Annual Report





Research. Evidence. Action.

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€58.6m

awarded (including
€19.1m co-funding)



Outcomes and Impact in 2016

HR^B

1119

awards across 30 host institutions (including universities, hospitals, patient organisations, charities and public sector health organisations)

000

patients participating in patients participating in trials at the three HRB Clinical Research Facilities (CRF)

2,403

cancer patients recruited on the Cancer Trials Ireland clinical trials

2000



€8.9m

Leveraged from H2020 for 12 health-related projects



344

clinical trials underway at the three HRB Clinical Research Facilities (CRF)



40,000

11:11.1

The National Drug
Treatment Reporting
System (NDTRS) is the
first HRB information
system to go live on
LINK. Data on over
40,000 treatment
episodes migrated.

20
HRB reports
published



663

research jobs supported



A look back over 30 years of gro

Budget:

IR£2.3 - IR£1.6m

HRB formed by the amalgamation of Medico-Social Research Board and the Medical Research Council of Ireland

National Drug Treatment Reporting System established First HRB corporate plan identifies R&D for health, increasing post grad training, promoting college /hospital/industry linkage and developing private or external funding support as key

Computerisation of National Psychiatric Inpatient Reporting System and Three County Register

Move to external peer review process

IR£1.7 - IR£3.5m

HRB scales up awareness about EU funding

National Intellectual Disability Database set up

First assessment of health services research capability shows that while it is underdeveloped, Ireland has good strengths on which HSR capacity can be built if funding is provided and people collaborate



1986-1991

1992-1996

Traveller studies published showing

- · 50% travellers housed compared to 5% in 1960.
- 50% live in Cork, Galway, Limerick and Dublin
- Fertility and mortality rates are x2 of settled population

Peter Humphries, TCD, discovers gene causing a form of inherited blindness Kathleen Quane and Tommie McCarthy, UCC, identify molecular defect responsible for central core disease

Dermot Walsh, HRB, identifies a specific gene contributing to schizophrenia risk

Major Irish / US study on alcohol dependence gets underway using data from HRB population based registers

Some key outcomes

Some key developments





wth and success highlights

IR£3.5m - €13.2m

Government publish first health research strategy Making knowledge work for health

Government matched funding agreement with Wellcome Trust secures €6million for biomedical research

Launched programme grants worth €12 million over next five years Electronic grant applications process trialled

HRB becomes Irish Focal point for the European Monitoring Centre on Drugs and Drug Addiction



€22.8m - €43.2m

HRB Drugs library opens

National Physical and Sensory Disability Database established

HRB *Investment programme in health and wealth* secures €50m in capital funding for next 5 years

Started Clinician Scientist funding

Partnership with Wellcome to set up Clinical Research Facilities in Ireland National Drug-Related Deaths Index established

HRB funds ICORG (now Cancer Trials Ireland) to co-ordinate cancer clinical trials on island of Ireland

Mant report on *Primary Care* R & D in Ireland, points to need for HRB Centre for Primary Care Research

1997-2001

Peadar Kirke, HRB, and team from Trinity and NIH in United States, identify that up to 70% of Neural Tube Defects, such as Spina Bifida, could be prevented by taking folic acid 2002-2006

First Picture of Health
publication captures outcomes
of our funded research in
layman's terms

HRB's NIDD cited in budget speech supporting case for securing €400m for disability services

3D imaging equipment provided to 7 hospitals to support perinatal research and improve outcomes for mums and babies

First gene for Motor Neuron Disease identified by Orla Hardiman and her international team shedding light on root cause of disease

Bernard Mahon's work at Maynooth University shows that a naturally occurring antibiotic in the lungs can disrupt cell walls of bacteria like MRSA





#HRB30

€53m - €39.5m

HRB Centres in diet and health and primary care research established. These go on to influence sugar tax and a range of new clinical guidelines for GPs

€19 million for new PhD programmes to advance skills base in cancer biology, immunology, diagnostics and health services research (now SPHeRE Programme)

HRB Making an impact report led to payback framework to measure the impact of funded research HRB publishes Review of Population Health Services and Health Services Research in Ireland

New strategic business plan shifts focus of funding to patient-oriented, population health and health services research



€37.1m - €43.8m

Transformed infrastructure for clinical research in Ireland opening 3 clinical research facilities, creating 4 new clinical trial networks, establishing a Trial Methodology Research Network and a hub to co-ordinate trials, HRB CRCI

Increased funding support for population health and health services research

Progress to consolidate all health information systems on one platform to better support service planning HRB Evidence Centre established and delivering for key policy areas such as alcohol, suicide and water fluoridation

New HRB strategy 2016 - 2020

Public and Patient Involvement takes centre stage

New online grant management system revolutionises approach to managing grants across entire lifecycle

2007-2011

First report on drug-related deaths shows poisoning as main cause of death

Commercial development of a diagnostic tool for automated cancer screening on foot of HRB funding to Paul Whelan in DCU

New statistical model developed to help hospitals manage blood stocks by Anthony Staines in DCU

Mary Fitzsimons, Beaumont Hospital, develops epilepsy patient record which is now being used as a model for chronic disease management Luke O Neill in TCD identifies master switch which turns the immune system on in response to harmful bacteria

HRB report highlights social consequences of alcohol use

Research at a population level, as fostered by Hannah McGee's HesSSOP study and SLAN survey 2007, helped increase policymaker appreciation of the value of robust population data and led to funding of TILDA and GUI

Denis O'Mahony, UCC, develops STOPP START pharmacy management tool that could save health services €180 million per year

2012-2016

HRB Alcohol Survey reveals 1.35million Irish people drinking to harmful levels

Report confirms that there is no definitive evidence that community fluoridation of water supply has negative health effects

Steve Thomas, TCD, produces Resilience Study which provides a forensic analysis of how the health system coped with decreasing of resources

Fergal Malone, RCSI, and Perinatal Ireland team generate new guidelines for monitoring babies in the womb Declan Soden, UCC, develops new tool for zapping inoperable cancer tumours

Kathleen Bennett, RCSI, discovers Aspirin may have important role in reducing breast cancer

Mary Cannon, RCSI, increases national focus on youth mental health with some stark findings in the area

Tailor X trial brings personalised medicine into breast cancer care

Chairman and **Chief Executive** Overview



Dr Declan Bedford Chairman



Dr Graham Love Chief Executive

During 2016, the HRB launched a new organisational strategy 2016-2020, Research, Evidence, Action, It charts a clear, ambitious course over this five-year period. A rebrand in response to a stakeholder consultation also reflected a new energy and direction for the organisation.

This internal shift in momentum was mirrored externally as we continued to grow the reputation of the HRB, both nationally and internationally. It was particularly encouraging to see the use of HRB evidence to inform decision-making in policy and practice in relation to the introduction of a new Food Pyramid and the Public Health (Alcohol) Bill. Our participation on national and European boards has also helped increase recognition of the contribution that the HRB is making. This is particularly evident in key areas including data linkage, open science, clinical effectiveness and research integrity.

