials. It will also make it easier for Irish researchers to extend their own trials internationally, and will help improve patient safety and quality of care.



The HRB published intellectual, physical and sensory disability statistics

Figures highlight unmet needs and increased future demands on service provision for people with an intellectual, physical, and/or sensory disability.

Supporting research among medical charities

€2.9m for 13 new projects

Research into executioner proteins, high-intensity interval training for cancer recovery, and gold nanoparticles to fight oesophageal cancer: these are just some of the projects announced by the Health Research Board (HRB) and the Medical Research Charities Group (MRCG) in 2018.



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€7.1m

in Horizon 2020 (H2020) funding in 2018 received by Irish health researchers. Since H2020 began, Ireland has won €59.6 million in funding. This is 2.1% of the total available H2020 research budget.



The HRB published the latest drug treatment figures for Ireland

Drug treatment figures from the HRB showed that a total of 63,187 cases were treated for problem drug use (excluding alcohol) in Ireland between 2010 and 2016. Treated cases increased from 8,806 cases in 2010 to 9,227 cases in 2016.

The number treated for cocaine use rose for the third year in a row. Opiates were still the main problem drug reported. Benzodiazepines increased both as the main problem drug and as an additional problem drug.

Alcohol treatment in Ireland 2010 to 2016



53,763

CASES

7,643 in 2016

According to Dr Darrin Morrissey, Chief Executive, HRB:

'Alcohol remains the main problem drug that people enter treatment for in Ireland. The trends outlined in this report provide good evidence to inform policy and plan services for alcohol treatment'.

€2m

Contributed by the HRB in all-island investment to build capacity in evidence-informed decision-making.

Evidence Synthesis Ireland is funded by a €1.5 million investment from the HRB and €500,000 from the Research and Development Division of the Public Health Agency in Northern Ireland.

According to Dr Darrin Morrissey, Chief Executive at the HRB:

'This investment ... will support a key action in the *Sláintecare report*, which highlights that evidence should be at the core of routine decision-making across the health system'.

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The HRB published detailed psychiatric admissions and discharges data for 2017

First National Drugs Forum

The HRB and the Department of Health organised the first National Drugs Forum. The Forum aims to promote best practice for those working in addiction services; exchange knowledge; and identify information gaps.

€752 million

invested in health-related research between 2011 and 2015

The HRB published the first Irish report on national expenditure on health research in Ireland for the five years from 2011 to 2015.

According to Dr Maura Hiney, Head of Post-Award and Evaluation, HRB and lead author of the report:

'We now have a baseline for future trend analysis of Irish health research investment that allows us to track the effects on spending of changes in Government research and development strategy'.



Dr Brigitte Manteuffel, Georgia Health Policy Centre (GHPC), Minister Catherine Byrne, TD, Dr Darrin Morrissey, HRB and Dr Karen Minyard, GHPC.

HRB-supported research highlights significant rise in uric acid levels in Irish patients

As a result of a study of more than 128,000 patients in the Irish health system, researchers found that uric acid levels increased by 21% over a nine-year period.

'High levels of uric acid are directly linked to the development of several major diseases, including high blood pressure, diabetes, kidney disease, heart attacks and strokes', says Professor Stack, Foundation Chair of Medicine at University of Limerick Graduate Entry Medical School and Consultant Nephrologist at University Hospital Limerick.



€5.8m

invested by HRB in new health researcher training programmes. The programmes will be in the areas of youth mental health, neonatal brain injury, elderly care, and multimorbidity in primary care settings.



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Health Research Regulations 2018 and the General Data Protection Regulation

The HRB created detailed guidance for researchers and set up a Secretariat to support the Health Research Consent Declaration Committee, which will be appointed by the Minister for Health.



The HRB compared the Irish drug situation with the rest of Europe

The HRB provided the Irish data for the *European Drug Report 2018*.

Working with other countries across Europe increases our understanding of drug markets and emerging trends. This is essential if we are going to reduce the harm caused by drug use and develop approaches to support recovery effectively.



Support for clinical trials

Statistics released by HRB Clinical Research Coordination Ireland (HRB CRCI) on International Clinical Trials Day 2018 show that there were 237 trial sites open in 2018. This was an increase from 134 trial sites open in 2014, when HRB CRCI was first established.

The HRB supported training of Ireland's first FAIR data stewards

The HRB and eight partners (University College Dublin, Trinity College Dublin, the Royal College of Surgeons in Ireland, University College Cork, National University of Ireland, Galway, University of Limerick, Dublin City University, and Cancer Trials Ireland) sent 15 people to the Netherlands to become Ireland's first FAIR (Findable, Accessible, Interoperable, Reusable) data stewards.



Dr Sarah Craig, HRB, presents Thomas Hayes with his award.



Heart valve design wins HRB prize at the BT Young Scientist & Technology Exhibition

Thomas Hayes, a sixth year student from Yeats College Galway, designed an artificial heart that met the International Organization for Standardization (ISO) standard for heart valve substitutes.

His prototype device uses a clever mix of stainless steel rings and bovine tissue that is potentially cheaper than current commercial options. The valve is also more flexible than current designs and could provide patients with a much better fit.

Health Research in Action

A new edition of *Health Research in Action* showcased some of the many ways that health research is making a positive difference to people's health and our health services.



The HRB published three evidence reviews for the Department of Health



The HRB published four editions of Drugnet Ireland.

In 2018, the HRB's two disability databases, the National Intellectual Disability Database and the National Physical and Sensory Disability Database, were closed and work began on a new merged system: the National Ability Supports System (NASS).

Dr Sarah Craig, HRB, co-authored a research paper published in the *Journal of Applied Research in Intellectual Disabilities*, 'Irish persons with intellectual disability moving from family care to residential accommodation in a period of austerity'. The analysis found that between 2009 and 2014, an estimated 200 people per annum moved from family care to residential accommodation, but that the number of residential spaces available nationally fell by 9% in this period



The HRB funded four Fulbright-HRB Health Impact Awards to support Irish citizens to study, conduct research, or teach in the United States.



Dr Therese Lynn, HRB, co-authored a research paper, 'Trends in injector deaths in Ireland, as recorded by the National Drug-Related Deaths Index, 1998-2014', which was published in the *Journal of Studies on Alcohol and Drugs*. Between 1998 and 2014, a total of 16,500 drug-related deaths in Ireland were documented by the National Drug-Related Deaths Index.

The HRB reduced its fossil fuel use and is 15% below its Sustainable Energy Authority of Ireland (SEAI) energy consumption target for 2018. The reduction is the aggregation of many small changes that improve energy efficiency.



The HRB launched its new mobile-optimised and standards-compliant website to get people to the information they need faster.



Professor Joel Selanikio delivered the keynote presentation at the HRB National Conference 2018: Big data in health – the opportunities and the challenges ahead.

The HRB introduced a new conference and events funding scheme to streamline its approach to sponsorship and create capacity among the health research community to raise awareness, increase engagement, and transfer knowledge.

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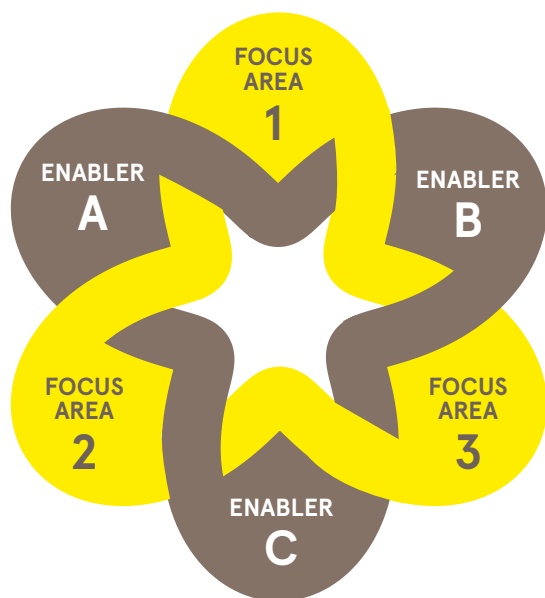
Key deliverables in line with HRB strategy 2016 – 2020

The HRB Strategy 2016–2020 charts a clear course for what the organisation will do over that time period.

This annual report highlights key achievements made during 2017 in line with the strategy objectives, and it showcases some examples of significant outcomes and successes.

Figure 1.
Core elements of HRB strategy 2016–2020

Our three focus areas and enablers are complementary and interdependent, and we will pursue them simultaneously throughout the period of the strategy.



