

Annual Report



2019

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Research.
Evidence.
Action.

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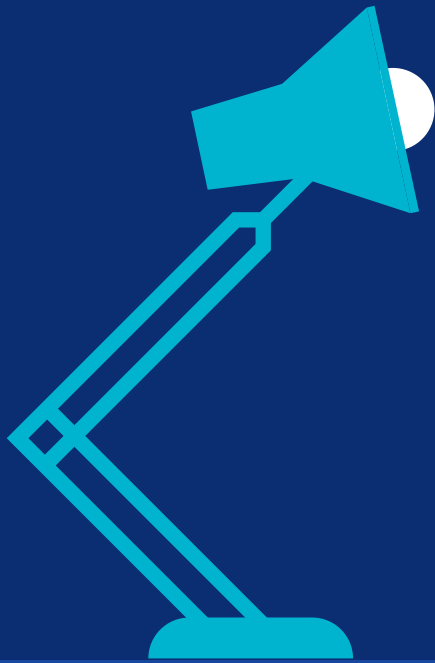
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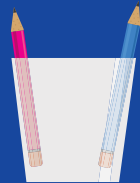
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Outcomes and Impact in 2019

HR^B



8,142

patients contributing to clinical studies at the three HRB Clinical Research Facilities (HRB-CRFs), including 916 patients participating in active clinical trials



4,643

cancer patients contributing to 166 Cancer Trials Ireland studies; 1,775 of these cancer patients are participating in 135 active clinical trials



128,000

live records on LINK



1,375

active users on LINK online data system

179

requests for data from the HRB NHIS received and responded to

€38.4m

awarded (including
€6.5m co-funding)

5

evidence reviews
produced for the
Department of Health



164

awards across 12
host institutions and
research-performing
organisations

11

peer-reviewed
journal articles
published
using HRB
National Health
Information
Systems (NHIS)
data

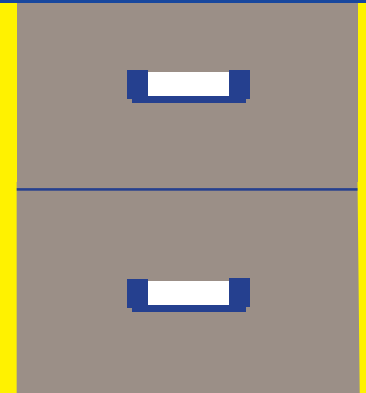
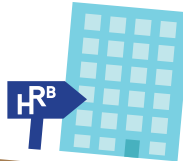


€16.9m

leveraged from Horizon 2020 for 19
health-related projects and a further
€0.5m leveraged from the Public
Health Programme

249

clinical studies
underway at the three
HRB Clinical Research
Facilities (CRFs); 116 of
these clinical studies are
active trials



16

HRB reports
published



172

research jobs
supported

Chair and Chief Executive's Report



Prof Jane Grimson
Chairperson



Dr Darrin Morrissey
Chief Executive

The HRB continued to make strong progress during 2019 to deliver the HRB Strategic Plan (2016–2020). The introduction of new award schemes and career paths for health researchers is having a positive impact for researchers, supporting development of health research infrastructure and helping to build capacity in order to involve citizens across the health research lifecycle. The HRB's reputation for the provision of quality data and evidence continues to grow, and this is reflected in national policies and requests from other organisations to re-use the data we collect.

The HRB's influence, and the impact of the work the organisation is doing, is evident both nationally and across Europe. In Ireland, we continue to lead the way in key areas such as open research, and public and patient involvement in research. In Europe, we hold leading positions on advisory groups in areas such as drugs, research integrity, biobanking, and personalised medicine, which gives an important voice to Irish researchers in a European context.

Through this report, we illustrate some of the impacts we have made and some of the new directions we have taken during 2019. This was achieved through the commitment and dedication of staff and the skilled oversight of the HRB Board. We extend our thanks and appreciation to both our staff and the Board for the significant progress made during the year.

Health research delivery and impact

Key initiatives delivered during 2019 included:

- Funding a selection of new and existing awards worth more than €38 million, which are aligned to our strategic priorities; some examples include:
 - > Collaborative Doctoral Awards to support doctoral training programmes for future health researchers in a variety of specialties
 - > Emerging Investigator Awards to boost the development of new and talented researchers and guide them to research independence
 - > Secondary Data Analysis Projects awards to develop research projects that answer policy and/or practice-relevant questions using secondary data
 - > Proof of Concept of a data environment for health and related research using the data, access, storage, sharing and linkage (DASSL) model.
- Delivering five evidence reviews and completing five evidence briefs for the Department of Health, encompassing areas such as vaccine injury redress programmes and investigating the impact of introducing a regionalised healthcare system.
- Achieving PubMed indexing for HRB Open Research, Ireland's first open access publishing platform.
- Supporting more than twenty conferences and events through our sponsorship call.
- Awarding the first HRB Impact Award to Professor Mary McCarron, TCD, to

€38.4m

to support 164 awards
across 18 host institutions
and research-performing
organisations

acknowledge her work and research that is transforming the lives of people with intellectual disability as they age.

- Publishing three evaluation reports on clinical research infrastructure, research leaders, and outputs and outcomes from HRB awards completed in 2016 and 2017.
- Establishing the Secretariat support office for the national Health Research Consent Declaration Committee.
- Developing a new financial management system merging three separate financial systems into one single application in order to consolidate financial controls and provide enhanced real-time financial reporting and metrics.
- Achieving gender balance, both in HRB peer review panels and in funding awards.
- Hosting an interactive conference for HRB grant holders, centred around the concept of 'design thinking', in order to encourage lateral thinking and approaches to health research ideas.

Through its funding mechanisms, the HRB:

- Invested €38.4 million in supporting 164 research awards across 18 host institutions and research-performing organisations.
- Supported 172 research jobs.
- Helped Irish researchers leverage around €17 million from Horizon 2020.
- Supported the recruitment of more than 8,000 patients in 249 clinical trials and studies underway at HRB Clinical Research Facilities (CRFs).

- Enabled more than 4,500 cancer patients to enrol in 166 Cancer Trials Ireland clinical trials and studies.

More detail on these and other examples and case studies which demonstrate what was achieved during the year are included throughout this report.

Health research collaboration

Working together with other funders and research-delivery bodies, we have had some significant achievements during the year. This has involved:

- Using data from our National Health Information Systems (NHIS) to help the Road Safety Authority (RSA), National Office of Suicide Prevention, and the National Directorate for Fire and Emergency Management to understand the circumstances of deaths.
- Researching co-funding initiatives both on the island of Ireland – with Science Foundation Ireland, the Irish Research Council, the Health and Social Care Research and Development Division of the Public Health Agency in Northern Ireland and health research charities – and internationally – with the Wellcome Trust Fulbright, the National Institutes of Health in the United States (US), and EU joint programming initiatives.
- Hosting a meeting of the international Funders Forum on Ensuring Value in Research.
- Co-hosting a workshop on dementia research with the HSE National Dementia Office.
- Providing data on the drug treatment situation in Ireland, in order to inform

European monitoring and trends, in collaboration with the European Monitoring Centre on Drugs and Drug Addiction (EMCDDA).

- Working with the Department of Health to deliver the second National Drugs Forum, which took place at the Aviva Stadium, Dublin, in November.

New directions

The HRB is actively working with the Department of Health to deliver upon and implement new legislation and regulation in relation to health research. To this end, two new offices will have been established in the HRB over the period 2019/2020.

The HRB Secretariat for the Health Research Consent Declaration Committee (HRCDC) became fully operational in January 2019. It has a strategic role in supporting the Health Research Regulations 2018. A total of 86 applications for consent declarations were submitted to the HRCDC in 2019. The HRCDC convened nine times and made 23 decisions.

The HRB also worked with the Department of Health to establish a National Office for Research Ethics Committees which will also be supported by a team based at the HRB. Recruitment will commence for the first posts in early 2020.

Future strategy

During 2019, the HRB set out a clear plan for the development of a future strategy.

This started with a comprehensive consultation process which involved meetings and workshops with multiple stakeholder groups as well as an online survey that generated more than 220 responses.

The outcomes from the consultation process contributed to an international expert advisory panel who convened in October 2019. Their role was to assess the HRB's strategic performance to date, draw together key emerging themes from the broad stakeholder engagement process, and to offer their international perspective on future directions for health research in Ireland.

We would like to acknowledge the valuable insights and recommendations we received throughout the consultation process. Using input from the various stakeholder groups and the international panel, the HRB Board is currently working on developing new strategic priorities and key actions for the new corporate strategy, which will be in place from in early 2021. We will publish the new strategy by the end of 2020.



Darrin Morrissey
Chief Executive



Jane Grimson
Chairperson

Snapshot of HRB activities during 2019

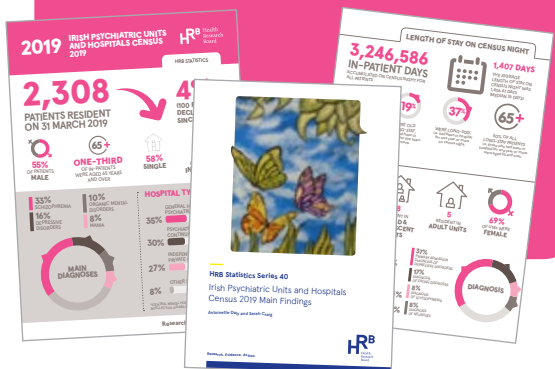
Secure data linkage and sharing

The HRB funded a pilot project to design and develop the infrastructure needed to share and link health data securely in line with legal and ethical requirements. The project, which will be led by the Irish Centre for High-End Computing (ICHEC) at NUI Galway, will also provide guidelines for the upscaling of the model.



Irish Psychiatric Units and Hospitals Census 2019

The HRB published the 10th national psychiatric census of patients in psychiatric units and hospitals.



Horizon 2020 success

In 2019, Ireland secured almost

€17m

in Horizon 2020 (H2020) funds. This represents 2.5% of the available budget and was the largest Irish drawdown to date of H2020 funding. Per capita, Ireland is the third highest recipient of health research funding from the EU.



Alcohol treatment figures for 2018

HRB report shows that two in three new cases were already dependent on alcohol when they presented for treatment for the first time. This means that more people are presenting when the problem is already severe, which makes treatment more complex and recovery more difficult.



Outputs, outcomes and emerging impacts

The HRB *Outputs, outcomes and emerging impacts* report, published by the HRB in December 2019, analyses the €47 million investment in 187 awards completed during 2016 and 2017. This investment led to 329 research-related posts, 187 policy and practice influences, 10 patents, 5 licensed technologies, 2 start-ups, 59 industry collaborations, 113 new research tools and methods, and 849 peer-reviewed publications.



Binge drinking and alcohol-related harm



Peer-reviewed research by HRB staff found that:

- Monthly and occasional binge drinkers accounted for 62% of all drinkers; this group consumed 70% of the alcohol and accounted for 59% of the harms in the population.
- Dependent drinkers made up just 7% of the drinking population and accounted for 27% of alcohol-related harms in the population.

According to Dr Jean Long, Head of the Evidence Centre at the Health Research Board:

‘Given the fact that most drinkers in Ireland engage in binge drinking, policies targeted at the whole population are most appropriate to help reduce alcohol-related harms’.

€38m

Evaluation of €38m investment in HRB research leaders

A HRB report shows that investing in high-potential researchers can have a real and lasting impact on the development of their research and international standing, and significant spill-over impacts on the careers of the researchers’ teams and the development of the respective research disciplines within their institutions.



Speaking about their experience, one of the research leaders said:

‘Because of the HRB awards, I’ve created a scientific group which is generating research of global impact. That results in better science and better clinical care’.



Drug treatment figures for 2018

HRB figures show a 50% increase in cases treated for cocaine use between 2017 and 2018, which represents the majority of the increase in all treatment cases. There has been a consistent rise in treatment for cocaine use since 2013, highlighting a changing pattern of drug use during the recent economic recovery. Cocaine (22%) is now rivalling cannabis (23%) as the second most commonly reported drug that people receive treatment for.