During the first year of the new strategy there was solid progress against HRB objectives. Some key achievements included:

- · Launching a selection of new awards aligned to our strategic priorities, such as:
 - **Definitive Intervention and** Feasibility Awards to support healthcare interventions.
 - > Applied Partnership Awards to bring researchers and knowledge users

together to focus on research questions highlighted in the Irish health and social care system.

- **Investigator Led Projects** to create new knowledge to address major health challenges in society and have an impact on future healthcare.
- **HRB** Collaboration in Ireland for Clinical Effectiveness Reviews to conduct evidence reviews and provide scientific support for the development of clinical practice guidelines for the National Clinical Effectiveness Committee.
- Going live with the new online data collection system, LINK, which is an ambitious programme to synchronise our five national health information systems and receive data from service providers online.
- Publishing the report *Proposals for an* Enabling Data Environment for Health and Related Research in Ireland, which maps a course for the safe access, storage, sharing and linkage of health-related data.
- Producing five evidence reviews and two evidence briefings for the Department of Health.
- Creating new supports and mechanisms to encourage Public and Patient Involvement (PPI) in research.
- Expanding the scope of the National Drug-Related Deaths Index to include the collection of data on all suicides. This

€58.6m

invested in 111 awards across 30 host institutions.

builds on the HRB's success in relation. to the collection of road safety data and deaths due to fire.

- · Introducing a staff and organisational development programme.
- Hosting a conference to mark 30 years of HRB output and impacts.
- Exceeding Horizon 2020 health targets in terms of securing funding.
- Publishing a report on Alcohol in Ireland: consumption, harm, cost and policy response.

Through our funding mechanisms, the HRB:

- Invested €58.6 million in 111 awards across 30 host institutions.
- Supported 663 research jobs.
- · Helped Irish researchers leverage €8.9 million from Horizon 2020.
- Involved 14,523 patients in 344 clinical trials at HRB Clinical Research Facilities.
- Enabled 2,403 cancer patients to enrol in clinical trials conducted by Cancer Trials Ireland.
- Appointed four new Research Leaders in the areas of suicide prevention, safe prescribing, dementia care and team leadership in the health services.

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

The advances made in 2016 put the HRB in a strong position to deliver on the ambitious targets presented in the new HRB Strategy 2016-2020, Research. Evidence. Action. This was only possible through the dedication and drive of HRB staff and commitment of our Board members.

Looking to the future, it is clear that this strategy and the outcomes it delivers will position research at the heart of the health system, leverage more from the investments made in health, and ensure that evidence is used to inform decision-making about policy and practice.

Dr Declan Bedford Chairman

Dr Graham Love Chief Executive

Fraham 1

Snapshot of HRB activities during 2016



Open Science and Ireland

Organisers and keynote speakers at at Open Science and Ireland event.

€4.5m

for seven dementia research projects with the Atlantic Philanthropies.

Professor Eamon O'Shea, NUI Galway, received € 1.6m to become a HRB Research Leader in Dementia.

TB breakthrough opens way for immunotherapy treatment as HRB-funded researchers at St. James's Hospital and Trinity College Dublin discover new avenues to treat multi-drug-resistant tuberculosis.

Dr Laura Gleeson, TCD and St. James's Hospital



Research. Evidence. Action.

The HRB will invest €250 million to drive innovation in clinical practice, health service design and delivery, and embed research at the core of the Irish health system.



Launched new Applied Partnership Award Scheme

(Ro)

Researchers and knowledge users must actively engage throughout the research cycle, starting with identifying the research question and then using the research findings to influence policy and/or practice.



€5.7m

For four new HRB Research Leaders awards in the areas of suicide prevention, safe prescribing, dementia care and team leadership in health services.

#HRB30

HRB report on Alcohol in Ireland: consumption, harm, cost and policy response

Dr Deirdre Mongan, HRB, lead author



Harm to health

In 2013:

Deaths per day were alcohol related

cases treated for problem alcohol use

Research involving a team of Irish, **American and Canadian researchers** reveals that the immune system could be responsible for as much as 40% of our body's ability to regulate weight.

Brendan Quinn, fitness instructor, who participated in the clinical trial and lost over 23kg.

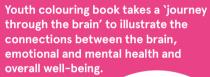


Health Research Careers

Support exceptional researchers and leaders

2016-2020

HRB publishes Research Careers Framework and Action Plan, setting out the actions to develop a skilled workforce engaged in health research in Ireland.











Minister of State with special responsibility for Disabilities, Finian McGrath, T.D. presents David McKenna with his prize for winning the competition to design the cover of the National **Intellectual Disability** Database (NIDD) report. His painting was selected from more than 250 entries nationwide.

HRB publishes annual report and census data from Irish psychiatric units and hospitals.





€73 billion

HRB-funded research estimates that premature cancer deaths will cost the Irish economy €73 billion over the next 20 years.



The MAMMIStudy

The MAMMI Study – Cecily Begley and Deirdre Daly, TCD – revealed a litany of hidden health problems affecting every aspect of mothers' lives, including mental, physical and sexual health.





Good drugs for bad bugs – Research by Professor James O'Gara at NUI Galway shows that penicillin weakens MRSA bacteria, making them more vulnerable to other antibiotics and the immune system.

HRB invests €2.5 million in the Collaboration in Ireland for Clinical Effectiveness Reviews (HRB-CICER) initiative, a multidisciplinary team supported by experts in the Health Information and **Quality Authority (HIQA) and** the HRB Centre for Primary Care Research at RCSI (Royal College of Surgeons in Ireland) to assist the Health Service Executive's (HSE) clinical guideline development groups and ensure that evidence underpins patient care and safety.



Funding eligibility to be linked to gender equality accreditation

The HRB and other Irish research funding agencies will require higher education institutions to have Athena SWAN gender equality accreditation in place by 2019 in order to remain eligible for research funding.

Drug-related deaths figures – 62% increase over 10 years

Almost two people died each day in Ireland during 2014 as a result of poisoning, trauma or medical causes linked to drug use.

2014 Drug-related deaths

697

Deaths

Poisonings 354 Non-poisonings 343

C Health Research Board

#HRB30

€40m

Irish health researchers secure over €40 million from the EU for research and innovation projects.

Screening tool to reduce adverse drug reactions among elderly patients and reduce exchequer medication costs.





A new Irish study, using data from the HRB's National Alcohol Diary Survey 2013, shows that minimum unit pricing for alcohol will affect 14% of drinkers.



HRB launched public and stakeholder consultation around Ireland's first structured approach to public and patient involvement (PPI) in health research.