FOCUS AREA 1 Address major health challenges	ENABLER A Support exceptional researchers and leaders
FOCUS AREA 2 Support healthcare interventions	ENABLER B Build a strong enabling environment
FOCUS AREA 3 Address the research needs of the Irish health and social care system	ENABLER C Enhance organisational performance

Focus areas

As the lead national agency for health research in Ireland, we have a responsibility to invest in the future as well as to meet the needs of today's health system. Great ideas are the basis for many advances in healthcare. We have defined the following three distinct but complementary areas of focus that we consider to be the most appropriate to lead the HRB and its community over the period 2016–2020 and beyond:

- Address major health challenges.
- Support healthcare interventions.
- Address the research needs of the Irish health and social care system.

Enabling themes

Progress in the three focus areas will be enabled and maximised by policies and actions that affect all three:

- Supporting the exceptional researchers and leaders we need to undertake high-quality health research and generate evidence.
- Building a strong enabling environment for health research in Ireland and ensuring that we understand the outcomes and demonstrate the impacts of our investments.
- Ensuring that our policies and governance are robust and founded on best practices.

Focus area 1

Address major health challenges

2018 Objectives:

- Support high-quality, investigator-led, internationally competitive research.
- Develop and implement co-funding opportunities with international agencies and institutions.

Key items delivered in 2018

- 23 awards, worth €12.3 million, were made in this focus area; of these, 22 awards involved international collaboration.
- Co-funded 13 awards worth €2.9 million under the ninth HRB-Medical Research Charities Group (MRCG) Joint Funding Scheme.
- Opened call for Investigator-Led Projects 2019 in August 2018.
- Launched a new funding instrument focused on Parkinson's disease research in partnership with the Medical Council, based on a bequest by Mr Patrick Quinn.
- Co-funded two large Investigator Awards and two Seed Awards with a combined value of €2.6 million under the Science Foundation Ireland (SFI)-HRB-Wellcome Research Partnership.
- Under the HRB strategy for engagement in European Union (EU) research, the HRB participated in five joint transnational calls in 2018. These included four Joint Programming Initiatives (JPIs) – namely, two calls in the Joint Programme in Neurodegenerative Diseases (JPND) and two calls in the JPI on Antimicrobial Resistance (JPIAMR) – and one call in the ERA-Net on Personalised Medicine (ERA PerMed).
 - Invested €1.2 million in six awards under joint transnational calls in health and social care aspects of neurodegeneration and in transnational research on antimicrobial resistance.

23

awards, worth
€12.3m, were made
in this focus area.

Case Study 1:

Supporting research among medical charities – €2.9 million for 13 new projects



‘This programme provides a particular opportunity for medical research charities to support research that is in response to what patients actually need. With matched funding from the HRB, charities can in effect double their research budgets’.

Executioner proteins, high-intensity interval training for cancer recovery, gold nanoparticles to fight oesophageal cancer, gut bacteria that may influence epilepsy, and light-activated polymers to kill infections are just some of the projects announced recently by the HRB and the MRCG.

The 13 research projects will address the research needs of specific patient populations and were awarded through the ninth HRB-MRCG Joint Funding Scheme. Eleven of the 14 projects have short video explanations about their projects.

Commenting on the awards, Dr Darrin Morrissey, Chief Executive, HRB said:

‘There are some very impressive ideas among these new research awards. The ingenuity of the research, as well as the impact that it will have on people’s lives demonstrates why it is so important to build a health research culture at the heart of our health services’.

Dr Avril Kennan, Chief Executive, MRCG noted:

‘This programme provides a particular opportunity for medical research charities to support research that is

in response to what patients actually need. With matched funding from the HRB, charities can in effect double their research budgets’.

Dr Caitriona Creely, Programme Manager, HRB added:

‘The HRB-MRCG Joint Funding Scheme is an opportunity for the HRB to work with charities and support excellent research of relevance to patients, from understanding the cause of diseases, to looking for a cure, to focusing on care for people and families living with conditions day to day’.

The scheme runs approximately every two years.

Case Study 2:

Changing how we understand and treat rare diseases

Professor Eileen Treacy is combining research, policy, and clinical practice to improve the lives of patients with rare diseases, and she would like more investment in Ireland in this important area, which often requires highly specialised care.

Despite the name, rare diseases cumulatively are not rare. Thousands of known rare diseases affect at least 6% of the population in Europe, and in Ireland alone it is thought that as many as 300,000 people have such conditions.

‘While their diseases may be varied, what these patients have in common is often the chronic and highly debilitating nature of the conditions and the need for highly specialised multidisciplinary clinical care, psychosocial care and research which is often scarce and difficult to access, particularly in smaller countries such as Ireland’, explains Professor Treacy, who is Clinical Lead for the National Clinical Programme for Rare Diseases and Consultant Metabolic Physician at Temple Street Children’s University Hospital and the Mater Misericordiae University Hospital.

One of her current research interests is in the inherited condition called galactosemia,

where newborns sustain organ damage from the milk sugar, galactose, in their diet.

‘Galactosemia affects 1 in 16,000 births in Ireland each year’, Professor Treacy says. ‘Studies from our group have shown that despite newborn screening and commencement of dietary galactose restriction, over 50% of patients in Ireland have developed significant complications from this condition’.

That sparked her to ask why, and she embarked on a programme of patient-oriented research supported initially by the HRB, the MRCG, and Temple Street Children’s University Hospital (TSCUH) Foundation.

The standard practice had been to remove virtually all galactose from the diet, which prevents liver failure in babies. Despite this treatment, many people with the condition go on to develop significant issues, such as intellectual difficulties, speech abnormalities, and infertility in females.

Professor Treacy led a team at TSCUH, along with Professors Pauline Rudd and Dr Peter Doran at University College Dublin, to explore the biochemistry of people with the condition. The team

developed a patient registry for galactosemia and their HRB-funded project analysed the biochemistry and genetics of the patients.

They developed new tests to monitor how patients’ bodies respond to galactose, and now the National Centre for Inherited Metabolic Disorders is using the technology to monitor adults with the condition as they modify the galactose in their diet.

The HRB-funded research has contributed to revised international guidelines for galactosemia. It has also led to an international collaboration with the European Galactosemia Network (GalNet) (for which Professor Treacy is the Co-chair) and the development of an international registry, and she is now starting a new collaboration with Dr Peter Doran and other European investigators in this network to research new therapies for galactosemia.

The HRB-funded research has contributed to revised international guidelines for galactosemia.

Focus area 2

Support healthcare interventions

2018 Objectives:

- Support the design, conduct, and evaluation of intervention studies.
- Facilitate the coordination, enabling mechanisms, and national/international collaborations that improve the volume, quality, relevance, and impact of trials and intervention studies in Ireland.

Key items delivered in 2018

- Made 15 awards worth €11.9 million in this focus area.
- Invested €7.6 million in 11 Definitive Interventions and Feasibility Awards (DIFAs). These awards are designed to boost academic-led clinical trials and interventions and create a pipeline of research that can go on to become full-scale interventions in the future.
- Made 11 awards jointly with the Health and Social Care Division of the Public Health Agency in Northern Ireland under the European Commission's INTERREG VA call for cross-border healthcare intervention trials.
- Made a further Opportunity-Led Funding Award in the area of stroke prevention with a value of €600,000 arising from the INTERREG VA programme, funded jointly with the Health

and Social Care Division of the Public Health Agency in Northern Ireland.

- Provided €187,000 over two years to support the activities of the Irish Research Nurses Network, a key group in enabling clinical trials in Ireland.
- Completed interim reviews of the HRB's four Clinical Trial Networks – perinatal health, primary care, critical care, and stroke – that received funding in 2014. These are substantial exercises in award oversight to help ensure that such a major investment (almost €9.8 million) remains on track and delivers value for money.

€11.9m

Made 15 awards,
worth €11.9m, in this
focus area.

Case Study 3:

Contributing to National Clinical Guidelines for type 1 diabetes



This is a concrete example of the HRB delivering on one of its strategic aims, namely, to help policy-makers, service planners, and providers to make evidence-informed decisions.

The HRB Collaboration in Ireland for Clinical Effectiveness Reviews (HRB-CICER) is a multidisciplinary research team supported by staff from the Health Information and Quality Authority (HIQA), the Royal College of Surgeons in Ireland (RCSI), and national and international clinical and methodological experts.

It was established to deliver the systematic clinical effectiveness and economic literature reviews and the budget impact analysis needed for National Clinical Effectiveness Committee-prioritised guidelines.

The team collaborates closely with Guideline Development Groups to ensure that the HRB-CICER's work can be used to inform evidence-based recommendations. HRB-CICER was awarded €2.25 million

in funding over the five-year period from 2017 to 2021.