2,254
COCAINE
CASES

80%
MALES

30+
30 YRS
MEDIAN AGE

35%
EMPLOYED

Supporting Sláintecare

A number of HRB funding awards will contribute to the implementation of the Sláintecare programme. Dr Sara Burke, the Principal Investigator on one of the projects said:

‘This project will actively feed international and national theory, knowledge, and experience into the Sláintecare implementation process. We will be co-designing a framework to ensure that regions can sustain the delivery of universal, integrated care that is responsive to their population’s health needs’.



SLÁINTECARE
IMPLEMENTATION
STRATEGY

Digital animation series addresses young people's mental health

The five-part series features the voices and stories of young people who have experienced anxiety, bullying, not fitting in, depression, and loneliness.

Dr Helen Coughlan, Clinical Research Fellow at the Department of Psychiatry, Royal College of Surgeons in Ireland (RCSI) said:

'Findings from our research have shown that many young people are struggling with stress, anxiety, low mood, and a sense of isolation and disconnection from others. Often, they experience these issues privately and in silence without ever letting other people know'.



Increasing transparency around HRB panel reviews

In 2019, as part of a pilot programme, the first two observers attended a HRB panel review. The aim is to increase understanding among the research community about HRB processes, and the initiative was widely welcomed by the research community.



Drugs and road user fatalities

RSA

The HRB collaborated with the Road Safety Authority (RSA) and with the Medical Bureau of Road Safety to examine the presence of drugs among road user fatalities. Preliminary results were presented by the RSA at its annual academic lecture in October 2019.



Helping to make every patient contact count

A new HRB-funded research project will help the Health Service Executive (HSE) make the most of every patient contact. Dr Maria O'Brien, Programme Manager for Making Every Contact Count, said:

'Making Every Contact Count aims to address the unsustainable pressure that chronic disease treatment puts on health services. The HRB-funded research project led by Professor Molly Byrne of NUI Galway will ensure that the implementation of the Making Every Contact Count programme is systematic and evidence-based, and thus supports health professionals to help patients achieve positive long-term behaviour change'.

Two new HRB Board members appointed

Professor Seamus Donnelly, Professor of Medicine at Trinity College Dublin and Dr Tracy Cunningham, Clinical Head of Late Projects, Oncology R&D, AstraZeneca, were appointed to the HRB Board in September 2019.

HRB reviews €160m investment in clinical research infrastructure

According to Oonagh Ward, HRB, lead author of the report:

'This report provides us with a much greater understanding the Irish clinical research landscape, which will help to ensure that our future investments in this area are evidence-based and that they address identified needs and drivers of clinical research'.



HRB invests €8m in emerging investigators

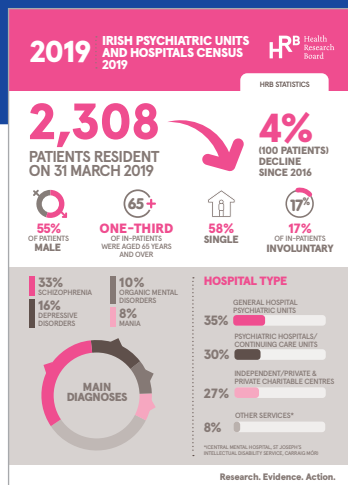
The 11 new emerging investigators will address a broad range of health areas, including breast cancer, type 2 diabetes, stroke, osteoarthritis, self-harm, sepsis, TB, clinical guidelines, gender differences in cardiovascular disease, and chronic obstructive pulmonary disease.

Dr Darrin Morrissey, Chief Executive, HRB said:

'We want this investment to advance the skills and expertise of researchers, while at the same time generate research outcomes that have strong potential to impact on people's health, patient care or health policy'

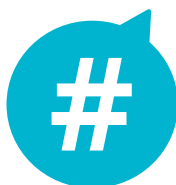
Psychiatric admissions and discharges

The latest report from the HRB shows that there were 17,000 admissions to Irish psychiatric hospitals and units during 2018. Depression, schizophrenia, mania, neurosis and alcoholic disorders accounted for more than two-thirds of all admissions.



European Drug Report 2019

The HRB provides Irish data for overall European analysis, and compares the EU and the Irish drug situation.



Professor Mary McCarron wins the first HRB Impact Award

The award recognises how her research has transformed health, care, and living environments for people ageing with an intellectual disability.



BT Young Scientist

Dr Darrin Morrissey, Chief Executive, HRB, presents Laura O'Sullivan from Cork with the HRB Special Prize at the 2019 BT Young Scientist & Technology Exhibition.

Laura's project demonstrated that artificial intelligence (AI) could play a role in cancer screening programmes.



376 POISONING DEATHS

3 in 5 INVOLVED POLYDRUGS WITH AN AVERAGE OF 4 DIFFERENT DRUGS IMPLICATED

Drug-related deaths data published for 2017

More than one person died from drug overdose each day in 2017. Typically, these were male, aged in their 30s and 40s, and taking a mixture of drugs, many of which are legal, such as methadone, alcohol, or benzodiazepines. A cocktail of drugs was present in three out of five poisoning deaths. Mixing drugs is known to cause more complications, and it also increases the risk of overdose.

HRB staff present research at Lisbon Addictions 2019 conference

Dr Suzi Lyons, Ena Lynn, Dr Anne Marie Carew and Anne Doyle were among the HRB team presenting at the third European Conference on Addictive Behaviours and Dependencies.



400 parents and children participate in HRB-funded research project

The ENRICH programme involved a five-year investigation of a new service called the *Upto2/Parent and Baby Programme* which combines many different health and education-related parenting supports. The programme was found to significantly increase parental competence and well-being.



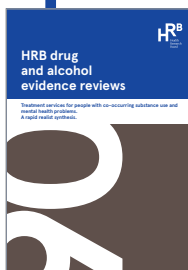
Ones2Watch 2019 Competition

Dr Annalisa Montesanti, HRB, presents Dr Aisling Smith, from the Rotunda Hospital and the Royal College of Surgeons in Ireland (RCSI) with the HRB Ones2Watch 2019 Competition trophy. Dr Smith won the votes of her peers for the presentation of her research on heart function in babies born with Down syndrome.



Treatment services for people with co-occurring substance use and mental health problems

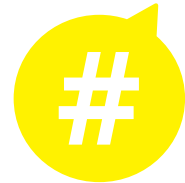
The HRB published results of this rapid realist review to feed into Ireland's National Drugs Strategy 2017–2025, and to provide information to help better integrate mental health and substance use services.



HRB at major international disability conference

Dr Sarah Craig, Head of National Health Information Systems, HRB, co-presented a session at the International Association for the Scientific Study of Intellectual and Developmental Disabilities conference entitled *Lessons learnt from the Irish National Intellectual Disability Database and future plans*.

'Approximately 1,300 people attended the four-day conference', said Dr Craig. 'It was interesting to see more papers at the conference in the area of big data, and that the HRB's National Intellectual Disability Database (NIDD) is one of a very small number of data sources in the world that are dedicated to intellectual disability'.



€750,000 bequeathed for Parkinson's research

The HRB, in partnership with the Medical Council, launched an award funded by a bequest from the late Mr Patrick Quinn for research that would help people living with Parkinson's disease or people caring for them.



Health Research Consent Declaration Committee

The HRB Secretariat for the Health Research Consent Declaration Committee (HRCDC) opened its doors for business in January 2019. A total of 86 applications were submitted to the HRCDC in 2019. The HRCDC convened nine times and made 23 decisions. Twenty applicants received a consent declaration (with or without conditions attached), and two decisions were deferred pending further information. One decision was to not make a consent declaration, which was overturned by an independent appeal panel.



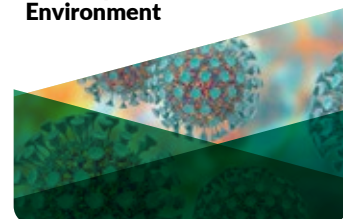
Supporting national change for open research

The HRB fully endorsed the *National Framework on the Transition to an Open Research Environment* and will work closely in partnership with other stakeholders to prepare the National Action Plan.

Patricia Clarke, Programme Manager, HRB, and Co-chair of the National Open Research Forum said:

'The National Framework is a clear statement of intent by the Irish research community to take practical steps to embed open research in Ireland and to ensure that the research system moves in a common direction'.

National Framework on the Transition to an Open Research Environment



1



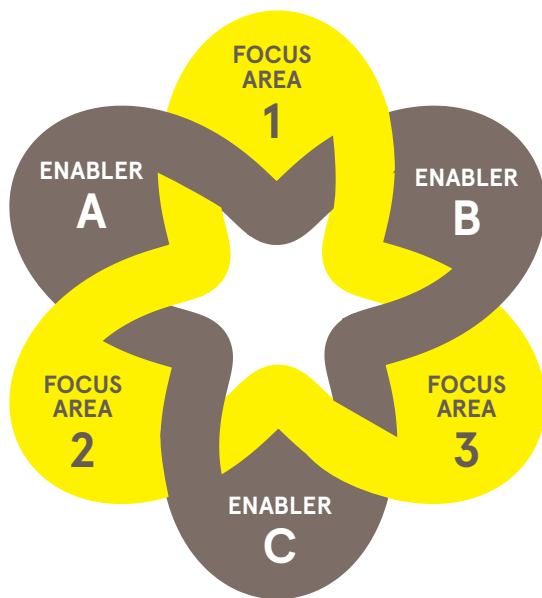
Key deliverables in line with HRB strategy 2016 – 2020

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 2018 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 from 2016 to 2020 and beyond:

- Address major health challenges
- Support healthcare interventions, and
- 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 of these areas. This will be achieved by:

- 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 are founded on best practices.

Focus area 1

Address major health challenges

2019 Objectives:

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

Key items delivered in 2019

- Made 33 awards worth €16.3 million in Focus area 1. Of the €16.3 million awarded in this area, €5.4 million was leveraged from other sources.
- Funded two awards worth €1.7 million for international collaboration under the US-Ireland R&D Partnership.
- Funded 25 awards worth €9.1 million under the 2019 Investigator-Led Projects scheme.
- Opened a call in September 2019 for the 10th HRB-Health Research Charities Ireland (HRCI, formerly MRCG) Joint Funding Scheme.
- Made two awards worth €0.6 million under a new funding instrument focused on Parkinson's disease research in partnership with the Medical Council, funded by a bequest from the late Mr Patrick Quinn.
- Co-funded one large Investigator Award and one Research Career Re-entry Fellowship, with a combined value of €1.2 million, under the Science Foundation Ireland (SFI)-HRB-Wellcome Research Partnership.
- Participated in three joint transnational calls in 2019 under the HRB strategy for engagement in European Union (EU) research. These included calls in the Joint Programme in Neurodegenerative Diseases (JPND), the EU Joint Programme in Rare Diseases (EJP RD), and the ERA-Net on Personalised Medicine (ERA PerMed).
- Invested in two awards worth €3.8 million, with the HRB contributing €0.7 million of this total. The first of these awards is focused on developing neuroimaging tools for neurodegenerative diseases and the second is focused on linking and analysing registries for rare diseases across Europe.
- The HRB also worked to prepare five new transnational calls in neurodegeneration, health nutrition, therapies for rare diseases, and personalised medicine, which will open in 2020.

33

awards, worth
€16.3m, were made
in this focus area.

Case Study 1:

A common approach to research integrity



In 2019, the HRB became a partner in an EU project to develop a “toolbox” of standards and guidelines that help cultivate research integrity.

‘Research integrity means many things,’ said Dr Maura Hiney, Head of Post-award and Evaluation, and the HRB contributor to this project. ‘It’s a huge area that goes from the micro to the macro level, spanning individual research projects and the very nature of scientific endeavour’.

‘Research integrity is essential in order to build public trust in science. It also has really important contributions to make to reducing research waste, to avoiding duplication of research effort, and to raising standards.

‘However, research-performing organisations (RPOs) and research funding organisations (RFOs) sometimes struggle to know whether the systems they are putting in place are really the most effective to promote and protect good research practices and that’s where this project comes in.’