Sean Kirwan, UCD, received a special commendation for his series of patient information videos produced with his HRB Knowledge **Exchange and Dissemination Award.**



Professor Fidelma Dunne. **HRB-funded Atlantic-DIP** project (Diabetes In Pregnancy), overall winner at 2016 Irish **Healthcare Awards.**

Health Research Board publishes drug treatment figures and compares the Irish drug situation with the rest of Europe



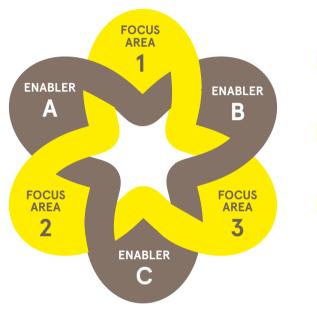
Key deliverables in line with HRB strategy 2016 - 2020

The HRB Strategy 2016-2020 charts a clear course for what the organisation will do over the next five years.

This annual report highlights key achievements made during 2016 in line with the strategy objectives, and it showcases some examples of significant outcomes and success.

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

FOCUS AREA 2

Support healthcare interventions

FOCUS AREA 3

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

ENABLER A

Support exceptional researchers and leaders

ENABLER B

Build a strong enabling environment

ENABLER C

Enhance organisational performance

Focus areas

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

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

Enabling themes

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

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

Focus area 1

Address major health challenges

2016 Objectives:

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

Key items delivered in 2016

- Thirty-one awards, worth €18.3 million, supported this focus area.
- Eleven of these awards, worth €13.3 million, involved international collaboration.
- Launched a new grant scheme called Investigator-Led Projects (ILP). This replaces the Health Research Award scheme. One hundred and fifty applications received and under review.
- · Funded seven additional Health Research Awards (project grants) worth €2.3 million.
 - > US-Ireland Research and Development Partnership scheme. Funded two awards worth €6.8 million (HRB contribution of €0.7 million).
 - > Medical Research Charities Group. Made 13 awards worth €2.5 million (HRB contribution of €1.5 million).

- National Children's Hospital Foundation (NCHF). Launched new funding instrument for paediatric research at the National Children's Hospital (€1 million investment by NCHF).
- Reconfigured the National Institutes of Health (NIH) partnership with Science Foundation Ireland and the Public Health Agency's Health and Social Care R&D Division (HSC R&D) in Northern Ireland. This will broaden health research areas covered, make the programme more attractive to researchers and simplify administration (expect an increase in applications/awards to follow from 2017 onwards).

€18.3m

Made thirty-one awards worth €18.3 million.

Case Study 1:

SFI-HRB-Wellcome Biomedical Research Partnership



The HRB has a long track record of working with Irish and international funding organisations, including Wellcome (formerly the Wellcome Trust) and Science Foundation Ireland (SFI), to name just two of many. Since 2010, the HRB, SFI and Wellcome have formed a strategic partnership that gives Irish researchers access to Wellcome funding schemes.

In recent years, Wellcome has been one of the largest international supporters of Irish research. Since 2005, it has awarded 249 grants to Republic of Ireland institutions. These awards, made in partnership with the HRB and SFI, had a total Sterling value of £44 million.

In 2016 alone, the HRB, with Wellcome and SFI, co-funded health research awards worth €11.3 million. Some of these included:

Wellcome Institutional Strategic Support Fund.

For the first time, two Irish universities were successful in this scheme. Trinity College Dublin (TCD) and University College Dublin (UCD) have each secured €1.1 million.

In TCD, the award will:

- support newly independent investigators
- support an international collaboration programme
- further enhance public engagement activities.

In UCD, the award will support:

· a scheme aimed at giving early-career medical doctors and veterinarians the opportunity to work in a research setting

- a targeted scheme for mid-career researchers
- the creation of networks of excellence, supporting public engagement and collaborations with other researchers.

Investigator Award. Professor Luke O'Neill secured €2 million in funding through this partnership to investigate new theories about how certain cells behave and cause inflammation, in the hope of finding new therapies to treat a range of inflammatory diseases.

Seed funding awards. Four Irish researchers secured €400,000 each to explore their own novel research ideas. Seed Awards help researchers develop novel ideas that will go on to form part of larger grant applications to Wellcome or elsewhere.

In 2016 alone, the HRB, with Wellcome and SFI, co-funded health €11.3 million.

Case Study 2:

Investigator-Led Projects



The Investigator Led Projects (ILP) scheme was launched in 2016 and replaced the HRB's Health Research Award (HRA) scheme. ILP awards are projects with a 24-48-month lifespan and have a maximum budget of €370,000. The HRB received 150 applications to the scheme in 2016. At the time of writing, these applications are under international peer review to select the best projects. The HRB will fund approximately 30-35 of these awards in 2017.

The scheme aims to support the creation of new knowledge to address the major health challenges in society and to have an impact on future healthcare. Projects must be in one of the following areas:

- Patient-oriented research
- Population health research
- Health services research.

They can address topics almost anywhere on the research spectrum, including how to maintain and promote health and well-being, how to prevent or treat illness, or how best to organise health systems. Projects must be cutting edge, add to the international knowledge base, and focus on important, timely research questions where the answers are of interest to an international audience. The ILP scheme complements two other major project grant schemes in the HRB strategy 2016-2020, namely the Applied Partnership Awards (APA) and the Definitive Interventions and Feasibility Awards (DIFA).

In 2016, ongoing or previous Health Research Awards produced outstanding results which received significant media attention.

These included:

- Professor Donal O'Shea's (St Vincent's University Hospital) discovery that the immune system plays a major role in regulating body weight and obesity.
- Professor James O'Gara's (NUI Galway) discovery that penicillin weakens MRSA bacteria and leaves them susceptible to other drugs and to the patient's immune system.
- Professor Cecily Begley's (TCD) results, which demonstrated high prevalence rates of hidden health problems facing mothers, including mental, physical and sexual health, through the Maternal Health and Maternal Morbidity in Ireland (MAMMI) study.

The scheme aims to support the creation of new knowledge to address the major health challenges in society and to have an impact on future healthcare.

Focus area 2

Support healthcare interventions

2016 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 2016

- Made five awards, worth €9.7 million, in this focus area. These included:
 - > Cancer Trials Ireland who received two awards with a combined value of €9 million to support a broad range of investigator-led clinical trials in Irish hospitals.
 - > Two clinical intervention studies worth €0.5 million in total, which were funded through the HRB-Medical Research Charities Group scheme.
- Launched the Health Research Board Clinical Research Coordination Ireland (HRB-CRCI). This will act as the national coordinating hub for all clinical trials in Ireland.

- Revised and launched the Definitive Interventions and Feasibility Awards (DIFA) scheme. This scheme supports intervention trials and feasibility studies in clinical and/ or population health research and/or health services research. The HRB received 50 applications in round one. First awards will be announced in mid-2017.
- Organised a review of the HRB Trials Methodology Research Network (HRB-TMRN) and designed a proposal for next-phase funding.
- Submitted business cases to the Department of Health for national membership in the Biobanking and Biomolecular Resources Research Infrastructure - European Research Infrastructure Consortium (BBMRI-ERIC) and the European Clinical Research Infrastructure Network - European Research Infrastructure Consortium (ECRIN-ERIC).