In 2018, HRB-CICER provided two reviews that contributed to new National Clinical Guidelines for *Adult type 1 diabetes mellitus (National Clinical Guideline No. 17)*. This was published in June 2018 by the National Clinical Effectiveness Committee. These reviews were published as two annexes to the main report, 'Annex 1 - Economic evidence review' and 'Annex 2 - Budget impact analysis'.

Some of the key changes to service delivery arising from the report will include:

1. The national provision of a high-quality structured patient education programme to empower people with type 1 diabetes to effectively manage their

- diabetes and the external factors that can influence their blood glucose levels, such as exercise and stress
2. The standardisation of patient follow-up in diabetes clinics where patients are recalled at least every six months, and
3. Short courses for all staff who deliver care to people with type 1 diabetes in Ireland.

According to Dr Mairead O'Driscoll, Director of Research Strategy and Funding, HRB:

'This is a concrete example of the HRB delivering on one of its strategic aims, namely, to help policy-makers, service planners, and providers to make evidence-informed decisions'.

Case Study 4:

The HRB to fund Irish membership of the European Clinical Research Infrastructure Network

In 2018, the HRB, with the support of the Department of Health, announced that it would fund Irish membership of the European Clinical Research Infrastructure Network (ECRIN), a European Research Infrastructure Consortium (ERIC). This will increase access for Irish patients to multinational clinical trials. It will also make it easier for Irish researchers to extend their own trials internationally, and will help improve patient safety and quality of care.

The HRB had engaged with ECRIN for many years and recommended Irish membership to the Department of Health. The Department of Health made the case to the Irish Government, which in turn gave the go-ahead for the HRB to advance Irish membership. The HRB began the formal application process in 2018 and Ireland's membership was ratified in late 2018.

Speaking at the time of the announcement, Dr Darrin Morrissey, Chief Executive, HRB said:

'We welcome this Government decision which will advance Irish health research and

patient care. It will introduce benefits for patients, such as access to trials and availability of new treatments. It will also give researchers in Ireland access to a portfolio of tools and services across Europe to improve the delivery of trials, and make it easier to extend their own trials internationally'.

Irish researchers will have full access to all the tools and services within ECRIN, such as trial preparation, protocol review, trial management, data centre certification, capacity-building projects, and ECRIN-supported trials.

Minister for Health, Simon Harris, TD, added:

'Clinical trials are at the heart of improved prevention, diagnosis and treatment of diseases. While some trials can be conducted on a national level, many trials require access to large populations of patients and collaborations across centres and countries. Today's decision represents an important development for current and future patients in Ireland and enhances Ireland's reputation as a place to conduct industry trials. This will drive

change and improve patient outcomes but also advance innovation, productivity and competitiveness'.



'This will drive change and improve patient outcomes but also advance innovation, productivity and competitiveness'.

Focus area 3

Address the research needs of the Irish health and social care system

2018 Objectives:

- Support research that addresses questions of national relevance for clinical and population health practice and for health services management, as well as the translation of research results into policy and/or practice.
- Provide high-quality, timely, and relevant data for policy, service planning, and research through the HRB's National Health Information Systems (NHIS).
- Promote and support evidence synthesis and knowledge translation activities in order to help policy-makers, service planners, and providers make evidence-informed decisions.

Key items delivered in 2018

- Made 34 awards, worth €5.8m, in this focus area. It included:
 - > Investing €1.3 million in our Applied Partnership Awards scheme. A total of seven awards were made in 2018, with co-funding of €240,000 provided by healthcare organisations.
 - > Awarding €2 million to Evidence Synthesis Ireland in order to support capacity building across a broad range of evidence synthesis techniques, including Cochrane systematic reviews. This award is on a cross-border basis, with the Health and Social Care Research and Development Division of the Public Health Agency in Northern Ireland contributing €500,000 of the funding.
- > Conducting an in-depth review of our Research Collaborative in Quality and Patient Safety Awards scheme. This scheme is run jointly with the Health Service Executive (HSE) and the Royal College of Physicians of Ireland (RCPI).
- > Awarding €1.5 million to Wave 4 of the Intellectual Disability Supplement (IDS) of The Irish Longitudinal Study on Ageing (TILDA).
- > Supporting 25 new awards worth almost €1 million under the Knowledge Exchange and Dissemination Scheme.
- Participated as a partner in a successful EU Horizon 2020 Science with and for Society (SWAFS) project to develop standard operating procedures for research integrity. HRB involvement will ensure that Ireland can influence the broader policy agenda in Europe in this area while at the same time ensuring coordination of Irish research integrity practices.
- Published three HRB NHIS annual reports.
- Published five national bulletins, generated

25

new awards supported under the Knowledge Exchange and Dissemination Scheme.

five infographics, and produced 45 quarterly performance indicator reports to provide clear and concise information to assist policy-makers and service planners.

- Completed and submitted nine peer-reviewed journal articles based on NHIS data. Seven were published in 2018, with the remaining two expected to be published during 2019.
- Trained 272 people from approximately 100 services on the LINK system for the National Drug Treatment Reporting System.
- Collected data on behalf of the Road Safety Authority, the National Directorate Fire and Emergency Management, and the National Office for Suicide Prevention.
- The HRB and the Department of Health's Drugs Policy and Social Inclusion Unit hosted the first annual National Drugs Forum in the Aviva Stadium in November 2018.
- Published three evidence reviews, and completed six evidence briefs and two literature searches.
- Published four issues of Drugnet Ireland.
- The HRB's National Drugs Library (drugsandalcohol.ie) updated five fact sheets, made functional and visual improvements to its interactive treatment tables, and ensured that all drugs publications released in 2018 were made available in the electronic public

library. The website had 190,610 user sessions during 2018 and 5,710 profile visits to its Twitter feed.

- Provided data on the drug situation in Ireland to inform European monitoring and trends in line with contractual commitments to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA).

The HRB's National Health Information Systems (NHIS) provide high-quality, timely and relevant data for policy, service planning and research.

Case Study 5:

The HRB and the Department of Health's Drugs Policy and Social Inclusion Unit hosted the first annual National Drugs Forum



More than 200 people attended, including practitioners in drug treatment, prevention, and harm reduction services, and local drugs and alcohol taskforces, in addition to health policy-makers.

The theme for the Forum was 'Working better together by building communities of practice'. The event aimed to strengthen the capacity of existing communities of practice and to provide examples for collaborative working across the statutory, community, and voluntary sectors.

Opening the Forum, Minister for Health Promotion and the National Drugs Strategy, Catherine Byrne, TD said:

'Implementing the actions from the National Drugs Strategy requires collaboration, and communities of practice are a great example of this partnership approach. Delegates here today will have the opportunity to share experiences and work together to shape policy going forward'.

Keynote presentations were delivered by two international experts: Dr Karen Minyard from the Georgia Health Policy Center at Georgia State University, who spoke about the centre's recent evidence review on dual diagnosis and described how communities of practices can be effective vehicles for transferring evidence into practical work; and Professor Harry Sumnall of Liverpool John Moores University, who examined

the evidence base for interventions in the prevention and social reintegration field. Both are internationally renowned scholars with vast experience in policy development and knowledge transfer.

The keynotes were followed by four parallel workshops about:

- Supporting prevention work in the community
- Dual diagnosis: using partnership and peer support as resources in treatment
- The role of social reintegration in recovery, and
- Harm reduction services: engaging with people who use drugs.

Case Study 6:

Secondary use of HRB data – adding extra value and fostering collaboration between the HRB and other government agencies



The HRB's information systems provide primary data and statistics on psychiatric admissions, drug and alcohol treatment, and drug-related deaths, in addition to information about use and future demand for disability services.

'These datasets are rich veins of information with so much potential to inform other areas of health and social care,' says Dr Hamish Sinclair, Director of Health Information and Evidence at the HRB.

'For instance, data from our National Intellectual Disability Database contributed to a research paper in the *Journal of Applied Research in Intellectual Disabilities*. The paper's title, 'Irish persons with intellectual disability moving from family care to residential accommodation in a period of austerity' tells you everything you need to know about the wider social context and the policy conversations that our data can influence'.

'Another example of a research paper published using HRB data in 2018 was 'Trends in injector deaths in Ireland, as recorded

by the National Drug-Related Deaths Index, 1998–2014'.

'This study published in the *Journal of Studies on Alcohol and Drugs* was the first to describe the trends in deaths among drug users who injected at or around the time of their death in Ireland between 1998 and 2014. The analysis provided empirical evidence that can be used by policy-makers to support the ongoing improvement of drug treatment services, harm reduction initiatives, and overdose prevention strategies for people who inject drugs'.

HRB data can also be used by other State agencies to help them deliver on their strategic aims.