Standard Operating Procedures for Research Integrity (SOPs4RI) is a multi-country project funded by the European Commission. The aim of SOPs4RI is to develop evidence-based standard operating procedures (SOPs) and guides that RPOs and RFOs can draw on when developing governance arrangements to promote strong research integrity cultures.

Dr Maura Hiney, continued: ‘The ultimate output of the SOPs4RI project will be an online, freely accessible and easy-to-use evidence-based “toolbox” that can help RPOs and RFOs to cultivate research integrity and reduce detrimental practice in the research that they support. The HRB wants not just to be a part of the broader solution for research integrity practices, but also to meaningfully contribute to enabling positive change.’

Professor Anita Maguire, Chair of Ireland’s National Forum on Research Integrity, added:

‘Ireland needs and wants to be fully aligned with its research counterparts in Europe. Having a national RFO as an active partner in this project ensures that the work of the National Forum on Research Integrity is informed by the latest evidence and thinking at an international level. We are already aligned with the European Code of Conduct for Research Integrity, so integrating the outputs of this project, as they emerge, in an Irish context is a natural next step for us’.

The project runs from 2019 to 2022.

Case Study 2:

Supporting cutting-edge research – €8.7 million for 24 new Investigator-Led Projects



In 2019, the HRB funded 24 new Investigator-Led Projects. This scheme supports innovative and internationally competitive research that addresses health challenges for society. There are two thematic streams, the first in patient-oriented research, and the second in population health and health services research.

According to Dr Caitriona Creely, Programme Manager, HRB:

‘HRB Investigator-Led Projects is a highly competitive scheme, and we always see a strong interest from researchers in each round. There were 133 eligible applications in 2019. In order to fairly assess such a large number of applications, we contacted almost 2,400 potential international reviewers. Just over 500 of these accepted our invitation to review projects,

which meant that almost all of the applications had 3 separate reviewers. Following analysis of their scoring, 76 applications progressed through an international review panel process. There were two separate panels, one to address each thematic stream. Following the panels’s deliberations, the final 24 successful projects were selected’.

The successful projects will address topics including investigating new antimicrobial agents to treat wound infections, exploring the therapeutic potential of sensory stimulation for Alzheimer’s disease, evaluating services provided for women who experience recurrent pregnancy loss, and studying how patients with advanced chronic kidney disease (CKD) transition to kidney failure and dialysis, and how this might be prevented.

Dr Creely added:

‘The breadth and diversity of these research projects really showcases the capabilities of the research community in Ireland’.

This is the second of three calls planned during the HRB Strategy 2016–2020 period, with the third expected in 2020 or 2021. The HRB plans to invest €18 million in the Investigator-Led Projects scheme during the lifetime of the strategy and a further €8.25 million in 2021.

‘The breadth and diversity of these research projects really showcases the capabilities of the research community in Ireland’.

Focus area 2

Support healthcare interventions

2019 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 2019

- Opened the next round of the 2020 Definitive Interventions and Feasibility Awards (DIFA). 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.
- Conducted a successful interim review of HRB Clinical Research Coordination Ireland (HRB-CRCI). The HRB-CRCI is a €3.4 million investment by the HRB.
- Completed a review of Cancer Trials Ireland, in order to inform the HRB's future investment in cancer trials in Ireland.
- Provided supplemental funding of €75,000 to support the HRB-Trials Methodology Research Network (TMRN) to join the Medical Research Council (MRC) Trials Methodology

Research Partnership. This partnership connects HRB-TMRN to a diverse group of researchers from a variety of disciplines to work on novel aspects of trials methodology.

- Supported the Irish Research Nurses Network to launch its publication *Count me in*, based on a national survey of clinical research nurses (CRNs) and midwives working in a variety of settings (e.g. universities, hospitals, industry, and primary care) in Ireland.
- Monitored the progress of 21 active DIFAs, with 421 participants enrolled on studies to date.

€3.4m
investment by the
HRB in HRB-CRCI.

Case Study 3:

The People's Trial – research empowered by the public



Does reading a book in bed make a difference to sleep in comparison to not reading a book in bed?

'We want The People's Trial to help the public learn about randomised trials, to understand why they matter, and to be better equipped to think critically about health claims,' said Professor Declan Devane, Director of the HRB-Trials Methodology Research Network.

'And equally importantly, The People's Trial will also help researchers learn about how best to involve the public in the steps of a trial process. This in turn will help influence other trials to be better designed and implemented in the future'.

The brainchild of the HRB-Trials Methodology Research Network at NUI Galway, The People's Trial offered ordinary people the chance to participate in scientific research. Public participants decide all the major steps in a randomised trial and any member of the public was eligible to take part. No special skills or training were needed, as the HRB-TMRN website for the initiative explains everything you need to know to get involved.

In total, participants from 59 countries took part in the

stages of The Peoples Trial, and participants from 43 countries were randomised in the trial.

The HRB-TMRN team used the project website, www.thepeoplestrial.ie, and social media to engage and interact with the public. The site opened in August 2019 and more than 155 potential trial questions were received. These questions informed the basis of The People's Trial. The question for the trial was selected by the public, following two rounds of voting. The winning question was: **"Does reading a book in bed make a difference to sleep in comparison to not reading a book in bed"?**

The public then decided on the trial design and how the question was answered; they also took part in the trial, and decided on the best way to disseminate the trial findings.

Overall, 950 people took part in the trial, with 476 people assigned randomly to reading a book in bed and 474 people assigned randomly to not reading a book in bed.

The researchers are now analysing the data, and have worked with the public to identify how they would like to see the results disseminated and shared, including among the more than 612 people from 47 countries who responded to this stage of the study. The trial results are expected to be made public in early 2020.

Speaking about the HRB-funded initiative, Oonagh Ward, Programme Manager, Infrastructure, Interventions and Networks said:

'Having a trial designed by the people for the people is a simple yet excellent example of how to involve and engage people in health research. It builds trust, interest and an understanding of the process of developing health interventions. All stages of this project were interesting and innovative – even the final stages, which involved asking trial participants how they would like HRB-TMRN to disseminate and share The People's Trial findings. We look forward to seeing the trial results soon'.

Case Study 4:

Blood clots and pregnancy

‘Blood clots cause more maternal deaths in the UK and Ireland as a direct result of pregnancy than any other condition’, said Dr Fionnuala Ni Áinle, a consultant haematologist at the Mater Misericordiae University Hospital and University College Dublin, and the Principal Investigator on the HRB-funded HIGHLOW study.

‘Blood clots can cause serious ill health, and pregnant women have an increased chance of developing blood clots. We also know that women with a previous blood clot have a higher recurrence risk in pregnancy.

‘In fact, the risk is so high that clot-preventing medication is warranted during the entire pregnancy and for six weeks after delivery. Unfortunately, the scientific literature doesn’t have clear evidence on what might be the best medication and the best dose of that medication to prescribe’.

That is where the HIGHLOW study comes in. It is supported through the HRB’s Definitive Interventions and Feasibility Awards scheme. This research forms part of a larger

international trial that will recruit more than 500 women, with Irish patients accounting for approximately 100 of these women.

The study will compare two doses of clot-preventing medication recommended by current guidelines for pregnant women who have had a previously diagnosed blood clot. The study aims to determine which dose is most effective in preventing a new blood clot, and which dose is the safest in terms of minimising side effects such as bleeding.

Dr Ni Áinle continued:

‘Ireland is on track to recruit a substantial proportion of all patients to this international study, which is a tremendous achievement given the relative size of our population.

‘With the support of the HRB, the Irish team has rapidly become a key player in the field of academic research in venous thromboembolism’.

Oonagh Ward, Programme Manager, Infrastructure, Interventions and Networks, at the HRB commented that the

HRB Definitive Interventions and Feasibility Awards scheme was designed to boost research activity in clinical trials and interventions.

‘Investigators such as Professor Ni Áinle, working in partnership with clinical research infrastructures in Ireland, have demonstrated our ability to deliver high-quality studies both nationally and internationally’, she added.

‘With the support of the HRB, the Irish team has rapidly become a key player in the field of academic research in venous thromboembolism’.

Focus area 3

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

2019 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 2019

- Made 18 awards worth €4.3 million in Focus area 3. Of the €4.3 million awarded in this area, €1 million was leveraged from other sources. Details of the 18 awards are as follows:
 - > Invested €1.3 million in our Applied Partnership Awards scheme. A total of six awards were made in 2019, with co-funding of €256,000 provided by healthcare organisations.
 - > Made seven awards worth €1.9 million for innovative Secondary Data Analysis Projects.
 - > Renewed the Collaboration Agreement for Phase III of the Research Collaborative in Quality and Patient Safety Awards Scheme (RCQPS) at a total cost of €0.3 million (€42,000 to the HRB). This scheme is run jointly with the Health Service Executive (HSE) and the Royal College of Physicians of Ireland (RCPI).
 - > Awarded €0.6 million to two RCQPS projects. The cost to the HRB is €0.27 million, with equal co-funding from the HSE.
 - > Awarded €0.2 million through the Cancer Nursing Research Awards to a pilot study on of an integrated care model for patients receiving oral anti-cancer agents in the community.
 - > Renewed funding worth €0.2 million up to 2021 to Dementia and Neurodegeneration Network Ireland (DNNI).
 - > Working jointly with the Irish Cancer Society, made one Cancer Nursing Research Award worth €0.16 million.
- Completed successful interim reviews of the progress of The Irish Longitudinal Study on Ageing (TILDA) and Research Leaders 2015 Awards.
- Jointly organised a workshop on dementia research with the HSE National Dementia Office. The event was hosted by the

18

awards worth €4.3m made in Focus area 3.

Department of Health Ageing Unit, and the outputs were published on the HRB and HSE websites.

- Published one HRB National Health Information System (NHIS) annual report and one census report from the National Psychiatric In-patient Reporting System (NPIRS).
- Published six national bulletins, generated eight infographics, and produced 45 quarterly performance indicator reports to provide clear and concise information to help policy-makers and service planners make informed decisions about service planning in the area of drugs, alcohol and disability.
- Completed and submitted 16 peer-reviewed journal articles based on NHIS data. Eleven were published in 2019, with the remaining five expected to be published during 2020.
- Collected data on behalf of the Road Safety Authority (RSA), the National Directorate for 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 jointly hosted the second annual National Drugs Forum at the Aviva Stadium, Dublin in November 2019.
- Published five evidence reviews and completed five evidence briefs.
- Published four issues of *Drugnet Ireland*.
- Trained more than 900 people from approximately 300 services on the LINK system for the National Drug Treatment Reporting System and the National Ability Supports System.

The librarians at the HRB National Drugs Library (www.drugsandalcohol.ie) updated six fact sheets on the drugs situation in Ireland and produced new fact sheets on ecstasy and smoking. They created a new webpage on alcohol, drawing together key resources in one accessible place, and ensured that Irish drug-related publications published in 2019 were made available in the electronic public library.

The librarians actively engage with stakeholders through course visits, the community of practice on dual diagnosis, and the National Drugs Forum. The HRB National Drugs Library website (www.drugsandalcohol.ie) had 164,855 user sessions during 2019, and 5,648 profile visits to its Twitter feed.

**More than 900 people from
approximately 300 services
have been trained on the
LINK system**

Case Study 5:

HRB data – more than the sum of its parts



HRB staff are using data from the organisation's information systems and research to better understand fire deaths, suicide, road traffic collisions, and drownings.

In 2019, the HRB published the first research paper on fire deaths in Ireland. It revealed that alcohol was present in more than half of fire-related deaths reported.

'The HRB has been gathering data from coronial files for a number of years', said Dr Sarah Craig, Head of National Health Information Systems (NHIS), HRB. 'We use the coronial files as one part of our information gathering about drug and alcohol-related deaths for the National Drug-Related Deaths Index.

'The varied nature of coroners' cases means that there is potentially a range of groups that can benefit from a more in-depth investigation. We already engage with other organisations such as the National Office of Suicide Prevention, the Road Safety Authority and others to gather data relevant to their work, so we were delighted to work with the National Directorate for Fire and Emergency Management to analyse specific data on fire fatalities.