€9m awarded to Cancer Trials Ireland

Case Study 3:

More Irish people will have access to multi-centre clinical trials



Pictured at the launch of the HRB-CRCI were: Prof Joe Eustace, Chair and Director, HRB-CRCI, Dr Fionnuala Keane, Chief Operating Officer, HRB-CRCI, Dr Graham Love, Chief Executive, HRB, Marcella Corcoran Kennedy, TD, Minister of State for Health Promotion.

As the national coordinating hub for all clinical trials in Ireland, HRB-CRCI will add further value by assisting health professionals to get involved in clinical research.

Ireland's clinical trials ecosystem received a major boost with the launch of HRB-CRCI in September 2016. This is the final part of a 10-year, €100 million strategic investment by the HRB to develop Ireland's capacity to conduct clinical trials to best international standards.

A suite of earlier award schemes has provided researchers with the skills to conduct trials; the facilities in which to carry out those trials; and the specialist staff, peer networks and high-tech equipment required to support clinical trials.

As the national coordinating hub for all clinical trials in Ireland, HRB CRCI will add further value by:

- acting as a single point of contact for anyone wishing to participate in national and international clinical trials
- assisting health professionals to get involved in clinical research
- guiding academics to develop research proposals that involve patients
- helping the life sciences industry deliver high-quality clinical research in Ireland
- helping patients to understand more about clinical research and how they can participate in trials.

Case Study 4:

€18 million for Definitive Interventions and Feasibility Awards (DIFA)



Feasibility studies provide a pipeline of ideas and proofs-of-concept for future definitive intervention studies.

Definitive interventions are large projects, typically of 24-48 months' duration, with budgets of up to €1 million each. They provide high-quality evidence on the effectiveness, cost and broad impact of a therapy or intervention under investigation.

Feasibility studies provide a pipeline of ideas and proofsof-concept for future definitive intervention studies.

Until recently, Ireland did not have the research ecosystem to support significant activity in this area. However, targeted HRB investments in clinical research facilities, clinical trials networks and other supports have changed that.

Now, to augment these large-scale investments, the HRB will commit approximately €18 million over the course of 2016-2020 to build research activity in Definitive Interventions and Feasibility Awards.

With almost 50 applications in its first round, DIFA has already generated considerable interest. The first awards are expected to be announced in 2017. The international review panels have commended the scientific excellence of applications.

Focus area 3

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

2016 Objectives:

- Support research that addresses
 questions of national relevance for clinical
 and population health practice and for
 health services management, as well as
 translation of the 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 evidenceinformed decisions.

Key items delivered in 2016

- Made twelve awards, worth €13.3 million, in this focus area. These included:
 - > Awarded €10 million in funding over five years to continue The Irish Longitudinal Study on Ageing (TILDA).
 - > Launched the first round of a new Applied Partnership Programme, which requires co-management of research projects by academic and policy/health system Principle Investigators. Made six awards with a combined value of €1.3 million in this scheme (HRB contribution €1.1 million, with €0.2 million provided by health care organisations).

- Made two awards with a combined valued of €540,00 with the Health Services Executive and the Royal College of Physicians of Ireland under the Research Collaborative in Quality and Patient Safety.
- > Awarded €177,256 in funding for a pilot project to evaluate the implementation of the recommendations from the Taskforce on Staffing and Skill Mix for Nursing in specialist medical and surgical care settings in acute hospitals.
- Awarded 10 Cochrane fellowships worth €513,000.
- Collaborated with 29 partners in a coordination and support action for the TO-REACH project (Transfer of Organisational innovations for Resilient, Effective, equitable, Accessible, sustainable and Comprehensive Health Services and Systems). The project is funded by a €2 million Horizon 2020 award.
- Worked with the Department of Health to launch a call, up to the value of €900,000, for a three-year research programme that will underpin the development and evaluation of safe nurse staffing policies aligned with the work of the Taskforce on Staffing and Skill Mix for Nursing in specialist medical and surgical care settings in acute hospitals.
- Published four National Health Information Systems (NHIS) Annual Reports.

Provided drug-related evidence to inform the development of the new National Drugs Strategy.

- Published four peer-reviewed articles based on NHIS data.
- Introduced the new LINK online system to gather data from centres providing services that report to the National Drug Treatment Reporting System (NDTRS).
- · Extended the remit of the National Drug-Related Deaths Index (NDRDI) to collect suicide data.
- Completed five evidence reviews and two evidence briefings for the Department of Health.
- Fulfilled the contractual commitments as the Irish Focal Point to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA).
- · Provided drug-related evidence to inform the development of the new National Drugs Strategy.
- · Published four issues of Drugnet Ireland.
- · Published Alcohol in Ireland: consumption, harm, cost and policy response.

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

Case Study 5:

High-quality evidence for the Irish health and social care system









The working titles of HRB evidence reviews often speak for themselves in terms of the value that the HRB brings to evidence-informed policy-making in Ireland. Four examples from our 2016 output include:

- Barriers and facilitators to successful hospital mergers: A systematic review
- · Health workforce planning models, tools and

processes in five countries: An evidence review

- Individualised budgeting for social care services for people with a disability: International approaches and evidence on financial sustainability
- Interventions that promote increased breastfeeding rates and breastfeeding duration among women: An umbrella review.

A HRB evidence review from 2015 titled Evidence review of the food contents on carbohydrate and fats shelves of the food pyramid contributed to the revised Food Pyramid that was published by the Department of Health in December 2016.



Case Study 6:

Speedier, more efficient information for service planners, service providers and health policy-makers



In June 2016, the National Drug Treatment Reporting System (NDTRS) became the first HRB information system to go live on LINK.

The LINK project will move all five HRB information systems onto a single common platform that will provide an integrated approach to health information management within the HRB. LINK brings internal and external benefits. It will:

- enhance compliance with data protection and data security requirements
- improve data quality by allowing validation at the point of entry
- rationalise the complex software support, maintenance and

development of those five very different information systems.

For users of our information systems, the change will:

- remove the requirement for paper copy forms
- improve the quality of data to which they have access
- enable them to conduct analysis on their own data.

To date, 234 people from 96 drug treatment service providers have been trained in how to use the new NDTRS. There are currently over 40,000 treatment episode records in the NDTRS database. When all LINK modules are live, there will be upwards of 300,000 separate records held across the entire system.

To date, 234 people from 96 service providers have been trained in how to use the new NDTRS LINK system.

Enabler A

Support exceptional researchers and leaders

2016 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 Health Service Executive 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.

€14.4m

Made twenty six awards worth €14.4 million under Enabler A.