Dr Sarah Craig, Head of National Health Information Systems at the HRB, adds:

'In 2018 the HRB began collaborating with the Office of the State Pathologist and the State Laboratory to undertake secondary analysis of existing National Drug-Related Deaths Index data. The two specific areas of research examined were cocaine-related

deaths and Pregabalin-related deaths.

'By working with experts in the fields of pathology and toxicology we are enhancing the use of existing data and contributing to research in the area of drug-related deaths'.

'Another new 2018 collaboration was with the Economic and Social Research Institute (ESRI). The HRB will provide disability and psychiatric in-patient admissions data for their projection model of healthcare utilisation – the Hippocrates model – which they developed last year.

'From the data provided by the HRB, population projections, by age and sex to 2030, will be developed and will form the basis for the projection of health and social care demand and expenditure to 2030'.

HRB data can also be used by other State agencies to help them deliver on their strategic aims.

Enabler A

Support exceptional researchers and leaders

€11m

Made 87 awards,
worth €11m
under Enabler A.

2018 Objectives:

- Attract the best people to health research by supporting excellent PhD training programmes.
- Provide opportunities for career development for postdoctoral researchers and emerging investigators.
- Work with higher education institutions, Hospital Groups, and the HSE to identify, develop, and support leaders in health research.
- Work with national and international partners to facilitate training and exchange opportunities that address skills gaps.

Key items delivered in 2018

- Made 87 awards worth €11 million under Enabler A, in line with our *Health Research Careers Framework and action plan 2016–2020*, published in 2016.
- Supported 67 Summer Student Scholarships with funding of €200,000.
- The HRB Irish Clinical Academic Training (ICAT) Programme (established with Wellcome) recruited the second cohort of new doctors to participate in a PhD training programme for clinicians. The scheme will train 40 clinicians between 2016 and 2021.
- Invested €5.8 million in four awards under

the new Collaborative Doctoral Awards in Patient-focused Research scheme for thematic cohorts integrating health and social care professionals with academic health researchers.

- The HRB-funded Structured Population and Health-services Research Education (SPHeRE) programme took in the final of five cohorts of 10 PhD students in population health and health services research (six HRB-funded and four self-funded). A further €2.5 million investment for the next three cohorts of PhD students was approved.
- Awarded €2.5 million for 10 new Applying Research into Policy and Practice Postdoctoral Fellowships and one Cancer Prevention Fellowship.
- Provided an opportunity for four HRB researchers to take up placements of three to six months in order to develop collaborations with US colleagues through the Fulbright-HRB Health Impact Awards.
- Launched the next round of the Emerging Investigator Awards, with awards to be made in 2019.
- Completed interim reviews of four Research Leader Awards that received funding in 2015. These are substantial exercises in award oversight in order to help ensure that such a major investment (in excess of €5.7 million) remains on track and delivers value for money.

Case Study 7:

€5.8 million for four new health researcher training programmes

The four new programmes will train 18 people over the next five years. They span the areas of youth mental health, neonatal brain injury, care for older people, and managing multimorbidity in primary care settings.

The training programmes will equip health researchers with an extensive skill set that will allow them to go on and integrate research with patient care in their specialist clinical areas.

I am confident that these new researcher training programmes are going to make a long-term impact on patient care', said Dr Mairead O'Driscoll, HRB Director of Research Strategy and Funding'.

According to Dr Annalisa Montesanti, Programme Manager, HRB:

'These four successful awards were selected on the basis that each one brings a coherent, structured approach to training health researchers to doctoral level in their respective fields.

'They all had strong links to

the delivery of care and they leveraged existing HRB-funded programmes and centres. They also involved cross-disciplinary and inter-sectorial collaborations, and they placed important emphasis on public and patient involvement'.

The Collaborative Doctoral Awards in Patient-focused Research scheme was developed as part of the Health Research Careers portfolio. This portfolio aims to provide a coordinated approach to training and supporting health-related researchers and health professionals at every career stage. The four schemes were:

1. Doctoral program in youth mental health leadership (The YouLead Program)

Principal investigator: Professor Gary Donohoe, National University of Ireland (NUI) Galway

Award amount: €1.5 million

2. Neonatal Brain Injury Consortium Ireland

Principal investigator: Professor Eleanor Molloy,

Trinity College Dublin (TCD)

Award amount: €1.5 million

3. 'Right Care': a programme of research to enhance safe and appropriate care for older patients in Ireland

Principal investigator: Professor Tom Fahey, RCSI

Award amount: €1.4 million

4. Managing complex multimorbidity in primary care: a multidisciplinary doctoral training programme

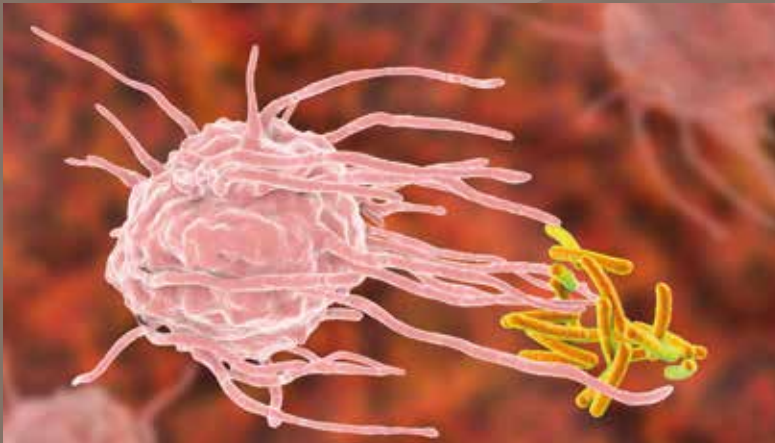
Principal investigator: Professor Susan Smith, RCSI

Award amount: €1.4 million

These four successful awards were selected on the basis that each one brings a coherent, structured approach to training health researchers to doctoral level in their respective fields.

Case Study 8:

Immune cells in smokers' lungs 'too exhausted' to fight tuberculosis



'Bio energetic exhaustion' is the term coined by HRB-funded researchers at TCD and St. James's Hospital in new research to explain why immune cells in smokers do not work as they should.

Dr Laura Gleeson, a HRB-funded Research Fellow at St. James's Hospital, explains:

'In healthy people, immune cells in the lungs called macrophages switch on a special energy pathway when they encounter invading bacteria like tuberculosis (TB). This switch seems to be a vital cog in allowing the body to use its own defences to fight and kill the bug.

'In this research project we compared these macrophages in smokers' lungs to healthy

people and we found that smokers' immune cells had almost no energy available to fight infection. It was as if the smokers had 'exhausted macrophages' and this led to the TB being able to establish itself in their lungs'.

Professor Joe Keane, a HRB Clinician Scientist and a senior author on the paper, continues:

'This is a really exciting finding because if we can now find a way to boost smokers' immune systems so they don't have 'exhausted macrophages', then their immune system can get on with the job of eradicating the infection itself.

'This personalised medicine, or immunotherapy approach, circumvents the need to develop new drugs to kill the

bacteria, which we know from experience, bacteria eventually develop resistance to'.

The paper, 'Cigarette Smoking Impairs the Bioenergetic Immune Response to *Mycobacterium tuberculosis* Infection', was published in the *American Journal of Respiratory Cell and Molecular Biology* on 1 November 2018.

Along with the HRB funding, the research was supported by the Royal City of Dublin Hospital Trust.

Enabler B

Build a strong enabling environment

2018 Objectives:

- Work with the Department of Health and key stakeholders to shape the national research agenda in relation to health and social care.
- Provide leadership to shape the review, conduct, and governance of research.
- Contribute to, and benefit from, international developments in policy, regulation, and legislation relevant to health research and healthcare in Ireland.
- Invest in research infrastructure to promote excellence, critical mass, and coordination in order to support HRB strategic focus areas and the wider health community.
- Support Irish health researchers to participate in Horizon 2020 (H2020) and other European research programmes.

Key items delivered in 2018

- Provided €3.4 million in funding to continue the activities of HRB Clinical Research Coordination Ireland (HRB CRCI) for a further three years. This initiative provides coordination, support, and signposting for clinical trial activity in Ireland.
- Commenced two in-depth evaluations of the clinical research infrastructure in Ireland and HRB investment in health research leaders (specifically the Research Leader Awards and Emerging Clinician Scientist Awards) in order to inform future calls in these areas.
- Actively promoted public and patient involvement (PPI) in research. This included:
 - > Working with the five PPI Ignite Awards to coordinate their capacity building for PPI in research in higher education institutions.