'This is the first time that data in relation to fire fatalities from all Coroner sites in Ireland have been analysed', according to Seán Hogan from the National Directorate for Fire and Emergency Management at the Department of Housing, Planning and Local Government. 'We have been

fortunate to leverage the expertise of HRB researchers, who already extract information from coronial files to gain insight into the circumstances of Irish fire fatalities. We hope to continue working with the HRB to use these learnings to further reduce fire deaths in Ireland'.

Dr Craig continued:

'It is fantastic that HRB expertise can be leveraged in this way. We work with the Road Safety Authority (RSA) and the Medical Bureau of Road Safety to enable more in-depth analysis of toxicology results related to road traffic fatalities. And work is ongoing with the National Office for Suicide Prevention to enhance knowledge about deaths due to suicide'.

Case Study 6:

Getting the most from existing research and social care data

In 2019, the HRB funded seven projects in the first round of its new Secondary Data Analysis Projects (SDAP) scheme. The HRB will invest almost €1.8 million in this scheme over the lifetimes of these projects. The scheme is designed to help health researchers make the best use of existing health and social care data. This is in line with a key action identified in the HRB Strategic Plan (2016–2020) to promote the secondary analysis and deeper exploitation of existing data sources.

‘There are so many datasets out there that are rich veins of information with the potential to inform other areas of health and social care,’ said Dr Anne Cody, Head of Pre-Award at the HRB. ‘This funding ensures that these datasets are better used in order to deliver high-quality, high-impact evidence for policy and practice’.

The most commonly identified datasets in applications to the SDAP scheme were The Irish Longitudinal Study on Ageing (TILDA), Growing Up in Ireland (GUI), Hospital Inpatient Enquiry (HIPE), and Primary Care Reimbursement

Service (PCRS) datasets. The international datasets identified included the UK Biobank, the British Cohort Study, the National Child Development Study, the Longitudinal Study of Young People in England, the English Longitudinal Study of Ageing, Understanding Society, the British Household Panel Survey, Global Burden of Disease, and the Adult Psychiatric Morbidity Survey.

All of the projects identified knowledge users for whom the results could be used to improve policy and practice.

The HSE is an important knowledge user; other knowledge users include the Health Information and Quality Authority (HIQA), the Irish Kidney Association, the All-Ireland Institute for Hospice and Palliative Care, and the Irish Hospice Foundation.

The HRB-funded projects will contribute to improving safety in social care settings, to creating better understanding of the future needs of palliative and end-of-life care in Ireland, and to identifying risk of maternal and neonatal morbidity. They will

also contribute to improving systems for appropriate controlled drug prescribing, to improving well-being among adolescents in Ireland, to creating better policies to prevent chronic conditions, and to understanding the disparities in gender-related health outcomes in chronic kidney disease.

In addition to secondary data analysis, three of the projects will develop tools to make datasets accessible and more widely available to other researchers and knowledge users. These include a web tool, a data map, a data dictionary, an anonymised public-facing portal, and the integration of patient-reported outcomes measures (PROMs) into an electronic health record (EHR).

All of the projects identified knowledge users for whom the results could be used to improve policy and practice.

Enabler A

Support exceptional researchers and leaders

€13.8m

Made 99 awards, worth €13.8m under Enabler A.

2019 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 2019

- Made 99 awards worth €13.8 million under Enabler A, which included:
 - > Supported 82 Summer Student Scholarships, worth a total of €1.9 million.
 - > Invested €4.5 million in three 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.
 - > Awarded 11 Emerging Investigator Awards, worth a total of €8.31 million.
 - > Provided reintegration funding of €0.2 million to a Cancer Prevention Fellow.

- > Through the Fulbright-HRB Health Impact Awards, provided an opportunity for three Irish health researchers to take up placements for a period of three/six months to develop collaborations with US colleagues. The total funding involved was €0.3 million.
- Updated the Health Research Careers Framework.
- The HRB Irish Clinical Academic Training (ICAT) Programme (established with Wellcome) recruited the third cohort of new doctors to participate in a PhD training programme for clinicians. Under the scheme, 40 clinicians will be trained between 2016 and 2021.
- The HRB-funded Structured Population and Health-services Research Education (SPHeRE) programme took in a cohort of 13 PhD students (four HRB-funded students and nine students funded from other sources).
- Launched a call for Research Leader Awards, with awards to be made in 2020.
- Launched a call for Emerging Clinician Scientist Awards, with awards to be made in 2020.
- Completed a successful interim review of the Collaboration in Ireland for Clinical Effectiveness Reviews (CICER) programme. CICER is a five-year €2.5 million investment by the HRB in conjunction with HIQA.

Case Study 7:

HRB investments in Ireland's research leaders under the microscope

'Since 2004, the HRB has invested €38 million to support the development of leaders in research in both the academic and clinical environments', said Dr Catherine Gill, HRB Programme Manager in Post-award and Evaluation.

'In 2019, we conducted detailed quantitative and qualitative analyses of that investment. In essence, we looked at what works, what doesn't, and what needs adjustment. Those results were published in *An evaluation of HRB investment in health research leaders*'.

A total of 25 high-potential researchers in clinical, population health and health services research were funded via the Research Leaders Awards and Clinician Scientist Awards. The analysis found that they become leading investigators in their discipline, that they mentor and develop others and drive evidence use in policy and practice in their discipline. Their awards led to:

- 119 research-related positions being funded
- €28.5 million in additional funding leveraged
- 190 policy and practice influences developed
- 133 collaborations forged
- 809 peer-reviewed papers

published in international scientific journals

- 149 rewards and recognitions bestowed by scientific peers
- 197 education and training initiatives delivered
- 49 instances globally of evidence produced by HRB leaders being cited in clinical guidelines.

The leaders' comments about their experience of HRB support reflects the impact the award had on their careers, both nationally and internationally.

'I really do think this [award] enables people to go beyond where they could've expected in their careers'.

'My career has changed beyond all recognition from the way it was 11 or 12 years ago, to being an academic leader in my own field, in the university, in the country and internationally ... so truly transformative from my point of view'.

'Because of the HRB awards, I've created a scientific group which is generating research of global impact. That results in better science and better clinical care. Better science because of the grants and

publications we generate. But better clinical care because only through research and the protection of research can you get the time to be an absolute expert in the clinical field you're engaged in'.

'The findings from the report will inform how we fund career development in our next strategy', noted Dr Gill.

'The report has already driven change in the HRB's approach to health research careers, with the development of a separate career track for health and care practitioners. This recognises the different challenges faced by clinicians and academics, and ensures that potential research leaders among the health and care professional community have an opportunity to compete for funding'.



Case Study 8:

Professor Mary McCarron wins the inaugural HRB Impact Award



Pictured L to R: Dr Darrin Morrissey, HRB. Professor Mary McCarron, TCD, and Ms Ellis Walsh, wife of the late Dr Dermot Walsh, HRB, whom the HRB Impact Award is in memory of.

The HRB Impact Award was created to recognise a researcher or health professional who has made, or is making, an outstanding contribution to research that has had a significant impact on people's health or on health policy or practice.

Professor Mary McCarron, Professor of Ageing and Intellectual Disability at the School of Nursing and Midwifery, Trinity College Dublin, is the first winner of this award.

Presenting the award, Dr Darrin Morrissey, Chief Executive, HRB said:

'The HRB Impact Award recognises people who use their research to create real changes in health and care. Professor McCarron has an incredible track record of translating her research into practice. As a result, she is now is

delivering better health and care, creating award-winning housing projects, and driving policy change that is transforming the lives of people with intellectual disability as they age.'

'The approach she has taken, involving this community and giving them a real voice, is also having global impact. Many of her findings, and the change she is leading, are directly transferable to the general population who are ageing too, which is attracting major interest both nationally and internationally.'

Accepting the HRB Impact Award, Professor Mary McCarron said:

'It is a very humbling moment to receive this level of recognition. I am so appreciative of the support I have received from the HRB over so many years. I

could not have achieved any of this without the many colleagues who have worked with me, and the students, research fellows and interviewers who have made all of the data collections and analyses possible.

'Most of all, I am grateful to the people with intellectual disabilities, their families and the service providers who have gone above and beyond to collaborate with us, support us, guide us, and, ultimately, to give us answers to help shape ageing for people with an intellectual disability in Ireland. Not to mention more questions to investigate.

'The legacy I want to leave is that we have the services and supports available so that every person with intellectual disability will experience happy and healthy lives in old age'.

Enabler B

Build a strong enabling environment

2019 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.
- > A report on the outputs and outcomes of HRB awards that completed in 2016 and 2017, in order to better understand what is emerging from our funded research.
- Contributed to the Corporate Enabling of Clinical Research initiative to identify and address the challenges of sponsoring clinical research studies in the areas of governance, contracts, insurance, operations, financial resources, engagement with the health sector, training, and support.
 - Published a new HRB policy on clinical trials and interventions governance.
 - Worked with the OECD Global Science Forum on an international activity for optimising the operation and use of national research infrastructures.

Key items delivered in 2018

- Invested €0.4 million in a proof of concept of a data environment for health and related research under the data, access, storage, sharing and linkage (DASSL) model.
 - Published three key evaluation reports on:
 - > An in-depth review of the clinical research infrastructure landscape in Ireland to provide evidence for the design of a model of future clinical infrastructure investment
 - > An evaluation of HRB investment in health research leaders (specifically the Research Leader Awards and the Emerging Clinician Scientist Awards), in order to inform future calls in these areas
- Published a new HRB policy on research data management and sharing.
 - 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
 - > Doubling the number of public reviews, with full coverage of 133 applications to the Investigator-Led Projects
 - > Having 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

86

applications were handled by the HRCDC in its first year

- Integrity in Irish Research, on behalf of the National Forum on Research Integrity.
- > Developing HRB Open Research, the HRB's open research publishing platform, to include indexing on PubMed, the launch of three collections in ageing populations, research methodology and maternal/child health, and the launch of a new article type, the Registered Report.
- > 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).
- Launched the National Framework on the Transition to an Open Research Environment, which will act as the foundation for a National Action Plan for the transition to an open research environment in Ireland, jointly supported by the Department of Business, Enterprise and Innovation and the Department of Education and Skills, and endorsed by four Government Departments and 17 agencies and research organisations across Ireland.
- Continued to improve HRB grant processes. This included:
 - > Achieving excellent gender balance both on HRB selection panels, with 49% female and 51% male representation, and in applicants' success rates, with 35% of female applicants and 34% of male applicants successful
- > Conducting an audit of post-award processes
- > Hosting a meeting 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.
- Worked within the Science Europe Working Group on Research Data to publish the *Practical Guide to the International Alignment of Research Data Management*.
- Established the Secretariat of the Health Research Consent Declaration Committee (HRCDC) which in its first year:
 - > Handled a total of 86 applications to the HRCDC.
 - > Convened the HRCDC nine times and made 23 decisions (20 applicants received a consent declaration; two decisions were deferred, and one was rejected by the HRCDC).
- 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.
- Chairing the International Consortium for Personalised Medicine (ICPerMed), a consortium of EU funding bodies established

€16.9m

leveraged by Irish
researchers in funding
from H2020 programmes

by the European Commission under the H2020 programme.

- Contributed to the health perspective in preparations for Horizon Europe, the EU Framework Programme 2021–2027.
- Supported Irish researchers to compete for EU funding:
 - > Irish researchers leveraged €16.9 million in funding from H2020 programmes in 2019.
 - > Eighteen Irish projects successfully competed for funding in the H2020 Health Challenge, with five projects being led by Irish researchers. Highlights include:
 - Three successful projects in artificial intelligence (AI) after cancer treatment, with Waterford IT leading the FAITH, federated artificial intelligence solution for monitoring mental health status after cancer treatment, project.
 - UCD leading the ImpactDiabetesB2B project, a low-resource system of care intervention for appropriate gestational weight gain and improved postnatal outcomes using personalised health coaching delivered via a smartphone App.
 - UCC leading the MINDUP project, which focuses on mental health promotion and intervention in occupational settings, as well as project development, and implementation and evaluation of a comprehensive, multilevel intervention targeting both clinical and non-clinical mental health issues.
 - NUI Galway leading the AutoCRAT project, which focuses on the use of automated cellular robot-assisted technologies for translation of discovery-led research in osteoarthritis.
 - NUI Maynooth leading the SHAPES project, which focuses on smart and healthy ageing through people engaging in supportive systems. The project also addresses issues of ageing, ehealth and well-being, and social inclusion. This is the largest ever H2020 health grant (€21 million) led by an Irish university.
- > Other successful projects cover areas including the use of big data and AI to improve quality of life for cancer survivors, therapies for drug-resistant bacterial pneumonia, heart failure, novel neurodegenerative therapies, irritable bowel syndrome, appropriate use of caesarean section, integrated care, and smart living homes.