Key items delivered in 2016

- Made twenty six awards worth €14.4 million under Enabler A.
 - > Of these three awards worth €11.3 million were co-funded through the SFI-HRB Wellcome Biomedical Research partnership (HRB contribution of €5.1 million).
- Announced, with Wellcome, €9.1 million in joint funding for the Irish Clinical Academic Training (ICAT) Programme to support 40 PhD scholarships over six years.
- Completed interim review of the Structured Population and Health-services Research Education (SPHeRE) programme and initiated planning for Phase II funding.
- Launched new scheme for Emerging Investigator Awards worth €10.5 million over five years.
- Awarded 42 Summer Scholarships and one Cancer Prevention Fellowship.
- Launched a new joint funding initiative with the Fulbright Commission of Ireland to encourage health professionals and health policy practitioners to avail of travel bursaries to relevant US institutions. Four awards are expected in 2017.

Case Study 7:

Research training for doctors in the health service



The ICAT programme will train the next generation of doctors in research methods.

The Wellcome-HRB Irish Clinical Academic Training (ICAT) scheme is the largest allisland investment in academic clinical research. It will train eight postgraduate trainee doctors per year for a fiveyear period, providing fully integrated clinical and research training up to consultant level.

The Minister for Health, Simon Harris T.D., launched the scheme at the Wellcome-HRB Clinical Research Facility at St. James's Hospital. The programme will train the next generation of doctors in research methods. And, as a result of HRB investments in clinical research infrastructure, they will have world-class facilities in which to do their work.

The award represents a €14.6 million investment, with €9.1 million coming from Wellcome and the HRB, and an additional combined contribution of €5.5 million from the Health Service Executive, and the Health and Social Care Research and Development Office, Northern Ireland, and partner universities. It is one of only seven such awards made across the UK and Ireland by Wellcome.

Case Study 8:

Emerging Investigator Awards



Over the lifetime of the strategy, the scheme will invest €15 million to create a cohort of new, talented independent investigators.

Training and career development opportunities for researchers is a key requirement if we are to both create and retain the people who will be the research leaders of the future in our healthcare system.

In 2016, the HRB published its Health Research Careers Framework and Action Plan. This set out how the HRB will deliver career training and development opportunities for researchers at all stages in their career journey. These include opportunities for:

- early-stage researchers through PhD programmes
- mid-stage researchers through the development of team-based and crossdisciplinary approaches

- new investigators who are ready to transition to independence
- · leaders in health research.

The Emerging Investigator Awards scheme was devised expressly to support new investigators who are ready to transition to independence. Over the lifetime of the strategy, the scheme will invest €15 million to create a cohort of new, talented independent investigators. It will support approximately 10 researchers in the first round. There were 57 eligible applications to the first call in 2016, with the peer review, interview and adjudication process to be completed in mid-2017.

Enabler B

Build a strong enabling environment

2016 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 and other European research programmes.

Key items delivered in 2016

- Made four awards, worth €3 million, under Enabler B.
- Published Proposals for an Enabling Data Environment for Health and Related Research in Ireland. This sets out a clear roadmap for how Ireland can maximise its use of national health data assets to improve people's health and healthcare delivery.
- Invested €2.3 million in the HRB Collaboration in Ireland for Clinical

- Effectiveness Reviews (CICER), The Health Information and Quality Authority successfully secured this award.
- Launched a new Gender and Diversity Policy and an Implementation Plan to embed gender equality in HRB funding programmes and practices.
- Launched the Public and Patient Involvement (PPI) Ignite scheme to fund PPI coordinators in Irish universities in collaboration with the Irish Research Council. Up to five awards will be made in 2017.
- Actively promoted the Open Science agenda with key activities, which included:
 - organising a national one-day policy seminar on Open Science in partnership with the ALLEA (All European Academies) e-Humanities Working Group and the Royal Irish Academy (RIA)
 - organising a national one-day information and training seminar on the FAIR (Findable, Accessible, Interoperable, and Re-usable) principles for health researchers
 - securing approval to pilot an Open Science Publishing Platform (F1000) for two years, which will enable researchers to publish their work in a more open manner
 - revising the HRB Open Access policy.

- Revised the HRB Evaluation Strategy for Funded Research and developed a fouryear implementation plan.
- Assisted Irish health researchers to secure €8.9 million from Horizon 2020 for 12 new projects, one of which was coordinated by an Irish-led team. This was achieved with guidance from the HRB National Contact Point.
- Supported Irish researcher participation in a number of European Joint Programming Initiative calls. These included EU Joint Programme – Neurodegenerative Disease Research, A Healthy Diet for a Healthy Life, Antimicrobial Resistance, and More Years, Better Lives.
- Organised a review of the Clinical Research Facilities Awards and designed a proposal for next-phase funding.
- Undertook a scoping exercise for the Department of Health to centralise an Ethics Service for the conduct of Clinical Trials of Investigational Medicinal Products (CTIMPs).
- Supported the launch of the Health Innovation Hub.

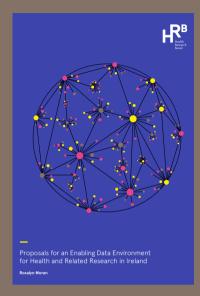
The HRB launched a new Gender and Diversity Policy and an Implementation Plan to embed gender equality in HRB funding programmes and practices.

€8.9m

Assisted Irish health researchers to secure €8.9 million from Horizon 2020 for 12 new projects.

Case Study 9:

DASSL-ing Ireland and getting the most from our health data systems



Ireland needs to put in place a DASSL-type model if we are to unlock the significant value of currently underutilised data for public benefit.

Extracting the most benefit from patient and healthrelated data, while respecting data protection and privacy considerations, involves a delicate balancing act.

Ireland has over 100 health and health-related databases. However, a complex range of cultural, social, technical and governance issues prevents health researchers from linking, mining and accessing the combined information that these databases contain.

These challenges can lead to valuable health research being delayed or, in some cases, abandoned. In certain cases, data have to be collected anew, resulting in duplication of effort and costs as well as delays in securing research results that may benefit both people's health and the effective delivery of patient care.

If these data resources could be harvested in a safe, secure manner, they would have tremendous potential to advance medical treatments, enhance health service delivery, and inform policy and planning across government and civic society.

The HRB Data Project was a response to requests from the health research community

to address challenges that they experience in relation to accessing, sharing and linking health-related data.

The 2016 report *Proposals for* an Enabling Data Environment for Health and Related Research in Ireland presents a model along with proposals for the types of infrastructure and services required to enable safe access, usage and linkage of data. The DASSL (Data, Access, Storage, Sharing and Linkage) model outlines the infrastructure and services that are required in order to ensure:

- · safe projects (valid research purpose)
- safe people (trusted researchers)
- safe data and data governance (people's data protected)
- safe setting (security controls)
- safe outputs (disclosure control of outputs).

Ireland needs to put in place a DASSL-type model if we are to unlock the significant value of currently underutilised data for public benefit. This will require the concerted effort of a broad range of stakeholders.