- > Delivering a public review process for two schemes in 2018: the Definitive Interventions and Feasibility Awards, and the Applying Research into Policy and Practice Postdoctoral Fellowships.
- > Planning for the ambitious expansion of public reviews in 2019, with full coverage of 144 applications to the Investigator-Led Projects.
- > Having the first PPI members on a selection panel.
- Took a leadership role in Open Science in Ireland with a number of initiatives. This included:
 - > Chairing a revision of the national research integrity policy (Ensuring Integrity in Irish Research) on behalf of the National Forum on Research Integrity.
 - > Launching Ireland's first open research publishing platform, HRB Open Research, in January 2018.
 - > Conducting two training events to raise awareness of FAIR (Findable, Accessible, Interoperable, Reusable) research data.
 - > Jointly chairing the National Open Research Forum (NORF) with the Higher Education Authority (HEA).
 - > Participating in the drafting group for a National Framework on the Transition to an Open Research Environment, with a wide national consultation process.
- Continued to improve HRB grant processes. This included:
 - > Achieving excellent gender balance on:
 - HRB selection panels, with 53% female and 47% male representation, and

144

Piloting a public review process in 144 funding applications to the Investigator-Led Projects scheme.

- Applicants' success rates, with 29% of female applicants and 28% of male applicants successful.
- > Being an active member of a global forum for funders under the banner of 'Ensuring Value in Research'. The Forum allows members to develop best practice in a variety of areas, from the selection of call topics to the reporting of outputs and outcomes.
- Published a report entitled *Health Research in Ireland: A study of activity from 2011 to 2015 using the Health Research Classification System*. This analysed health funding data from seven Irish agencies and two Government Departments in terms of research activity type and disease areas supported.
- Worked on an initiative to align research data management policy across Europe as part of the Science Europe Working Group on Research Data.
- Confirmed Irish membership of the EU Public Health Programme through the Department of Health, affording Irish researchers the opportunity to undertake policy- and practice-relevant health research.
- Chaired the International Consortium for Personalised Medicine (ICPerMed), a consortium of EU funding bodies established by the European Commission under the H2020 programme.
- Contributed to the health perspective in *Ireland's Preliminary Views on the 9th EU Framework Programme for Research and Innovation*.
- Supported Irish researchers to compete for EU funding:
 - > Irish researchers leveraged €7.1 million in funding from H2020 programmes.
 - > Seventeen Irish projects successfully competed for funding in the H2020 Health Challenge, with Irish researchers as partners. Highlights include:
 - The HRB being a successful partner in two projects, one an ERA-Net project to support the Joint Programme in Neurodegenerative Diseases Research (JPND) strategic plan, and the other in a European Joint Programme Co-fund on Rare Diseases.
 - Irish researchers being partners in 3 of the 10 projects funded in the area of palliative care, amounting to €1.4 million in funding for Ireland.
 - Geraldine Leader of NUI Galway drawing down more than €1.6 million for a project on an integrated multi-omic systems biology approach to identify biomarkers for personalised treatment and primary prevention of autism spectrum disorder.
 - The HSE being successful as a partner with the Irish Centre for Emergency Management in a project on assessing and reducing cyber risks in hospitals and care centres in order to protect privacy, data, and infrastructures.
 - Five Irish companies receiving almost €1.6 million in funding.

Case Study 9:

Ireland invested €752 million in health-related research between 2011 and 2015

The HRB published the first Irish report on national expenditure on health research in Ireland for the five years from 2011 to 2015.

According to Dr Maura Hiney, Head of Post-Award and Evaluation, HRB and lead author of the report:

‘We now have a baseline for future trend analysis of Irish health research investment that allows us to track the effects on spending of changes in Government R&D strategy’.

Seven national funding agencies (Enterprise Ireland (EI), the Environmental Protection Agency (EPA), the HRB, the Irish Research Council (IRC), the Marine Institute (MI), Science Foundation Ireland (SFI), and Teagasc) and two Government Departments (the Department of Agriculture, Food and the Marine (DAFM) and the Department of Children and Youth Affairs (DCYA)) provided data for this analysis.

Dr Darrin Morrissey, Chief Executive at the HRB, says:

‘Ireland makes significant public investments in health research, which deliver substantial societal and economic benefits. Health research attracts funding from many different sources and it is interesting to see how much co-funding non-public partners are contributing to the national public funding pot and who these partners are’.

Key findings

In total, there were 1,513 health research awards, with a value of slightly more than €752 million, made between 2011 and 2015. These awards supported research with many different objectives:

- Expanding our knowledge and understanding of health and disease
- Improving healthcare and services, strengthening the enterprise base
- Building the capacity for and expertise in high-quality health research, and
- Generating the evidence to inform policy and regulation.

Cancer and neoplasms research received the greatest share of health-specific funding (€93.1 million; 21%), and funding was provided

by all participating agencies except the MI. This is in line with results from similar analyses in the United Kingdom and Norway, where cancer and neoplasms research also accounted for the largest proportion of total funding.

Other health-specific health categories in which significant funding was awarded included infection (11%), neurological (11%), oral and gastrointestinal (9%), cardiovascular and stroke (10%), mental health (7%), and reproductive health and childbirth (6%).

Almost one-quarter of all funding €209 million supported the development of the infrastructure, networks, and platforms that enable health-related research.

Co-funding accounted for €100 million of the total pot.



Case Study 10:

HRB supporting success in EU
Horizon 2020 health 2014 – 2018



€60m

In 5 years, Irish researchers
**HAVE SECURED
ALMOST
€60 MILLION.**

1,000

The number of Irish researchers we helped to apply for EU funding (including over 100 coordinators).

Irish researchers secured 2.1% of the overall EU health budget.

2.1%

74

Supporting 74 projects in areas from cancer to big data.

IRISH RESEARCHERS ARE LEADING 8 PROJECTS THAT SPAN



13

COUNTRIES



39

**INSTITUTIONS
AND**



27

**COMPANIES
AND SUPPORTING**



200+

**RESEARCH
POSITIONS.**

Enabler C

Enhance organisational performance

2018 Objectives:

- Ensure a high-performing working environment built on innovation, adaptability, and teamwork.
- Enable transparent and accountable decision-making based on the best possible information.
- Ensure that HRB systems and processes are robust, flexible, and scalable.
- Enhance recognition of the values of health research and the HRB's role nationally and internationally.
- Conducted eight Data Protection Impact Assessments on HRB systems which process personal data.
- Reduced the organisation's fossil fuel use; the HRB is 15% below its Sustainable Energy Authority of Ireland (SEAI) energy consumption target for 2018. The reduction is the aggregation of many small changes that improve energy efficiency.
- Launched a new mobile-optimised and standards-compliant HRB website to get people to the information they need faster.
- Reviewed and enhanced the HRB's business planning and reporting mechanisms in order to meet the operational needs of the HRB staff and Board and the Department of Health, and also in order to improve decision-making and ensure best use of resources.
- Worked to establish a framework for greater employee resilience, employee engagement, and enhanced performance through initiatives such as the HRB's Personal and Organisational Development (POD) programme and a greater emphasis on organisational training initiatives.

Key items delivered in 2018

- Hosted the HRB National Conference 2018: Big data in health, which looked at the challenges and opportunities ahead for Ireland in this area.
- Introduced a new conference and events funding scheme in order to streamline the HRB's approach to sponsorship and create capacity among the health research community to raise awareness, increase engagement, and transfer knowledge.
- Deployed a cloud-based software platform, OneTrust, which provides a centralised dashboard to manage all aspects of the revised General Data Protection Regulation (GDPR), such as cookie compliance, data breach reporting, and subject access request procedures.

Case Study 11:

HRB National Conference 2018 – Big data in health



More than 200 people attended the HRB National Conference 2018: Big data in health on 27 November 2018 in Dublin Castle.

A strong lineup of international and national speakers from diverse backgrounds brought the topic to life. Their contributions informed an insightful discussion, chaired by Miriam O’Callaghan, which looked at balancing big data, big business, and privacy.

As Andre Dekker, Professor of Clinical Data Science at Maastricht University, noted, ‘The barriers to big data are not technical, they are ethical, political or administrative’.

Dr Joel Selanikio, CEO of Magpi and Assistant Professor

of Pediatrics at Georgetown University Hospital, delivered the keynote presentation, ‘Opening our minds to the potential of big data’. Two of the many insights from that presentation were that:

‘The cheap expertise of AI (artificial intelligence) is coming to health and healthcare. This will change clinical practice, and shift more of health – and health research – away from traditional healthcare’.

‘If you want to see what will happen in healthcare in the future, look at what is happening in retail today. People actually have more data on their own personal devices and it is by harnessing this that you will be able to predict what their health needs are in the

same way Amazon can predict what will interest you when you have a profile with them’.