Case Study 9:

Ensuring value in research – how the HRB is playing its part



It was relatively straightforward to agree on the principles. The difficult bit is to make them come to life in your own processes and policies.

Everybody is grappling with the same issues, and learning from, and with, each other is really powerful.

Since 2017 a group of health research funding agencies and policy-setting organisations from around the world has met regularly to discuss common challenges, share experience, and collaborate. This group comes together under the umbrella of the Ensuring Value in Research (EViR) Funders' Forum. The group has developed a set of guiding principles that oversee all of the members' efforts and activities as research funders.

As funders, EViR members maximise the value of the research they fund when they:

- Set justifiable research priorities.
- Require robust research design, conduct and analysis.
- Seek to ensure that research regulation and management are

- proportionate to risks.
- Aim to ensure that complete information on research methods as well as findings from studies are accessible and usable.

The HRB has been a member of the EViR Funders' Forum since it was established in 2017. The HRB is also represented on the EViR Steering Group. In March 2019, the HRB hosted a meeting with 55 representatives from 20 funders and nine other organisations in ten countries. This was also an opportunity for other Irish stakeholders, including Dr Ana Terres, Head of Research, Health Service Executive; Dr Avril Keenan, CEO of Health Research Charities Ireland; and Professor Bernie Hannigan, HRB Board member, to hear more about the work of the EViR Funders' Forum.

Dr Anne Cody, Head of Pre-Award, explained:

'It was relatively straightforward to agree on the principles. The difficult bit is to make them come to life in your own processes and policies. The EViR Funders' Forum comprises large and small funders, those with a specific thematic remit, and those covering all kinds of health research, working in many different countries and research systems. Everybody is grappling with the same issues, and learning from, and with, each other is really powerful. I'm always energised after a meeting, with lots of new ideas about how we can increase the value of HRB funding'.

Case Study 10:

Driving culture change for research data management



In November 2019, the HRB published a new policy dedicated to the sharing and management of research data. The new policy aims to ensure that research funded by the HRB is transparent, equitable, of high quality, and can be reused by others. In line with best international practice, HRB-funded researchers are now required to develop data management plans (DMPs) to consider how data are collected, managed and stored to a high standard from the very beginning of a research project.

Professor Jane Grimson, Chair of the HRB Board said:

‘Data governance and stewardship are fundamental to good research practice. The HRB is working to establish a supportive and efficient environment for research data management and sharing. This approach

should provide maximum support to researchers and host institutions in order to implement the HRB policy, and it should also promote alignment of research data policies and approaches from Irish research institutions and funders’.

While funder policies are important drivers, there is growing recognition that credit for data sharing strongly increases the incentive for researchers to make their data open. Sharing research data also brings with it some concerns and challenges for researchers.

Dr Mairead O’Driscoll, Director of Research Strategy and Funding, HRB commented:

‘The HRB recognises that not all research data can be made open, in order to maintain confidentiality and privacy,

respect the terms of consent, as well as manage security or safeguard against other risks. For these reasons, the degrees of data openness may justifiably vary, including fully open, restricted/governed access or strictly confidential access. However, in all cases, high-quality metadata must be made available’.

During 2020 the HRB looks forward to working with other key stakeholders to deliver best practice implementation approaches.

This policy will apply to all new HRB funding calls launched from 1 January 2020 onwards.

Enabler C

Enhance organisational performance

2019 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.

Key items delivered in 2019

- Managed a five-year multiannual budget portfolio totalling €278 million.
- Financial oversight of more than 300 active research awards.
- Developed a new financial management system to merge three separate financial systems into one single application. This consolidation will strengthen financial controls and provide enhanced real-time financial reporting and metrics.
- Awarded the first HRB Impact Award to Professor Mary McCarron, Trinity College Dublin, to acknowledge her work and research in delivering better health and care, creating award-winning housing projects, and driving policy change that is transforming the lives of people with intellectual disability as they age.
- Upgraded our entire fleet of 97 laptops and desktops to Windows 10 Enterprise, which came bundled with a new Office suite and Microsoft Teams, a video conferencing

and document collaboration tool that will enhance our flexible working practices.

- Conducted two data protection impact assessments (DPIAs) in relation to the new financial management system and also in relation to the HR management system called Peoplesoft which is under development. DPIAs examine personal data to be processed on a system, with the objective of identifying privacy risks in advance of full project implementation.
- Organised the HRB Grant Holders Conference to bring together the principal investigators in receipt of HRB grants. The focus of the 2019 conference was to identify big health challenges that need a research focus, to ensure that the research we fund reflects the needs of the health system, and to open our minds to new ways of thinking and working.
- Organised the HRB Ones2Watch conference for early and mid-career HRB-funded researchers.
- Reduced carbon dioxide emissions by 10,531 kg following the installation of 345 LED lights in the HRB offices.
- Continued to develop a framework for greater employee resilience, employee engagement, and enhanced performance.
- Increased awareness and commitment in relation to equality, diversity and inclusion.
- Increased available office space by almost 25%. This reflects the growth in the organisation and highlights the flexibility of our facilities team to accommodate rapid change.

Case Study 11:

Delivering better outcomes and efficiency through innovation and excellence in information and communications technology (ICT)

The HRB's ICT infrastructure is constantly evolving,' said Martin Morgan, Director of Corporate Operations, HRB.

'We have undertaken an ambitious programme of work to upgrade many of our ICT systems and services. We are aiming to meet, if not exceed, the stated objectives in the Government's Public Service ICT Strategy and to continuously improve the HRB's ICT infrastructure.

'These are multi-year activities which, when combined, give our staff the flexibility to work securely from any location, be that a laptop in an internal meeting room, or remote working wherever HRB business takes our staff to'.

Liam Sinnott IT and Facilities Manager, added:

'In 2019, we undertook a major development project to consolidate three separate financial management systems into one unified application. When the project goes live in 2020, it will bring a range of enhanced efficiencies in dealing with day-to-day corporate financial

transactions, as well as facilitating enhanced reporting and control over the HRB's €278 million grant funding portfolio.

'Also in 2019, the HRB continued migrating data from its National Drug Treatment Reporting System into the new shared LINK platform. This brings to almost 128,000 the number of patient records on the system, which itself has been developed using privacy by design and privacy by default principles.

'We also undertook a programme of work to migrate a number of ICT services to the cloud, thereby reducing costs while simultaneously enhancing our business continuity and disaster recovery capabilities. The organisation upgraded its entire fleet of laptop and desktop computers and servers to the latest and most secure operating systems.

'The Windows 10 operating system, which we deployed on all laptops and desktops, brings a multitude of enhanced business capabilities. On a corporate level it offers better

data and information security, while for staff it offers superior productivity and comes bundled with remote working tools. All of our key systems have undergone a Data Protection Impact Assessment (DPIA), to identify and minimise any risks arising.

'The principles of confidentiality, integrity and availability have guided the systematic and planned development of the HRB's IT infrastructure, and we are committed to remaining at the forefront of secure, robust and open digital services'.

'These are multi-year activities which, when combined, give our staff the flexibility to work securely from any location, be that a laptop in an internal meeting room, or remote working wherever HRB business takes our staff to'.

Case Study 12:

Health research – what Ireland needs next

More than 120 delegates attended the 2019 HRB Grant Holders Conference in February 2019.

The two-day event had four main objectives. These were:

- Identify the big health challenges that need a research focus.
- Ensure that the research we do reflects the needs of the health system.
- Open our minds to new ways of thinking and working.
- Shape the direction of the next HRB strategy.

The conference revolved around a design thinking approach to problem-solving and, in the process, tried to answer the rather large and deliberately open-ended question: Health research – what does Ireland need most?

Design thinking requires developing a deep understanding of the people for whom you are designing products or services. It challenges assumptions. It reframes questions. It rapidly prototypes potential solutions. And all the while, it keeps the user's needs to the fore.

The opening keynote was delivered by Dr Juliet L Rogers,

CEO of Blue Cottage Consulting. Dr Rogers has extensive experience in applying design thinking approaches to solving complex, or as she described it, “wicked” healthcare needs. She spoke about how she uses design thinking in her work, and she presented a number of examples and cases studies of where it has been successfully used.

Two of Ireland's foremost innovation and design thinking experts, Dr Peter Robbins, Assistant Professor, Dublin City University Business School, and Trevor Vaughn, Programme Director, MSc in Design Innovation, Maynooth University, gave the audience a “deep dive” on design thinking. The audience were then challenged to apply a design thinking approach to identifying the next big ideas for health research in Ireland based on health system needs. Some fantastic ideas emerged from the exercise and, as a finale, were presented to a “Dragons’ Den” panel of judges.

Other speakers at the event included Laura Magahy, Executive Director of Sláintecare, the Government's 10-year programme to transform Ireland's health and social care services. She emphasised the importance of research to inform decision-

making in health and spoke of the need for health service planners to continually move from observation to implementation to evaluation in order to ensure that outcomes are appropriate and focused on the end user.

Professor David Prendergast, a social anthropologist and Head of the Department of Design Innovation, Maynooth University spoke about his work as Principal Investigator at the Technology Research for Independent Living Centre and co-founder of the Intel Institute for Sustainable Connected Cities, and the approaches that they took to designing systems for older populations.

Video recordings of all the main presenters are available on the HRB's YouTube channel.



2



Appendices

Appendix A

List of HRB publications in 2019

HRB REPORTS

Daly A and Craig S (2019) *Activities of Irish Psychiatric Units and Hospitals 2018. Main Findings*. HRB Statistics Series 39. Dublin: Health Research Board.

Daly A and Craig S (2019) *Irish Psychiatric Units and Hospitals Census 2019 Main Findings*. HRB Statistics Series 40, Dublin: Health Research Board.

Gill C, Lamont A and Moloney T (2019) *An evaluation of HRB investment in health research leaders*. Dublin: Health Research Board.

Health Research Board (2019) *Alcohol Treatment in Ireland 2011–2017*. Dublin: Health Research Board.

Health Research Board (2019) *Drug Treatment in Ireland 2011–2017*. Dublin: Health Research Board.

Health Research Board (2019) *Alcohol Treatment in Ireland 2012–2018*. Dublin: Health Research Board.

Health Research Board (2019) *Drug Treatment in Ireland 2012–2018*. Dublin: Health Research Board.

Health Research Board (2019) *Drug-related deaths and deaths among drug users in Ireland: 2004–2016. Figures from the National Drug-related Deaths Index*, Dublin: Health Research Board.

Health Research Board (2019) *Drug-related deaths and deaths among drug users in Ireland: 2008–2017. Figures from the National Drug-related Deaths Index*, Dublin: Health Research Board.

Irish Focal Point to the EMCDDA (2019) *Drugnet Ireland*, Issue 68, Winter. Dublin: Health Research Board.

Irish Focal Point to the EMCDDA (2019) *Drugnet Ireland*, Issue 69, Spring. Dublin: Health Research Board.

Irish Focal Point to the EMCDDA (2019) *Drugnet Ireland*, Issue 70, Summer. Dublin: Health Research Board.

Irish Focal Point to the EMCDDA (2019) *Drugnet Ireland*, Issue 71, Autumn. Dublin: Health Research Board.

Irish Focal Point to the EMCDDA (2019) *National Report (2018 data) to the EMCDDA by the Reitox National Focal Point, Ireland: new developments, trends*. Dublin: Health Research Board.

Hiney M (2019) *Outputs, outcomes and emerging impacts: Results from HRB awards completed in 2016/2017*. Dublin: Health Research Board.

Ward O and Kennelly H (2019) *Review of clinical research infrastructure in Ireland*. Dublin: Health Research Board.