Case Study 10:

Applying sound principles in the research process



Professor Barend Mons, speaking at the Open Science and Ireland meeting.

There is a fundamental move across Europe to make the research process more equitable, inclusive, transparent, collaborative and efficient.

Initiatives such as Open Science (making research more collaborative, supporting better quality and engagement with society), FAIR data principles (making data Findable, Accessible, Interoperable and Re-usable) and gender balance policies reflect this EU and global ambition.

During 2016, the HRB played a lead role in advancing these initiatives in Ireland. Key activities included:

- Agreeing to chair the newly established National Open Research Forum, which has a role to play in ensuring that Ireland understands and promotes open science and makes best use of our research expertise, resources and outputs.
- Hosting a two-day think tank about open science policies and practices in Ireland. Leading figures Professor Barend Mons, Chair of the High Level Expert Group of the European Open Science Cloud (EOSC), and Professor Martin Curley, Chair of the EU Open Innovation Strategy and Policy Group, joined the CEOs of the four principal Irish research funding agencies and other experts to lead the discussions. The second day of this event focused on the principles and approaches that make research data more Findable, Accessible, Interoperable and Reusable (FAIR).
- Commencing the process to run a pilot project for an open publishing service. This service will enable HRB-funded researchers to rapidly and openly publish a wider array of their research findings and

- emerging outputs, with minimal barriers. It will actively support the HRB strategic aim 'to advance the exploitation of data in health research to yield information that contributes to improvements in health'.
- Approving a new gender policy to ensure equitable and fair treatment of both genders in assessing applications for funding. It will also ensure that the design and conduct of research considers gender influences and issues. The new policy applies to all HRB funding calls issued from 1 June 2016. In partnership with the Higher Education Authority and other Irish funding agencies our new policy obliges higher education institutions to have internationally recognised gender equality accreditation by the end of 2019.

The HRB will actively work with the research community, government departments, funding agencies and higher education institutions to embed these principles into our research processes.

Enabler C

Enhance organisational performance

2016 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.

The HRB featured in 440 press and 438 online articles during 2016. This equates to €2.7 million in advertising value.

Key items delivered in 2016

- · Introduced a Personal and Organisational Development programme (POD).
- Organised a conference for key stakeholders to showcase the impact that the HRB has had over the past 30 years.
- Reviewed and improved HRB business planning and reporting mechanisms to better meet the operational needs of the Board and the Department of Health and to ensure that available resources are optimally used.
- · Rebranded the organisation.
- Continued development of two main HRB systems: GEMS, our online Grants Electronic Management System, and LINK, our common platform for all our information systems.
- The HRB featured in 440 press and 438 online articles during 2016. This equates to €2.7 million in advertising value.

#HRB30 Conference

A look back over 30 years of growth, success and HRB impacts.

Case Study 11:

Personal and Organisational Development Programme

We want to create a positive work environment.

Our strategy sets out a clear plan about what we are going to achieve between now and 2020. However, it does not address how we do it, specifically our culture. Therefore, the HRB has implemented an organisational personal development programme to help create the best possible environment within the HRB in order to achieve our mission. This programme is about building on the HRB's culture and embedding the values and behaviours that we want to have in our organisation.

The personal and organisational development programme has two stages. The first began in September 2016 and consisted of an internal questionnaire and focus groups in which we took

an honest look at ourselves, the values and behaviours we see currently and those we would like to see. The second stage, which will begin in early 2017, will be to develop an action plan designed by staff in response to the outcome of stage one. We hope this will help to create a positive work environment, build staff morale, enhance management and work practices and make the HRB a great place to work.

We see this as an ongoing process whereby we grow and evolve, both as individuals and as a progressive organisation, working together in response to changing practices, new strategies and new staff in order to meet our strategic objectives and goals.





Case Study 12:

HRB 30 conference





This conference was designed to show policy-makers, healthcare managers and health professionals the positive impact of integrating research into their normal activities.

The HRB was 30 years old in 2016. To mark the occasion we held a one-day conference that demonstrated the power of research and evidence to improve people's health and enhance health and social care delivery.

The conference was a mix of international keynotes and HRB-driven success stories. This was designed to show policy-makers, healthcare managers and health professionals the positive impact of integrating research into their normal activities. The programme was also designed to illustrate how research and evidence can extract further value from the €14 billion health budget.

Over the past 30 years the value of health research has been consistently recognised

`In the long term, our health system will be a reflection of the research base underpinning it'. W.A. Watts,

Chairman, HRB, 1986.

`When we invest in health research, we invest in the future of healthcare and it's important that we don't lose sight of that.'

Dr Reg Shaw, Chairman, HRB, 2008.

'Our future health depends on innovations in research and practical applications of new discoveries in policy and practice.'

Dr Declan Bedford, Chairman, HRB, 2014.

The challenge as we progress is to ensure that we close the gap between research/evidence and policy/practice. That message resonated loud and clear throughout the event.



Corporate Governance

HRB Board and Board Committees

The HRB Board comprises 10 members appointed by the Minister for Health, as set out in Article 5 of the Health Research Board (Establishment) Order 1986 (S.I. No 279 of 1986), as amended. The quorum for meetings of the Board is five.

The members of the Board during 2016 were:

- Dr Declan Bedford (Chair)

- 4. Professor Jane Grimson
- 5. Professor Bernadette Hannigan
- 6. Mr John McCormack
- 8. Professor Charles Normand



Dr Declan Bedford





Professor Michael Joe Duffy



Professor Jane Grimson













HRB Board and Board Committees

The Board has established two committees to assist it in carrying out its functions:

Audit Committee

Assists and supports the Board to monitor financial reporting, review the effectiveness of internal controls, control the internal audit function, and communicate with external auditors. The Committee met four times during 2016.

Members:

- Mr Tom Lynch (External Chair)
- · Dr Declan Bedford
- Dr Barry Cullen
- Professor Michael Joe Duffy
- Professor Jane Grimson
- · Dr Tom O'Callaghan

Management Development and Remuneration Committee

This Committee oversees the procedure for the selection of the Chief Executive, reviews the remuneration of the Chief Executive within the guidelines set from time to time by the Government, and acts as a consultative group to the Chief Executive to review the performance and development of the senior management team. The Committee met once during 2016.