The overriding theme from the speakers was that there are many opportunities to safely harness health data in order to improve health and advance healthcare.

Keynote speakers included:

- Professor Jean-Christophe Desplat, Director, Irish Centre for High-End Computing (ICHEC) and NUI Galway
- Dr Howard Johnson, Clinical Lead of Health Intelligence, HSE
- Professor Andre Dekker, Professor of Clinical Data Science, Maastricht University, and
- Muiris O’Connor, Assistant Secretary, Department of Health

All of the presentations were recorded and are available to watch online on the HRB YouTube channel:

https://www.youtube.com/channel/UCbLSR-mOv2k18sZAb_zLzKA

Case Study 12:

Your data is safe with us



The revised General Data Protection Regulations (GDPR) which came into force during 2018 built upon previous data protection directives with new and stronger rights for individuals.

The HRB carried out a number of actions during 2018 in order to bolster compliance with the new regulation.

These steps included:

- Appointing a Data Protection Officer.
- Partnering with OneTrust, a data privacy management software vendor, which assisted us with our data mapping, cookie compliance, breach reporting, and subject access request procedures.
- Conducting eight Data Protection Impact Assessments on HRB systems

- which process personal data.
- Simulating two cyberattacks on our public-facing LINK and GEMS systems in order to test and verify their security standards.
- Drafting two new GDPR policies for data breaches and data subject access requests.
- Amending three existing policies for data privacy, data retention, and web cookies.
- Updating all of our data processing agreements with our data processors in order to ensure that they too were compliant with the additional obligations of the new GDPR.
- Conducting staff training specifically on handling personal data as per obligations set out in Article 39(a) of the GDPR.
- Adopting a 'data protection by design and data protection by default ethos' into the organisation.

So, whether you are a grant applicant or grant holder, current or former employee, someone accessing our information systems, peer reviewer, contractor, member of the public using our National Drugs Library service, or a member of the public corresponding with us

by phone, e-mail or otherwise, your data is safe with us.

2



Appendices

Appendix A

List of HRB publications in 2018

HRB REPORTS

Daly A and Craig S (2018) *Activities of Irish Psychiatric Units and Hospitals 2017. Main Findings*. HRB Statistics Series 38 Dublin: Health Research Board.

Doyle A and Carew AM (2018) *Annual Report of the National Physical and Sensory Disability Database Committee 2017. Main Findings*. HRB Statistics Series 36. Dublin: Health Research Board.

Health Research Board (2018) *Alcohol Treatment in Ireland 2010 – 2016*. Dublin: Health Research Board.

Health Research Board (2018) *Drug Treatment in Ireland 2010 – 2016*. Dublin: Health Research Board.

Hourigan S, Fanagan S and Kelly C (2018) *Annual Report of the National Intellectual Disability Database Committee 2017. Main Findings*. HRB Statistics Series 37. Dublin: Health Research Board.

Irish Focal Point to the EMCDDA (2018) *Drugnet Ireland*, Issue 64, Winter. Dublin: Health Research Board.

Irish Focal Point to the EMCDDA (2018) *Drugnet Ireland*, Issue 65, Spring. Dublin: Health Research Board.

Irish Focal Point to the EMCDDA (2018) *Drugnet Ireland*, Issue 66, Summer. Dublin: Health Research Board.

Irish Focal Point to the EMCDDA (2018) *Drugnet Ireland*, Issue 67, Autumn. Dublin: Health Research Board.

Irish Focal Point to the EMCDDA (2018) *National Report (2017 data) to the EMCDDA by the Reitox National Focal Point, Ireland: new developments, trends*. Dublin: Health Research Board.

EVIDENCE REVIEWS

Keane M, Coyle C, Farragher L, O’Nolan G, Cannon A and Long J (2018) *Integrated interventions to reduce pressure on acute hospitals. An evidence review*. Dublin: Health Research Board.

McCarron M, Lombard-Vance R, Murphy E, O’Donovan MA, Webb N, Sheaf G, McCallion P, Stancliffe R, Normand C, Smith V and May P (2018) *Quality of life outcomes and costs associated with moving from congregated settings to community living arrangements for people with intellectual disability. An evidence review*. Dublin: Health Research Board.

Mongan D, Farragher L and Long J (2018) *Implementation frameworks for use by health workforce planners. An evidence review*. Dublin: Health Research Board.

PEER-REVIEWED JOURNAL ARTICLES, AUTHORED BY HRB STAFF

Carew AM and Comiskey C (2018) Rising incidence of ageing opioid users within the EU wide treatment demand indicator; The Irish opioid epidemic from 1996 to 2014. *Drug and Alcohol Dependence*, 192: 329–337.

Daly A and Walsh D (2018) Dementia – a major public health problem: the role of in-patient psychiatric facilities. *Irish Journal of Medical Science*, 188(2): 641–647.
<https://doi.org/10.1007/s11845-018-1858-2>

Daly A, Craig S and O’Sullivan E (2018) The Institutional Circuit: Single Homelessness in Ireland. *European Journal of Homelessness*, 12(2): 79–94.

Lynn T, Lynn E, Keenan E and **Lyons S** (2018) Trends in injector deaths in Ireland, as recorded by the National Drug-Related Deaths Index, 1998–2014. *Journal of Studies on Alcohol and Drugs*, 79(2): 286–292.

McConkey R and **Craig S** (2018) Change over 12 years in residential provision for adult persons with intellectual disabilities in Ireland. *Tizard Learning Disability Review*, 23(1): 1–7.
<https://doi.org/10.1108/TLDR-01-2017-0001>

McConkey R, Kelly F, **Craig S** and Keogh F (2018) Irish persons with intellectual disability moving from family care to residential accommodation in a period of austerity. *Journal of Applied Research in Intellectual Disabilities*, 31(5): 833–839.

Van Hout MC, Crowley D, Collins C, Barry A, **Lyons S** and Delargy I (2018) Characteristics of methadone-related overdose deaths and comparisons between those dying on and off opioid agonist treatment (OAT): A national cohort study. *Heroin Addiction and Related Clinical Problems*, 20(N1): 37–44.

Appendix B

List of HRB awards made in 2018 - to Principal Investigators

PROJECTS AND PROGRAMMES						
Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Unlocking the potential of healthcare complaints to improve hospital care (UP-CIC)	National University of Ireland, Galway	Applied Partnership Awards	Dr	Paul	O'Connor	€20,454.00
Co-producing health and well-being in partnership with patients, families and communities: The role of the epilepsy patient portal	Royal College of Surgeons in Ireland	Applied Partnership Awards	Ms	Mary	Fitzsimons	€259,613.00
Enhancing existing formal home support to improve and maintain functional status in older adults: A feasibility study on the implementation of the care to move (CTM) programme	Royal College of Surgeons in Ireland	Applied Partnership Awards	Professor	Frances	Horgan	€119,953.00
Good vigilance practice in pregnancy: a multistakeholder approach to optimising the effectiveness of risk minimisation measures to prevent harms from teratogenic medicines	Royal College of Surgeons in Ireland	Applied Partnership Awards	Professor	Kathleen	Bennett	€119,825.00
Loneliness and health: the moderating role of befriending services	Trinity College Dublin	Applied Partnership Awards	Dr	Joanna	McHugh Power	€159,033.00
Premature ageing in long-term homeless adults (PATH)	Trinity College Dublin	Applied Partnership Awards	Dr	Cliona	Ni Cheallaigh	€199,542.00
I-PARC (Ireland's physical activity research collaboration): bridging the research to action gap to support the implementation of the National Physical Activity Plan	University of Limerick	Applied Partnership Awards	Professor	Catherine	Woods	€238,076.00

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
HRB capacity building for evidence synthesis	National University of Ireland, Galway	Capacity Building for Evidence Synthesis	Professor	Declan	Devane	€1,999,813.00
Membrane sweeping for induction of labour: The MILO Study	National University of Ireland, Galway	Definitive Intervention and Feasibility Awards	Professor	Declan	Devane	€374,240.00
Feasibility and preliminary efficacy study of an online pain management programme for children undergoing major orthopaedic surgery: iCanCope post-op surgery	National University of Ireland, Galway	Definitive Intervention and Feasibility Awards	Professor	Brian	McGuire	€310,741.00
A cognitive occupation-based programme for people with multiple sclerosis – a cluster randomised pilot trial to improve cognition and daily functioning for people with multiple sclerosis	National University of Ireland, Galway	Definitive Intervention and Feasibility Awards	Dr	Sinead	Hynes	€376,444.00
Detection of the EGFR-T790M mutation in exhaled breath condensate	Royal College of Surgeons in Ireland	Definitive Intervention and Feasibility Awards	Professor	Bryan	Hennessy	€998,863.00
Rehabilitation strategies following oesophagogastric and hepatopancreaticobiliary cancer	Trinity College Dublin	Definitive Intervention and Feasibility Awards	Professor	Juliette	Hussey	€934,859.00
Ketamine as an adjunctive therapy for major depression – a randomised controlled trial	Trinity College Dublin	Definitive Intervention and Feasibility Awards	Professor	Declan	McLoughlin	€884,809.00
Digital fetal scalp stimulation (dFSS) versus fetal blood sampling (FBS) to assess fetal wellbeing in labour – a multi-centre randomised controlled trial	Trinity College Dublin	Definitive Intervention and Feasibility Awards	Professor	Deirdre	Murphy	€998,156.00