EVIDENCE REVIEWS

McCarthy A, Quigley J and Long J (2019) *Healthy workplace tools in five countries: An evidence review*. Health Research Board, Dublin.

Minyard K, Manteuffel B, Smith CM, Atell BK, Landers G, Schlanger M and Dore E (2019) *Treatment services for people with co-occurring substance use and mental health problems. A rapid realist synthesis*. Health Research Board, Dublin.

Keane M, Moloney T, Lee C, O'Sullivan M and Long J (2019) *Vaccine injury redress programmes: An evidence review*. Health Research Board, Dublin.

Quigley J, Coyle C, O'Dwyer C, O'Brien D, O'Nolan G, Farragher L and Long J (2019) *Regional health organisations. An evidence review*. Health Research Board, Dublin.

Johnston BM, May P, McCauley R, McQuillan R, Rabbitte M, Honohan C, Mockler D and Thomas S (2019) *Out-of-hours specialist and generalist palliative care service provision: An evidence review*. Health Research Board, Dublin.

PEER-REVIEWED JOURNAL ARTICLES, AUTHORED BY HRB STAFF

Cannon A, Nally F, Collins A and **Lyons S** (2019) Trends in drug and alcohol treatment in prison in Ireland from 2009 to 2014. *International Journal of Prisoner Health*, 15(2) 105-113.

Daly A, Craig S and O'Sullivan E (2019) A profile of psychiatric in-patient admissions with no fixed abode (NFA) 2007-2016. *Irish Medical Journal*, 112 (1).

Doyle A, Lynn E and Lyons S (2019) Profile of fire fatalities in Ireland using coronial data. *Fire Safety Journal*,110: 102892.

Kelly C, **Craig S** and McConkey R (2019). Supporting family carers of children and adults with intellectual disability. Who gets priority? *Journal of Social Work* (online early). DOI: 10.1177/1468017319860312.

Kelly C, McConkey R and **Craig S** (2019) A case-study of policy change in residential service provision for adult persons with intellectual disability in Ireland. *Health and Social Care in the Community* (online early), DOI: 10.1111/hsc.12803.

Kelly C, McConkey R and **Craig S** (2019) Family carers of people with intellectual disabilities in Ireland: Changes over ten years. *Journal of Intellectual Disabilities* doi.org/10.1177%2F1744629519866313.

McConkey R, Kelly C and **Craig S** (2019) The prevalence of intellectual disability: a comparison of national census and register records. *Research in Development Disabilities* 89, 69-75.

McConkey R, Kelly F, **Craig S** and Keogh F (2019) Changes in the Provision of Day Services in Ireland to Adult Persons with Intellectual Disability. *Journal of Policy and Practice in Intellectual Disabilities* 16(1)13-20.

O'Dwyer C, Mongan, D, Millar SR et al. (2019) Drinking patterns and the distribution of alcohol-related harms in Ireland: evidence for the prevention paradox. *BMC Public Health* 19, 1323. <https://doi.org/10.1186/s12889-019-7666-4>.

Smyth B, **Daly A**, Elmusharaf K, Clarke M, **Craig S** and Cullen W (2019) Legislation targeting head shops selling new psychoactive substances and changes in drug related psychiatric admissions: A national database study. *Early Intervention in Psychiatry*, 2019, 1-8.

Smyth B, O'Farrell A and **Daly A** (2019) Cannabis use and associated health problems – what's the harm? *Irish Medical Journal*, Vol 112; No. 9; P1000.

Appendix B

List of HRB awards made in 2019 - to Principal Investigators

PROJECTS AND PROGRAMMES						
Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Evidence-based guidance in general practice: exploring general practitioner preferences, content prioritisation and dissemination	Royal College of Surgeons in Ireland	Applied Partnership Award	Dr	Emma	Wallace	€207,057
Implementation of Making Every Contact Count (MECC): developing a collaborative strategy to optimise and scale-up MECC	National University of Ireland Galway	Applied Partnership Award	Professor	Molly	Byrne	€239,988
Improving transition from child to adult health services for young people with cerebral palsy living in Ireland	Royal College of Surgeons in Ireland	Applied Partnership Award	Dr	Jennifer	Ryan	€204,327
Implementation of a Frailty Care Bundle for older adults in acute care	University College Cork	Applied Partnership Award	Professor	Corina	Naughton	€244,965
Health system foundations for effective regional integrated care organisations (RICOs) – co-producing evidence to inform the design of regional organisations to support integrated care in Ireland	Trinity College Dublin	Applied Partnership Award	Dr	Sara	Burke	€278,844
Embedding collective leadership to foster collaborative inter-professional working in the care of older people (Eclectic)	University College Dublin	Applied Partnership Award	Dr	Deirdre	O'Donnell	€89,766

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Establish and analyse the safety and efficacy of an integrated care model for the management of patients receiving oral anti-cancer agents in the community by an advanced nurse practitioner: A pilot study	NUI Galway/ Letterkenny General Hospital	Cancer Nursing Research Award	Dr	Janice	Richmond	€10,000
Evaluation of the clinical, psychological and economic effects of the Cystic Fibrosis Newborn Screening Programme: the Irish Comparative Outcomes Study of CF (ICOS) Part 2	University College Dublin	Investigator-Led Project Award	Professor	Patricia	Fitzpatrick	€367,956
Sláintemedicines – a roadmap to essential medicines entitlement for universal health coverage	Royal College of Surgeons in Ireland	Investigator-Led Project Award	Dr	Frank	Moriarty	€282,871
Study of the impact of dedicated recurrent miscarriage clinics in the Republic of Ireland	University College Cork	Investigator-Led Project Award	Dr	Keelin	O'Donoghue	€368,997
Development of a model of care for osteoarthritis in primary care in Ireland – A mixed methods study	Royal College of Surgeons in Ireland	Investigator-Led Project Award	Dr	Helen	French	€365,886
Transitions of care in advanced chronic kidney disease	University of Limerick	Investigator-Led Project Award	Professor	Austin	Stack	€369,210
Tracking trajectories of psychopathology from infancy to young adulthood: an Irish national longitudinal cohort study	Royal College of Surgeons in Ireland	Investigator-Led Project Award	Professor	Mary	Cannon	€357,142
The Test of Complex Syntax: final development phase, standardisation and diagnostic accuracy with respect to children with developmental language disorder (DLD) and those at risk of language disorder	University College Cork	Investigator-Led Project Award	Dr	Pauline	Frizelle	€368,065

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Bile acids as a host trigger of chronic infecting pathogens in respiratory disease	University College Cork	Investigator-Led Project Award	Professor	Fergal	O'Gara	€367,992
The identification of plasma protein markers of antipsychotic drug treatment response in first-episode psychosis; a proteomic analysis of baseline plasma samples from the OPTiMiSE and PSYSCAN studies	Royal College of Surgeons in Ireland	Investigator-Led Project Award	Professor	David	Cotter	€369,583
Molecular evolution of metastatic HER2-positive breast cancer	Royal College of Surgeons in Ireland	Investigator-Led Project Award	Professor	Bryan	Hennessy	€369,002
Wound infections: biofilms and the search for novel antimicrobial agents	Royal College of Surgeons in Ireland	Investigator-Led Project Award	Professor	Eoghan	O'Neill	€366,087
An investigation of the prevalence and molecular epidemiology of vancomycin-resistant <i>Enterococcus faecium</i> in Irish hospitals using whole-genome sequencing	Dublin Dental University Hospital	Investigator-Led Project Award	Professor	David	Coleman	€368,856
3D collagen-based scaffolds as gene delivery platforms for the treatment of human breast cancer	Royal College of Surgeons in Ireland	Investigator-Led Project Award	Dr	Caroline	Curtin	€369,955
Analysis of the oral metagenome for markers of malignant transformation of oral leukoplakia	Dublin Dental University Hospital	Investigator-Led Project Award	Dr	Gary	Moran	€357,585
To identify molecular signatures that can predict disease onset in 'at-risk ACPA+' individuals and disease progression in RA patients	Trinity College Dublin	Investigator-Led Project Award	Professor	Ursula	Fearon	€365,645
Optimising 40 Hz sensory stimulation protocols for Alzheimer's disease treatment	Trinity College Dublin	Investigator-Led Project Award	Professor	Michael	Rowan	€369,993

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
A new cell-free DNA liquid biopsy assay to predict bevacizumab outcome in metastatic colorectal cancer patients	Royal College of Surgeons in Ireland	Investigator-Led Project Award	Professor	Annette	Byrne	€368,715
Switching on the light: Reprogramming T cell metabolism for novel HIV Cure interventions	University College Dublin	Investigator-Led Project Award	Dr	Virginie	Gautier	€368,772
FIREFLY: Follow-up of inflammatory responses and multiorgan outcomes following neonatal brain injury	Trinity College Dublin	Investigator-Led Project Award	Professor	Eleanor	Molloy	€369,890
Using guanine to re-sensitise MRSA to methicillin: Is purine nucleotide homeostasis the Achilles heel of MRSA antibiotic resistance?	National University of Ireland Galway	Investigator-Led Project Award	Professor	James	O'Gara	€369,887
Immunometabolic manipulation of pulmonary immunity – towards TB host-directed therapy	Trinity College Dublin	Investigator-Led Project Award	Professor	Joseph	Keane	€366,993
NK cell restore – Can GLP-1 therapy restore tumour immunity in severely obese patients?	University College Dublin	Investigator-Led Project Award	Professor	Donal	O'Shea	€311,376
Prediction of radiation toxicity in prostate cancer patients using Raman spectroscopy	Technological University Dublin	Investigator-Led Project Award	Professor	Fiona	Lyng	€368,637
Stratification of presymptomatic amyotrophic lateral sclerosis: the development of novel imaging biomarkers	Trinity College Dublin	Joint Programming Initiative in Neurodegenerative Diseases	Professor	Peter	Bede	€1,554,819
FAIRVASC – building registry interoperability to inform clinical care	Trinity College Dublin	EJP Co-fund in Rare Diseases	Professor	Mark	Little	€2,229,091
Examining the interplay of the immune system with brain cells in Parkinson's disease	Trinity College Dublin	Investigator-Led Project Award	Professor	Maeve	Caldwell	€369,944

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Mapping Parkinson's disease needs and services in Ireland to inform service planning	University College Cork	Patrick Quinn Awards for Parkinson's Research	Dr	Suzanne	Timmons	€212,356
Collaboration Agreement to Establish a Research Collaborative for Quality and Patient Safety Phase III	Royal College of Physicians of Ireland	Research Collaborative in Quality and Patient Safety	Dr	Lucia	Prihodova	€298,368
Development and validation of a risk stratification tool for assessment of maternal and neonatal morbidity and mortality using data from the National Maternal and Newborn Clinical Management System	University College Cork	Secondary Data Analysis Project Award	Dr	Fergus	McCarthy	€303,217
Evidence for policies to prevent chronic conditions (EPICC)	University College Cork	Secondary Data Analysis Project Award	Professor	Patricia	Kearney	€249,911
Disparities in health outcomes of chronic kidney disease between men and women in the Irish health system	University of Limerick	Secondary Data Analysis Project Award	Professor	Austin	Stack	€249,223
What dictates the extent of evidence accumulation in human decision-making?	University College Dublin	SFI-HRB-Wellcome Research Partnership	Dr	Simon	Kelly	€834,396
Mapping the miRNA atlas of CF airway epithelial cells using patient-derived gene-edited iPSC	Royal College of Surgeons in Ireland	SFI-HRB-Wellcome Research Partnership	Dr	Irene	Oglesby	€336,485
Food-based biomarkers, diet quality and cardiometabolic health	University College Dublin	US-Ireland R&D Partnership Award	Professor	Lorraine	Brennan	€889,104
Study of queuosine salvage and function in eukaryotes: a forgotten micronutrient	Trinity College Dublin	US-Ireland R&D Partnership Award	Dr	Vincent	Kelly	€860,712