Members:

- Dr Declan Bedford (Chair)
- · Professor Bernadette Hannigan
- Mr John McCormack
- · Professor Charles Normand
- Dr Marion Rowland

Attendance at meetings during 2016

(Note: figures in brackets indicate the number of meetings that took place during the year)

| | Board meetings | Audit Committee meetings | Management Development and Remuneration Committee meetings |
|----------------------|----------------|-----------------------------|--|
| Dr D Bedford (Chair) | 7 (7) | 4 (4) | 1 (1) |
| Dr B Cullen | 7 (7) | 4 (4) | _ |
| Professor MJ Duffy | 6 (7) | 4 (4) | - |
| Professor J Grimson | 6 (7) | 3 (4) | - |
| Professor B Hannigan | 7 (7) | _ | 1 (1) |
| Mr J McCormack | 7 (7) | _ | 1 (1) |
| Professor W Molloy | 6 (7) | _ | _ |
| Professor C Normand | 5 (7) | _ | 1 (1) |
| Dr T O'Callaghan | 6 (7) | 3 (4) | _ |
| Dr M Rowland | 6 (7) | _ | 1 (1) |
| External | | | |
| Mr Tom Lynch | _ | 2 (4) | _ |

Legislation

The Health Research Board is an autonomous statutory agency set up under the Health Research Board (Establishment) Order 1986 (S.I. No. 279 of 1986), as amended (the "Acts"). The functions of the Health Research Board are to:

- promote, assist, commission or conduct health research to improve health and increase the effectiveness of the health services
- maintain, develop or support health information systems for the purposes of research and to provide the evidence for health policy and services
- liaise and cooperate with other research bodies in the State and outside the State in the promotion, commissioning or conduct of relevant research
- liaise with other health information bodies in the State and, where appropriate, outside the State in the development and support of health information systems.

In discharging its functions, the Health Research Board is required to have regard to such general research and objectives as the Minister for Health may, from time to time, determine and convey to the Board.

In discharge of its functions in relation to health research and information systems, the Board shall have regard to excellence and relevance to health and best international practice.

In addition to its own governing legislation, the Health Research Board is also required to comply with a range of other statutory (national and EU) and administrative requirements. In

particular, but not limited to, it has put in place procedures to ensure compliance with the following specific requirements:

Disclosure of interests

In accordance with Article 13 of the Acts. members of the Board, members of committees and award selection/evaluation panels as well as Health Research Board staff are required to disclose pecuniary or other beneficial interests in, or material to, any matter which falls to be considered by the Health Research Board, and to exclude themselves from the decision-making process.

In accordance with the provisions of the Ethics in Public Office Act, 1995 and the Standards in Public Office Act, 2001, all Health Research Board members and staff holding designated positions have provided statements of interest, and the Health Research Board maintains a Register of Board and Committee Members' Interests.

Freedom of Information Act, 2014

The Health Research Board is a prescribed body under the Freedom of Information Act. This Act provides a legal right to individuals to obtain access to information held by public bodies, to the greatest possible extent, consistent with the public interest and the right to privacy. However, the Act provides strong protections for individuals or research teams who supply information to the Health Research Board that is confidential, commercially sensitive or personal. Requests for information under this legislation should be addressed to the Freedom of Information Officer, Health Research Board, Grattan House, 67-72 Lower Mount Street, Dublin 2.

Data Protection Acts, 1988 and 2003

The Health Research Board is committed to a policy of protecting the rights and privacy of individuals in accordance with data protection legislation.

Official Languages Act, 2003

The Health Research Board complies with its obligations under this Act.

Employment Equality Acts 1998 to 2011

The Health Research Board is committed to a policy of equal opportunities, and it strives to be an employer where individual contributions are encouraged and differences are valued. To this end, the HRB is committed to ensuring that no staff member, or applicant for employment, receives less favourable treatment than any other on grounds of gender, marital status, family status, sexual orientation, religion, age, disability, race, membership of the Traveller community, or any other grounds that are not relevant to good employment practice.

Re-use of Public Sector Information Regulations, 2005

The Health Research Board complies with the regulations on the Re-use of Public Sector Information (European Communities (Re-Use of Public Sector Information) Regulations 2005 (S.I. No. 279/2005)) and encourages the re-use of the information that it produces.

The Safety, Health and Welfare at Work Act 2005, as amended

The Health Research Board continues to take appropriate measures to protect the safety, health and welfare of all employees and visitors within its offices in order to meet the provisions of this Act, and it has taken steps to communicate both the rights and obligations of employers and employees under the Act.

Disability Act 2005

The Health Research Board is required to comply with the Disability Act, 2005. The Act places obligations on public sector employers to meet the target of ensuring that at least 3% of their workforce comprises people with disabilities, and that they report on an annual basis in relation to the numbers of people with disabilities in their employment and the measures they are taking to employ people with disabilities.

Financial Emergency Measures in the Public Interest Acts 2009, 2010, 2011 and 2013

The Health Research Board is required to adhere to the measures set out in the Financial Emergency Measures in the Public Interest Acts 2009, 2010, 2011 and 2013. The Health Research Board has implemented all measures required by the aforementioned legislation.

Protected Disclosures Act 2014

There were no protected disclosures made to the Health Research Board in 2014.

Public procurement

The Health Research Board applies national rules and EU public procurement Directives to the purchase of goods and services. Where practicable, the Health Research Board avails of framework agreements put in place by the National Procurement Service.

Prompt payment of accounts

The Health Research Board comes under the remit of the Prompt Payment of Accounts Act, 1997, SI 383/2000 and the European Communities (Late Payment in Commercial Transactions) Regulations 2012, and it is committed to meeting its obligations under the 15-day Prompt Payment Rule, which came into effect on 2 January 1998. It has processes in place to track all invoices, and weekly payment runs are carried out, in order to ensure prompt payment.

Extract from the Financial Statements

Statement of Income and Expenditure and Retained Revenue Reserves for the Year Ended 31 December 2016

| | 2016 € | 2015 € |
|---|------------|------------|
| INCOME | | |
| Department of Health Revenue Grant (Vote 38 B.1) | 31,554,000 | 30,654,000 |
| Other Research Funding | 1,653,674 | 1,074,606 |
| Interest Receivable and Other Income | 314 | 8,348 |
| Transfer to Capital Reserve of Amount Allocated to Fund Fixed Assets | (850) | (1,949) |
| | 33,207,138 | 31,735,005 |
| EXPENDITURE | | |
| Address major health challenges | 10,064,222 | 9,844,377 |
| Support healthcare interventions | 6,766,214 | 5,694,930 |
| Address the research needs of the Irish health and social care system | 6,749,950 | 4,809,406 |
| Support exceptional researchers and leaders | 4,739,195 | 6,522,197 |
| Build a strong enabling environment | 2,071,722 | 2,791,011 |
| Enhance organisational performance | 2,664,790 | 2,411,804 |
| | 33,056,093 | 32,073,725 |
| SURPLUS/(DEFICIT) FOR THE YEAR | 151,045 | (338,720) |
| Revenue Reserves at 1 January | (611,245) | (272,525) |
| REVENUE RESERVES AT 31 DECEMBER | (460,200) | (611,245) |