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Colchine for prevention of vascular inflammation in non-cardioembolic stroke – a randomised clinical trial of low-dose colchicine for secondary prevention of stroke. European and Canadian extension.	University College Dublin	Definitive Intervention and Feasibility Awards	Professor	Peter J	Kelly	€999,254.00
A prospective, multicentre, randomised, double-blind placebo-controlled, phase III trial of epoetin alfa vs. placebo in critically ill trauma patients	University College Dublin	Definitive Intervention and Feasibility Awards	Professor	Alistair	Nichol	€999,994.00
A physiotherapist-led intervention to promote physical activity in rheumatoid arthritis – a pilot study	University of Limerick	Definitive Intervention and Feasibility Awards	Professor	Norelee	Kennedy	€312,846.00
Development and evaluation of an adaptive mobile health physical activity intervention post-stroke: a sequential multiple assignment randomised trial	University of Limerick	Definitive Intervention and Feasibility Awards	Dr	Sara	Hayes	€377,515.00
The intellectual disability supplement to the Irish longitudinal study on ageing (TILDA): waves 3 and 4	Trinity College Dublin	Intellectual Disability Supplement to TILDA	Professor	Mary	McCarron	€1,500,000.00
Intensive care airway and lung microbiome network ICALM network	Trinity College Dublin	Joint Programming Initiative in Antimicrobial Resistance	Dr	Ignacio	Martin-Loeches	€50,000.00
Control of neuronal proteostasis by stress-induced transfer RNA fragments ('tiRNA') as a common stress pathway across neurodegenerative disorders	Royal College of Surgeons in Ireland	Joint Programming Initiative in Neurodegenerative Diseases	Professor	Jochen	Prehn	€135,500.00
European eHealth care model for rare neurodegenerative diseases	Trinity College Dublin	Joint Programming Initiative in Neurodegenerative Diseases	Dr	Jennifer	Hoblyn	€1,979,110.00

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Scaling up the family carer decision support intervention: a transnational effectiveness-implementation evaluation	University College Cork	Joint Programming Initiative in Neurodegenerative Diseases	Dr	Nicola	Cornally	€1,428,798.00
Integrated Parkinson's care networks: addressing complex care in Parkinson's disease in contemporary society	University College Dublin	Joint Programming Initiative in Neurodegenerative Diseases	Professor	Tim	Lynch	€1,512,325.00
Multi-domain lifestyle targets for improving prognosis in Huntington's disease	University College Dublin	Joint Programming Initiative in Neurodegenerative Diseases	Dr	Madeleine	Lowery	€2,057,696.00
Co-designing, pre-testing and refining an intervention programme to support parent-adolescent communication about shared self-management responsibilities in type I diabetes	Dublin City University	Knowledge Exchange and Dissemination Scheme	Dr	Veronica	Lambert	€32,981.00
A patient education programme in health research and innovation	IPPOSI	Knowledge Exchange and Dissemination Scheme	Dr	Derick	Mitchell	€31,820.00
Citizen science: the people's trial	National University of Ireland, Galway	Knowledge Exchange and Dissemination Scheme	Professor	Declan	Devane	€59,984.00
"Let's talk about" series	National University of Ireland, Galway	Knowledge Exchange and Dissemination Scheme	Professor	Eamon	O'Shea	€59,742.00
Using visual media to communicate complex information	National University of Ireland, Galway	Knowledge Exchange and Dissemination Scheme	Professor	Eamon	O'Shea	€23,000.00
Piloting the community engaged scholars programme in Ireland	National University of Ireland, Galway	Knowledge Exchange and Dissemination Scheme	Professor	Sean	Dinneen	€34,950.00

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
The patient is part of the answer – don't leave us out in the cold!	National University of Ireland, Galway	Knowledge Exchange and Dissemination Scheme	Professor	Andrew	Murphy	€59,981.00
Development of book about mental health problems for children and adolescents	Royal College of Surgeons in Ireland	Knowledge Exchange and Dissemination Scheme	Professor	David	Cotter	€32,625.00
Medtrack KEDS	Royal College of Surgeons in Ireland	Knowledge Exchange and Dissemination Scheme	Professor	Ruairi	Brugha	€32,946.00
LoVIC-Kids: Improving public awareness of abnormal bleeding symptoms	Royal College of Surgeons in Ireland	Knowledge Exchange and Dissemination Scheme	Professor	James	O'Donnell	€36,875.00
The breakfast club	Royal College of Surgeons in Ireland	Knowledge Exchange and Dissemination Scheme	Professor	Fionnuala	Breathnach	€57,355.00
Rheumatoid arthritis patient awareness initiative (RA-PAIN)	Trinity College Dublin	Knowledge Exchange and Dissemination Scheme	Professor	Ursula	Fearon	€31,160.00
Using photovoice to enhance knowledge exchange and dissemination	Trinity College Dublin	Knowledge Exchange and Dissemination Scheme	Professor	Agnes	Higgins	€23,999.00
Promoting education and research knowledge (PERK)	Trinity College Dublin	Knowledge Exchange and Dissemination Scheme	Dr	Margaret	Dunne	€36,968.00
Factors influencing decision-making for caesarean section	Trinity College Dublin	Knowledge Exchange and Dissemination Scheme	Ms	Sunita	Panda	€25,483.00
Vaccination: knowledge is power	Trinity College Dublin	Knowledge Exchange and Dissemination Scheme	Dr	Rachel	McLoughlin	€59,932.00
Postnatal mental health partnership	Trinity College Dublin	Knowledge Exchange and Dissemination Scheme	Ms	Jill	Atkinson	€25,529.00

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Working with the research community: training and a toolkit for patient and members of the public	Trinity College Dublin	Knowledge Exchange and Dissemination Scheme	Professor	Mary	McCarron	€34,995.00
How to use TILDA data – webinar, seminar and workshop series	Trinity College Dublin	Knowledge Exchange and Dissemination Scheme	Professor	Rose Anne	Kenny	€59,942.00
Self-harm and suicide awareness – SHARE	University College Cork	Knowledge Exchange and Dissemination Scheme	Professor	Ella	Arensman	€59,442.00
What the researcher and the dentist want to share, supporting knowledge dissemination	University College Cork	Knowledge Exchange and Dissemination Scheme	Professor	Helen	Whelton	€59,054.00
Developing an on-line course for first-time mothers: ‘pathway to birth’	University College Dublin	Knowledge Exchange and Dissemination Scheme	Professor	Cecily	Begley	€55,863.00
Maximising collaboration to expedite positive change in the assessment process that determines physiotherapy students' readiness for independent practice	University of Limerick	Knowledge Exchange and Dissemination Scheme	Ms	Anne	O'Connor	€17,602.00
Collecting and using data about ethnicity in healthcare – a drama	University of Limerick	Knowledge Exchange and Dissemination Scheme	Professor	Anne	MacFarlane	€27,113.00
Health and social inequalities in the Mid-West	University of Limerick	Knowledge Exchange and Dissemination Scheme	Professor	Cathal	Walsh	€11,964.00
Autophagy induction as a novel therapeutic strategy for MSD	Fondazione Telethon, Italy	MRCG-HRB Joint Funding Scheme	Professor	Andrea	Ballabio	€98,900.00
Towards novel anti-infectives with enhanced wound-healing for diabetic foot infections: Co2-releasing star-shaped microbicidal polymers	Royal College of Surgeons in Ireland	MRCG-HRB Joint Funding Scheme	Dr	Deirdre	Fitzgerald Hughes	€207,328.00