CAPACITY BUILDING AND LEADERSHIP ENHANCEMENT

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Computational evaluation of morphologic tumour tissue features as diagnostic and prognostic predictors of lung cancer	Letterkenny Institute of Technology	Cancer Prevention Fellowship Programme Reintegration Grant	Dr	Claire	Meaney	€23,104
Collaborative Doctoral Programme in Chronic Disease Prevention (CDP-CDP)	National University of Ireland Galway	Collaborative Doctoral Award in Patient-focused Research	Professor	Molly	Byrne	€1,499,420
Diabetic foot disease: from prevention to treatment to improved patient outcomes (DFD PRIMO)	National University of Ireland Galway	Collaborative Doctoral Award in Patient-focused Research	Professor	Timothy	O'Brien	€1,499,983
Designing and developing technologies for palliative care	All Ireland Institute of Hospice and Palliative Care	Conference and Event Sponsorship Scheme	Dr	Mary	Rabbitte	€4,759
Fourth Annual HRI Public and Patient Involvement Summer School	University of Limerick	Conference and Event Sponsorship Scheme	Dr	Jonathan	Salsberg	€5,000
Towards a refreshed national carers strategy – from research to policy	Care Alliance Ireland	Conference and Event Sponsorship Scheme	Ms	Zoe	Hughes	€4,980
Translating neurological research into clinical practice	Royal College of Surgeons in Ireland	Conference and Event Sponsorship Scheme	Ms	Bridget	Doyle	€5,000
PPI in vision research – World Sight Day – Retina 2019	Fighting Blindness	Conference and Event Sponsorship Scheme	Dr	Laura	Brady	€5,000
Launch of the Clinical Practice Guideline for Nutrition in Pregnancy – Translation of Evidence into Practice	University College Dublin	Conference and Event Sponsorship Scheme	Dr	Eileen	O'Brien	€5,000
The Nutrition Society Annual Irish Section Meeting	University of Limerick	Conference and Event Sponsorship Scheme	Dr	Eibhlís	O'Connor	€5,000

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
National Conference on Integrated Care in Ireland	National Rehabilitation Hospital	Conference and Event Sponsorship Scheme	Professor	Áine	Carroll	€5,000
The First Annual Irish Cancer Epidemiology Network Symposium 2019	Royal College of Surgeons in Ireland	Conference and Event Sponsorship Scheme	Dr	Maeve	Mullooly	€4,354
Standing up for Science Workshop	Sense about Science	Conference and Event Sponsorship Scheme	Ms	Síle	Lane	€2,325
Early-career researcher event	University College Cork	Conference and Event Sponsorship Scheme	Dr	Kate	O'Neill	€4,930
Seminar: Supporting Family Carers in the Workplace	University College Dublin	Conference and Event Sponsorship Scheme	Dr	Attracta	Lafferty	€5,000
Comparison of staphylococcal species from the oro-nasal cavity, periodontal pockets and foot ulcers of patients with type II diabetes: a potential microbial reservoir for diabetic foot ulcer infection	Dublin Dental University Hospital	Emerging Investigator Award	Dr	Brenda	McManus	€623,331
Developing a new approach to stroke rehabilitation for the upper limb based on TMS neurofeedback	Trinity College Dublin	Emerging Investigator Award	Dr	Kathy	Ruddy	€711,946
Harnessing the power of the gut-lung axis: how dietary short-chain fatty acids balance inflammatory outcomes in chronic obstructive pulmonary disease	Trinity College Dublin	Emerging Investigator Award	Dr	Natalia	Munoz-Wolf	€799,545
Providing Improved care for self-harm: a mixed-methods study of intervention, economic and implementation outcomes from a national clinical programme	University College Cork	Emerging Investigator Award	Dr	Eve	Griffin	€736,811

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Engineering RNA-based therapeutics for treatment of sepsis and sepsis-induced multiple organ dysfunction syndrome	Massachusetts Institute of Technology	Emerging Investigator Award	Dr	Piotr	Kowalski	€799,937
SCaRLeT: Sex differences in Cardiovascular Risk across Life course Transitions	University of Bristol	Emerging Investigator Award	Dr	Linda	O'Keeffe	€699,546
Evidence synthesis and translation of findings for national clinical guideline development: addressing the needs and preferences of guideline development groups	Royal College of Surgeons in Ireland	Emerging Investigator Award	Dr	Barbara	Clyne	€727,136
Defining the consequences of innate immune training on protective versus pathogenic T cell responses in patients with tuberculosis	Trinity College Dublin	Emerging Investigator Award	Dr	Sharee	Basdeo	€699,963
The impact of mutations in PI3K/AKT pathway gene loci on response to PI3K inhibitors	Dublin City University	Emerging Investigator Award	Dr	Alex	Eustace	€799,944
Investigating breast cancer risk factors to understand breast cancer epidemiological outcomes	Royal College of Surgeons in Ireland	Emerging Investigator Award	Dr	Maeve	Mullooly	€752,127
Fulbright-HRB Health Impact Awards 2019	University College Dublin	Fulbright-HRB Health Impact Award	Dr	Suja	Somanadhan	€6,000
Fulbright-HRB Health Impact Awards 2019	Trinity College Dublin	Fulbright-HRB Health Impact Award	Professor	Brendan	Kelly	€12,000
Fulbright-HRB Health Impact Awards 2019	University College Cork	Fulbright-HRB Health Impact Award	Professor	Jonathan	Hourihane	€12,000

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Professor Mary McCarron – HRB Impact Award 2019	Trinity College Dublin	HRB Impact Award	Professor	Mary	McCarron	€50,000
Are recreational waters a transmission route for antibiotic resistance to humans?	National University of Ireland Galway	Summer Student Scholarship	Mr	Raza	Abbas Syed	€2,400
Investigating the composition of acute ischaemic stroke blood clots	National University of Ireland Galway	Summer Student Scholarship	Mr	Colm	Kelly	€2,400
Correlating blood monocyte subpopulation analysis with the results of elective coronary angiography	National University of Ireland Galway	Summer Student Scholarship	Ms	Rachael	Power	€2,400
Blood pressure control in patients identified as having a previous stroke or transient ischemic attack in general practice	National University of Ireland Galway	Summer Student Scholarship	Mr	David	McCann	€2,400
Suicide and self-harm in Irish Travellers presenting to the emergency department: clinical outcomes and engagement with mental health services	National University of Ireland Galway	Summer Student Scholarship	Mr	Bryan	Tanner	€2,400
An implantable pressure sensor for the measurement of venous pressure	National University of Ireland Galway	Summer Student Scholarship	Mr	John	Pereira	€2,400
Influence of the tumour microenvironment on the pathogenesis of colon cancer	National University of Ireland Galway	Summer Student Scholarship	Mr	Michael	Craughwell	€2,400
Bariatric care requirements in Ireland: developing policy guidance and evaluation (BRIDGE) Study 1 – Regional bariatric referral patterns, 2010–2019	National University of Ireland Galway	Summer Student Scholarship	Mr	Robert	Hughes	€2,400

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Use of wearable devices to monitor motor disability in multiple sclerosis – A real world pilot study	National University of Ireland Galway	Summer Student Scholarship	Mr	Daniel	Coyle	€2,400
Can heat shock protein (HSP) inhibitors induce cell death in adrenocortical carcinoma (ACC) under induced hyperthermia?	National University of Ireland Galway	Summer Student Scholarship	Ms	Muireann	Keating	€2,400
Investigating immunometabolic compounds in obesity-driven inflammation	National University of Ireland Maynooth	Summer Student Scholarship	Ms	Natalia	Otrebska	€2,400
Effect of microcracks formation in the cortical bone from osteoporotic and healthy patients on osteoclasts and osteoblasts	National University of Ireland Galway	Summer Student Scholarship	Mr	Raymond	Cheong	€2,400
Carbon monoxide as a therapy in epithelial barrier dysfunction of lung models of sepsis	National University of Ireland Galway	Summer Student Scholarship	Mr	Jonathan	Costello	€2,400
Knowledge of and attitude towards HPV and the HPV vaccine among inflammatory bowel disease patients	National University of Ireland Galway	Summer Student Scholarship	Ms	Kate	Finn	€2,400
Unravelling the chemo-resistant properties of tumour-associated stromal cells within the breast tumour microenvironment	National University of Ireland Galway	Summer Student Scholarship	Mr	Abdullah	AlKhunaizi	€2,400
Acute dialysis in Galway University Hospital, a utilisation audit	National University of Ireland Galway	Summer Student Scholarship	Ms	Michaela Jean	van der Walt	€2,400
The clinical viability of telemedicine in the management of type 1 diabetes in the west of Ireland	National University of Ireland Galway	Summer Student Scholarship	Mr	Brian	Thompson	€2,400

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Non-invasive detection of triple negative breast cancer using extracellular vesicle (EV) encapsulated microRNAs	National University Ireland Galway	Summer Student Scholarship	Ms	Karin	Ishak	€2,400
Evaluation of microwave imaging prototype for osteoporosis monitoring	National University of Ireland Galway	Summer Student Scholarship	Mr	Daniel	Kelly	€2,400
Assisting with the implementation and evaluation of the Irish Men's Sheds Association "Sheds for Life" project	Waterford Institute of Technology	Summer Student Scholarship	Ms	Nicola	Kelleher	€2,400
Injuries in non-horseracing-related activities: Is it time to focus on injury prevention outside of race day?	Dublin City University	Summer Student Scholarship	Ms	ElÁine	McDermott	€2,400
Comparative migration and angiogenic properties of mesenchymal stem cells derived from bone marrow and umbilical cord	National University of Ireland Galway	Summer Student Scholarship	Mr	Ahmed	Eltayeb	€2,400
Trends and prevalence of gestational diabetes mellitus among women giving birth in Irish hospitals from 2008 to 2016: Risk factors and outcomes	Dublin City University	Summer Student Scholarship	Ms	LorrÁine	Tham	€2,400
Elucidation of the neural networks underlying sex differences in vulnerability to developing depression	University College Cork	Summer Student Scholarship	Ms	Harsha	Daswani	€2,400
The role of diabetes-related distress in the association between body mass index and physical activity in type 2 diabetes mellitus: a mediator-moderator analysis	National University of Ireland Galway	Summer Student Scholarship	Ms	Jia Leng	Lim	€2,400

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
The multi-finger force deficit: can it classify motor neurone disease subtypes?	Trinity College Dublin	Summer Student Scholarship	Mr	Simon	Bergin	€2,400
My health starts with me, the 'how to' of research with people with intellectual disability: building a toolkit to promote the voice of people with intellectual disability in health research	Trinity College Dublin	Summer Student Scholarship	Ms	Niamh	Donohoe	€2,100
Exploring a novel biofilm control mechanism in a cerebrospinal fluid isolate of Staphylococcus epidermidis responsible for a device-related infection	National University of Ireland Galway	Summer Student Scholarship	Ms	Emer	Brennan	€2,400
Functional loss among older adults with intellectual disability and dementia: findings from the Intellectual Disability Supplement to The Irish Longitudinal Study on Ageing (IDS-TILDA)	Trinity College Dublin	Summer Student Scholarship	Ms	Rachel	Kirwan	€2,400
Genomic profiling of intestinal immune activity using T cell receptor sequencing	Trinity College Dublin	Summer Student Scholarship	Mr	Ciaran	O'Connor	€2,400
Investigate the role of epigenetics in pseudoexfoliation glaucoma	University College Dublin	Summer Student Scholarship	Ms	Niamh	Mahon	€2,400
Prescribing patterns in a long-term care psychiatric facility in Ireland: a descriptive study	Trinity College Dublin	Summer Student Scholarship	Ms	Anne-Marie	Doherty	€2,400
Measuring parenting stress, quality of life and resilience related to caring for a child with mucopolysaccharidosis (MPS)	University College Dublin	Summer Student Scholarship	Ms	Hannah	Bristow	€2,400