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
The role of sialylated-alpha-1 antitrypsin in resolution of acute and chronic inflammation	Royal College of Surgeons in Ireland	MRCG-HRB Joint Funding Scheme	Dr	Emer P	Reeves	€319,320.00
The microbiome as an environmental trigger for autoimmune epilepsy (MICA)	Royal College of Surgeons in Ireland	MRCG-HRB Joint Funding Scheme	Dr	Gianpiero	Cavalleri	€171,347.00
Incorporation of sensor technology to provide clinical meaningfulness for existing standardised measurement scales in amyotrophic lateral sclerosis	TCD/ Beaumont Hospital	MRCG-HRB Joint Funding Scheme	Dr	Deirdre	Murray	€213,894.00
Novel neurophysical biomarkers of heterogenous network degeneration in motor neurone disease for quantifying the progression and outcome in clinical trials	Trinity College Dublin	MRCG-HRB Joint Funding Scheme	Dr	Bahman	Nasserole-slami	€341,617.00
Elucidation of the role of SARM1 in retinal homeostasis and oxidative stress-induced retinal degeneration	Trinity College Dublin	MRCG-HRB Joint Funding Scheme	Dr	Sarah	Doyle	€341,781.00
Gold-drug: targeting a novel dual inhibitor drug with gold nanoparticles for improving radiation response in oesophageal cancer	Trinity College Dublin	MRCG-HRB Joint Funding Scheme	Professor	Jacintha	O'Sullivan	€331,856.00
Evaluating a novel macrolide-based early intervention in the clinical management of chronic infections and inflammation in cystic fibrosis	University College Cork	MRCG-HRB Joint Funding Scheme	Professor	Fergal	O'Gara	€115,000.00
Evaluation of the role of MxA and isgylation in chemosensitivity in oesophageal cancer	University College Cork	MRCG-HRB Joint Funding Scheme	Dr	Sharon	McKenna	€155,714.00

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Combining electrochemotherapy with a toll-like receptor agonist for the treatment of lung cancer	University College Cork	MRCG-HRB Joint Funding Scheme	Dr	Patrick	Forde	€158,293.00
Compound library screening in a zebrafish model of MSD to identify novel therapeutic compounds	University of Cambridge	MRCG-HRB Joint Funding Scheme	Professor	David C	Rubinsztein	€105,705.00
Toxicology study to support a phase I/II gene therapy clinical trial for multiple sulfatase deficiency	University of Texas South-western Medical Center	MRCG-HRB Joint Funding Scheme	Professor	Steven James	Gray	€297,003.91
Molecular memory in human AMD1 gene: mechanisms and functions	National University of Ireland, Galway	SFI-HRB-Wellcome Research Partnership	Dr	Pavel	Baranov	€1,283,853.00
The mechanisms that induce dedifferentiation to drive regeneration in the absence of stem cells	National University of Ireland, Galway	SFI-HRB-Wellcome Research Partnership	Professor	Uri	Frank	€1,079,838.00
Towards a unifying mechanistic picture of glycation-induced crosslinking of protein	National University of Ireland, Galway	SFI-HRB-Wellcome Research Partnership	Dr	Eddie	Myers	€112,143.00
Development of a method for clinical interpretation of cancer genomes	Royal College of Surgeons in Ireland	SFI-HRB-Wellcome Research Partnership	Dr	Simon	Furney	€108,860.00
Label-free monitoring of fibrinogen levels in human blood plasma using asymmetric imides	Dublin Institute of Technology	Ulysses Research Visits	Dr	Jennifer	McIntyre	€2,500.00
Manganese-enhanced MRI as an early technique for lung cancer	Trinity College Dublin	Ulysses Research Visits	Dr	Oliviero	Gobbo	€2,500.00

LEADERSHIP AND CAPACITY BUILDING

Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Amount
University College Dublin	Applied Research into Policy and Practice Postdoc Fellowships	Dr	Cailbhe	Doherty	€222,243.00
University College Dublin	Applied Research into Policy and Practice Postdoc Fellowships	Dr	Emma	Nicholson	€210,621.00
University College Dublin	Applied Research into Policy and Practice Postdoc Fellowships	Dr	Silvia	Bel-Serrat	€215,554.00
Trinity College Dublin	Applied Research into Policy and Practice Postdoc Fellowships	Dr	Peter	May	€222,998.00
University College Cork	Applied Research into Policy and Practice Postdoc Fellowships	Dr	Elaine	McMahon	€216,106.00
University College Cork	Applied Research into Policy and Practice Postdoc Fellowships	Dr	Karen	Matvienko-Sikar	€247,446.00
Trinity College Dublin	Applied Research into Policy and Practice Postdoc Fellowships	Dr	Lorna	Roe	€229,466.00
Trinity College Dublin	Applied Research into Policy and Practice Postdoc Fellowships	Dr	Christine	White	€243,711.00
Trinity College Dublin	Applied Research into Policy and Practice Postdoc Fellowships	Dr	Claire	Donohoe	€261,702.00
Trinity College Dublin	Applied Research into Policy and Practice Postdoc Fellowships	Dr	Donal	Sexton	€134,438.00
NUI Galway	Collaborative Doctoral Awards	Professor	Gary	Donohoe	€1,499,930.00
Royal College of Surgeons in Ireland	Collaborative Doctoral Awards	Professor	Susan	Smith	€1,416,644.00
Royal College of Surgeons in Ireland	Collaborative Doctoral Awards	Professor	Tom	Fahey	€1,384,766.00
Trinity College Dublin	Collaborative Doctoral Awards	Professor	Eleanor	Molloy	€1,493,079.00
University College Dublin	Cancer Prevention Fellowship Programme	Dr	Naoise	Synnott	€272,710.00
Royal College of Surgeons in Ireland	PhD Scholars Programmes	Professor	Anne	Hickey	€1,249,999.00
University College Dublin	Fulbright-HRB Health Impact Awards	Dr	Aoife	DeBrun	€13,000.00
Royal College of Surgeons in Ireland	Fulbright-HRB Health Impact Awards	Ms	Michelle	Flood	€13,000.00
Maynooth University	Fulbright-HRB Health Impact Awards	Dr	Tanya	Cassidy	€13,000.00

INFRASTRUCTURE AND NETWORKS

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total Awarded
CONVINCE (Colchicine for prevention of vascular inflammation in non-cardioembolic stroke) – a randomised clinical trial of low-dose colchicine for secondary prevention of stroke. (Border and Northern Ireland Extension)	Mater University Hospital	Opportunity-Led Funding	Professor	Peter J	Kelly	€611,474.00
HRB-Clinical Research Coordination Ireland phase II programme	Molecular Medicine Ireland	Clinical Research Coordination Ireland	Professor	Joseph	Eustace	€3,410,000.00
Irish research nurses network grant	Royal College of Surgeons in Ireland	Irish Research Nurses Network	Ms.	Deirdre	Hyland	€186,819.00
Cancer Trials Ireland transitional funding	Irish Clinical Oncology Research Group Limited	Cancer Trials Ireland	Professor	Linda	Coate	€3,123,057.00
Cancer Trials Ireland statistical and data management services	National University of Ireland, Galway	Cancer Trials Ireland SDM	Professor	Martin	O'Donnell	€414,225.00

Appendix C

HRB Co-funded awards				
Scheme	Cofunding partner	Co-funding allocation	Total award	HRB share
Applied Partnership Awards	Co-funding partners from Irish health sector organisations	€241,901.00	€1,301,496.00	€1,059,595.00
Cancer Prevention Fellowship Programme	National Cancer Institute, USA	€191,100.00	€272,710.00	€81,610.00
Capacity Building for Evidence Synthesis	Public Health Agency, Research & Development Northern Ireland	€500,000.00	€1,999,813.00	€1,499,813.00
Fulbright-HRB Health Impact Awards	Fulbright Foundation	€9,000.00	€39,000.00	€30,000.00
Joint Programming Initiative in Neurodegenerative Diseases	JPND funding partners	€5,984,504.00	€7,113,429.00	€1,128,925.00
MRCG-HRB Joint Funding Scheme	Co-funding from various Irish charities - Diabetes Ireland, Research Motor Neuron, Alpha One, Epilepsy Ireland, Fighting Blindness, Irish Thoracic Society, MSD Action Foundation, Breakthrough Cancer Research	€1,196,082.00	€2,857,758.91	€1,661,701.76
Opportunity-Led Funding	Public Health Agency, Research & Development Northern Ireland	€305,737.00	€611,474.00	€305,737.00
SFI-HRB-Wellcome Research Partnership	Wellcome and Science Foundation Ireland (SFI)	€1,938,521.00	€2,584,694.00	€646,173.50
		€10,366,845.00	€16,780,374.91	€6,413,555.26

Corporate Governance and Financial Statements

The Corporate Governance and Financial Statements information will be published in a Part 2 to this document upon receipt of the audited financial statements from the Office of the Comptroller and Auditor General.

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