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Effect of edaravone, an approved treatment for motor neurone disease, on proliferation of human neuronal stem cells	National University of Ireland Galway	Summer Student Scholarship	Ms	Claire	Coleman	€2,400
Development of a pre-clinical test to detect dysfunctional haemostasis	Royal College of Surgeons in Ireland	Summer Student Scholarship	Ms	Aleece	Warner	€2,400
The association between early childhood chronic illness and psychological difficulties in adolescence	Royal College of Surgeons in Ireland	Summer Student Scholarship	Mr	Ross	King	€2,400
Investigation of the effect of asthma patient serum on MSC cytoprotective function in vitro	National University of Ireland Maynooth	Summer Student Scholarship	Mr	Colm	O'Sullivan	€2,400
Testing novel SRF inhibitors in breast and prostate cancer	University College Dublin	Summer Student Scholarship	Ms	Kuan Yee	Ng	€2,400
Language development in twins: a comparison with closely and widely spaced siblings	University College Cork	Summer Student Scholarship	Ms	Maeve	O'Sullivan	€2,400
Validation of blood-based samples from the OPTiMiSE (OPTimisation of Treatment and Management of Schizophrenia in Europe) study	Royal College of Surgeons in Ireland	Summer Student Scholarship	Mr	Kehinde	Babatunde	€2,400
Antibiotics adherence monitoring and use of technologies in children with cystic fibrosis: a systematic review	Royal College of Surgeons in Ireland	Summer Student Scholarship	Ms	Evelyn	Flynn	€2,400
Examining the role of long non-coding RNAs in regulating microcalcification in ductal carcinoma In situ	Royal College of Surgeons in Ireland	Summer Student Scholarship	Mr	Giovanni	Andrei Saw Ye Jeune	€2,400

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
The role of activated astrocytes in Alzheimer's disease	Trinity College Dublin	Summer Student Scholarship	Ms	Adina	Mac Mahon Copas	€2,400
The characteristics and demographics of the Irish Enroll-HD cohort: an interrogation of the database	National University of Ireland Galway	Summer Student Scholarship	Ms	Sinead	Burke	€2,400
Assessing the effect of the acidic tumour microenvironment on T cell function	National University of Ireland Maynooth	Summer Student Scholarship	Ms	Sarah	Giffney	€2,400
Eudemonic wellbeing in older adults	Trinity College Dublin	Summer Student Scholarship	Mr	Jordan	Collins	€2,400
Investigating the effect of myeloperoxidase inhibition in monocytes stimulated with anti-myeloperoxidase antibodies on IL-1 β production and glycolysis	Trinity College Dublin	Summer Student Scholarship	Ms	Michele	O'Sullivan	€2,400
Determining the effect of exercise in modulating the inflammatory blood profile of patients with metastatic prostate cancer	Trinity College Dublin	Summer Student Scholarship	Mr	Leon	Seow	€1,800
A profiling study of physical function and performance in a population of supplemental oxygen and/or long-term non-invasive ventilation users attending a respiratory outpatient service	Trinity College Dublin	Summer Student Scholarship	Mr	Robert	Keegan	€2,400
Novel strategies to promote cartilage repair in the OA joint	Trinity College Dublin	Summer Student Scholarship	Ms	Cliodhna	Daly	€2,400
A search for variants associated with autism spectrum disorder in a multiplex family	Trinity College Dublin	Summer Student Scholarship	Mr	Kejan	Lim	€2,400

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Predictive value of a lung biopsy, in the paediatric Down Syndrome population, for determining the utility for cardiac surgical repair	Trinity College Dublin	Summer Student Scholarship	Ms	Alison	Bell	€2,100
Investigating macrophage activation in response to damage-associated molecular patterns in multiple sclerosis	Royal College of Surgeons in Ireland	Summer Student Scholarship	Ms	Caitlyn Joy Yang Xin	Loo	€2,400
Utility of the STarTBack Tool for risk stratification in people with back pain presenting to a physiotherapy service in the emergency department	Royal College of Surgeons in Ireland	Summer Student Scholarship	Ms	Louise	McDonagh	€2,400
Assessment of novel gene delivery vectors with collagen-based scaffolds for the abrogation of human breast cancer cells	Royal College of Surgeons in Ireland	Summer Student Scholarship	Mr	Jack	Bell	€2,400
Establishing P2X7 targeting as a novel treatment strategy for seizures in nenoates	Royal College of Surgeons in Ireland	Summer Student Scholarship	Mr	Razi	Alalqam	€2,400
The impact of social prescribing as a method to increase engagement of older adults in community activities	Trinity College Dublin	Summer Student Scholarship	Ms	Ruth	Aherne	€2,400
A survey of clinician views of issues relevant to the implementation of the nationally agreed Irish Early Warning System (I-MEWS)	Trinity College Dublin	Summer Student Scholarship	Ms	Sofia	O'Byrne	€2,400
First-episode psychosis (FEP) and substance use; impact of Early Intervention Service (EIS)	University College Cork	Summer Student Scholarship	Ms	Emily	Moloney	€2,400

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Modulating the microbiota-gut-brain axis with putative psychobiotics – effect on stress and anxiety measures in a human population	Trinity College Dublin	Summer Student Scholarship	Ms	Grainne	Cremin	€1,800
Developing epiCaPturE: a non-invasive urine test for early detection of aggressive prostate cancer	University College Dublin	Summer Student Scholarship	Ms	Laoise	McArdle	€2,400
Can novel cancer driver genes be identified by analysing mutations in cancer genomes?	Royal College of Surgeons in Ireland	Summer Student Scholarship	Ms	Xiangmei	Cui	€2,400
Fidelity of stress-reduction interventions in the first 1000 days	University College Cork	Summer Student Scholarship	Mr	Gregory	Gorman	€2,400
What wellbeing supports do undergraduate students prioritise: analysis of qualitative survey responses	National University of Ireland Galway	Summer Student Scholarship	Ms	Marie	Simpson	€2,400
Obesity and oesophageal cancer: role of the fat tissue in controlling energy and inflammation	Trinity College Dublin	Summer Student Scholarship	Ms	Tammy	Maher	€2,400
Validation of radiosensitising microRNAs for oesophageal cancer	Trinity College Dublin	Summer Student Scholarship	Mr	Sean	O'Brien	€2,400
The relationship between maternal attachment and maternal postnatal depression and the effects of infant massage on maternal postnatal depression scores and developmental progress at 4 months	University College Cork	Summer Student Scholarship	Ms	Aileen Bernadette	O'Mahony	€1,800

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Effect of load variation on shoulder function, pain and tendon health	University of Limerick	Summer Student Scholarship	Ms	Anna	Healy	€2,400
Factors that influence men to study speech and language therapy	Trinity College Dublin	Summer Student Scholarship	Mr	Naveen	Kurian	€2,400
Infection prevention and control and sustainable dentistry: a comparative life cycle analysis of reusable and single-use dental personal protective clothing (gowns)	Trinity College Dublin	Summer Student Scholarship	Ms	Komal	Virk	€2,400
Farmers Have Hearts': assessing the effectiveness of a behaviour change programme designed to improve the health status of Irish farmers	University College Cork	Summer Student Scholarship	Ms	Grace	Richardson	€2,400
A bioengineered in vitro disease model of pancreatic ductal adenocarcinoma integrating cancer cell and fibroblast populations with a tuneable 3D tumour microenvironment to review metastatic progression	Royal College of Surgeons in Ireland	Summer Student Scholarship	Ms	Sarah	Cullen	€2,400
Determination of the optimal management strategy for unilateral cervical facet fractures	Royal College of Surgeons in Ireland	Summer Student Scholarship	Mr	JAKE	McDonnell	€2,400
Primary care interventions to prevent hospital readmissions among older adults: a scoping review in general practice	University College Dublin	Summer Student Scholarship	Ms	Mary Ellen	McMahon	€2,400

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total awarded
Can we make restraint a last resort intervention in nursing homes in Ireland? An exploration of the knowledge, experience and attitudes of nursing home staff regarding the use of de-escalation	Waterford Institute of Technology	Summer Student Scholarship	Ms	Malgorzata	Ochocka	€2,400
Interrogating steroid non-responsiveness in the Irish paediatric eosinophilic oesophagitis population	National University of Ireland Maynooth	Summer Student Scholarship	Ms	Debra	Gahan	€2,400
Side effects and mechanisms of action of 0.02% atropine on visual function and ocular physiology	Technological University Dublin	Summer Student Scholarship	Ms	Jennifer	O'Neill	€2,400
Contraction frequency as a modulator of metabolism: the role of different muscle fibre type in substrate utilisation	Dublin City University	Summer Student Scholarship	Mr	Cian	Sutcliffe	€2,400
Non-viral gene therapy approaches for osteoarthritis	Royal College of Surgeons in Ireland	Summer Student Scholarship	Mr	Armaan	Handa	€2,400
A study of the clinical characteristics of those with resistant hypertension and young adults with hypertension referred to a specialist hypertension clinic	Trinity College Dublin	Summer Student Scholarship	Mr	Richard	Farnan	€2,400
Assessment of functional capacity, pulmonary function and quality of life in individuals with pulmonary hypertension	Dublin City University	Summer Student Scholarship	Mr	Cian	Monaghan	€2,400
Screening and cervical cancer: identification of interval cancers and analysis of socio-demographic and clinical characteristics by screening status	University College Cork	Summer Student Scholarship	Mr	Daíre	O'Gorman	€2,400

INFRASTRUCTURE AND NETWORKS

Title	Host institution	Scheme	Lead Researcher title	Lead Researcher forename	Lead Researcher surname	Total Awarded
Transition funding for CTI for 2020 to allow time for design and development of a new funding model	Irish Clinical Oncology Research Group Limited	Cancer Trials Ireland	Professor	Linda	Coate	€3,561,620
Dementia and Neurodegeneration Network Ireland	Trinity College Dublin	Dementia and Neurodegeneration Network Ireland	Professor	Brian	Lawlor	€180,490
Development of a proof of concept data environment for health and related research under the DASSL model	National University of Ireland Galway	Proof of concept technical model for 'DASSL'	Dr	Simon	Wong	€370,000

Appendix C

HRB Co-funded awards				
Scheme	Cofunding partner	Co-funding allocation	Total award	HRB share
Applied Partnership Awards	Health Service Executive	€39,994	€239,991	€199,997
Applied Partnership Awards	HSE South SouthWest Hospital Group	€50,000	€244,965	€194,965
Applied Partnership Awards	Irish College of General Practitioners	€36,303	€217,815	€181,512
Applied Partnership Awards	National Clinical Programme for Older People (NCPOP)	€15,000	€89,940	€74,940
Applied Partnership Awards	Sláintecare Implementation Office and HSE	€79,997	€278,844	€198,847
Applied Partnership Awards	The Central Remedial Clinic	€35,200	€204,328	€169,128
Cancer Nursing Award	Irish Cancer Society, NCCP/ ONMSD	€148,324	€158,324	€10,000
Cancer Prevention Fellowship Programme Reintegration Grant	Irish Cancer Society	€11,552	€23,104	€11,552
EJP Co-fund in Rare Diseases	European partner agencies in France, Sweden, Poland, Czech Republic, the UK, and the Netherlands	€1,900,731	€2,229,091	€328,360
Joint Programming Initiative in Neurodegenerative Diseases	European partner agencies in France, the UK, and Canada	€1,184,966	€1,554,819	€369,853
Patrick Quinn Award	Parkinsons Association (Patrick Quinn Legacy)	€582,332	€582,332	€0
Research Collaborative in Quality and Patient Safety	HSE National Quality Improvement Team	€255,954	€298,368	€42,414
Research Collaborative in Quality and Patient Safety	National Medication Safety Programme, HSE	€129,701	€259,403	€129,702

HRB Co-funded awards

Scheme	Cofunding partner	Co-funding allocation	Total award	HRB share
Research Collaborative in Quality and Patient Safety	Quality and Patient Safety, Cork University Hospital	€139,337	€278,675	€139,338
Research Collaborative in Quality and Patient Safety	Secondary Data Analysis Projects	€111,410	€610,627	€499,217
Research Collaborative in Quality and Patient Safety	Department of Sociology, TCD	€57,410	€307,410	€250,000
Research Collaborative in Quality and Patient Safety	National Perinatal Epidemiology Centre	€54,000	€303,218	€249,218
SFI-HRB-Wellcome Research Partnership	Wellcome Trust UK and Science Foundation Ireland	€878,160	€1,170,881	€292,720
US-Ireland R&D Partnership Award	Science Foundation Ireland	€874,907	€1,749,815	€874,907
Grand total		€6,473,869	€10,191,322	€3,717,453

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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