Statement of Capital Income and Expenditure for the Year Ended 31 December 2016

| | 2016 € | 2015 € |
|---|------------|------------|
| INCOME | | |
| Department of Health capital grant (Vote 38 B.1) | 10,071,433 | 10,420,999 |
| Amortisation of capital reserve account | 178,367 | 182,737 |
| | 10,249,800 | 10,603,736 |
| EXPENDITURE | | |
| Support healthcare interventions | 2,236,601 | 2,044,602 |
| Address the research needs of the Irish health and social care system | 1,474,161 | 1,296,384 |
| Support exceptional researchers and leaders | 5,441,260 | 5,765,540 |
| Build a strong enabling environment | 887,671 | 1,066,946 |
| Enhance organisational performance | 22,603 | 151,845 |
| Additions to fixed assets | 9,137 | 95,682 |
| Depreciation | 176,867 | 181,322 |
| Loss on disposal of fixed assets | 1,500 | 1,415 |
| | 10,249,800 | 10,603,736 |
| SURPLUS/(DEFICIT) FOR THE YEAR | - | - |

Statement of Financial Position for the Year Ended 31 December 2016

| | 2016 € | 2015 € |
|--------------------------------------|-----------|-----------|
| FIXED ASSETS | | |
| Property, Plant and Equipment | 527,181 | 695,561 |
| CURRENT ASSETS | | |
| Receivables | 661,087 | 365,263 |
| Investments | 641 | 641 |
| Cash at bank and on hand | 1,749,303 | 1,068,934 |
| | 2,411,031 | 1,434,838 |
| CURRENT LIABILITIES | | |
| Amounts falling due within one year: | | |
| Payables | 1,532,834 | 1,063,149 |
| | 1,532,834 | 1,063,149 |
| NET CURRENT ASSETS | 878,197 | 371,689 |
| LONG TERM LIABILITIES | | |
| Amounts falling due after one year: | | |
| Payables | 1,338,397 | 982,934 |
| | 1,338,397 | 982,934 |
| TOTAL NET ASSETS | 66,981 | 84,316 |
| REPRESENTING | | |
| Retained Revenue Reserves | (460,200) | (611,245) |
| Capital Reserve | 527,181 | 695,561 |
| | 66,981 | 84,316 |

Appendix A

List of HRB publications in 2016

HRB REPORTS

Daly A (2016) National Psychiatric In-Patient Reporting System (NPIRS) National Bulletin 2015. Dublin: Health Research Board.

Daly A and Craig S (2016) Activities of Irish Psychiatric Units and Hospitals 2015 Main Findings. HRB Statistics Series 29. Dublin: Health Research Board.

Daly A and Craig S (2016) Irish Psychiatric Units and Hospitals Census 2016 Main Findings. HRB Statistics Series 32. Dublin: Health Research Board.

Doyle A and Carew AM (2016) Annual Report of the National Intellectual Disability Database Committee 2015 Main Findings. HRB Statistics Series 30. Dublin: Health Research Board.

Health Research Board (2016) Health Research Board Annual Report 2015. Dublin: Health Research Board.

Health Research Board (2016) HRB Strategy 2016-2020: Research. Evidence. Action. Dublin: Health Research Board.

Hourigan S, Doyle A and Carew AM (2016) Annual Report of the National Physical and Sensory Disability Database Committee 2015. HRB Statistics Series 31. Dublin: Health Research Board.

Lynn E and Lyons S (2016) National Drug-Related Deaths Index 2004 to 2014 data. Dublin: Health Research Board.

Irish Focal Point to the EMCDDA (2016) Drugnet Ireland, Issue 56, Winter. Dublin: Health Research Board.

Irish Focal Point to the EMCDDA (2016) Drugnet Ireland, Issue 57, Spring. Dublin: Health Research Board.

Irish Focal Point to the EMCDDA (2016) Drugnet Ireland, Issue 58, Summer. Dublin: Health Research Board.

Irish Focal Point to the EMCDDA (2016) Drugnet Ireland, Issue 59, Autumn. Dublin: Health Research Board.

Irish Focal Point to the EMCDDA (2016) National Report (2015 data) to the EMCDDA by the Reitox National Focal Point, Ireland: new developments, trends. Dublin: Health Research Board.

Mongan D and Long J (2016) Alcohol in Ireland: consumption, harm, cost and policy response. HRB Overview Series 10. Dublin: Health Research Board.

Moran R (2016) Proposals for an Enabling Data Environment for Health and Related Research in Ireland. Dublin: Health Research Board.

EVIDENCE REVIEWS

Keane M, Sutton M, Farragher L and Long J (2016) *Barriers and facilitators to successful hospital mergers: A systematic review*. Dublin: Health Research Board.

Kinsella S and Kiersey RA (2016) *Health workforce planning models, tools and processes in five countries: An evidence review.* Dublin: Health Research Board.

McCarthy A, O'Nolan G and Long J (2016) *Minor ailments schemes: an overview of experience up to 2015*. Dublin: Health Research Board.

Pike B, O'Nolan G and Farragher L (2016) *Individualised budgeting for social care services for people with a disability: International approaches and evidence on financial sustainability.*Dublin: Health Research Board.

Sutton M, O'Donoghue E, Keane M, Farragher F and Long J (2016) *Interventions that promote increased breastfeeding rates and breastfeeding duration among women: An umbrella review.* Dublin: Health Research Board.

PEER-REVIEWED JOURNAL ARTICLES, AUTHORED BY HRB STAFF

Cousins G, Mongan D, Barry J, Smyth B, Rackard M and Long J (2016) Potential Impact of Minimum Unit Pricing for Alcohol in Ireland: Evidence from the National Alcohol Diary Survey. *Alcohol and Alcoholism*, 51(6): 734–740. doi: 10.1093/alcalc/agw051

Cousins G, Mongan D, Barry J, Smyth B, Rackard M and Long J (2016) Estimating risk of alcohol dependence using empirically validated ordinal risk zones versus recommended binary risk zones of the RAPS4: A validation study using stratum-specific likelihood ratio analysis. *Alcoholism, clinical and experimental research*, 40(8): 1700–1706. doi: 10.1111/acer.13126

McConkey R, Kelly C, Craig S and Shevlin M (2016) A decade of change in mainstream education for children with intellectual disabilities in the Republic of Ireland. *European Journal of Special Needs Education*, 31(1): 96–110. http://dx.doi.org/10.1080/08856257.2015.1087151

O'Doherty S, Linehan C, Tatlow-Golden M, Craig S, Kerr M, Lynch C and Staines A (2016) Perspectives of family members of people with an intellectual disability to a major reconfiguration of disability support services in Ireland. *Journal of Intellectual Disabilities*, (20)2: 137-151. doi: 10.1177/1744629516636538

Appendix B

List Of HRB Awards Made In 2016 - to Principal Investigators

| PROJECTS AND PROGRAMMES | | | | | | |
|---|---|--|---------------|--------------------------------|-------------------------------|----------|
| Project title | Host Institution | Scheme | Lead title | Lead Researcher forename | Lead Researcher surname | Amount |
| Building research capacity in the Maternal Health and Maternal Morbidity in Ireland study: Second baby follow-up, intervention development and testing, and measurement of costs (MAMMI-SIM) | Trinity College Dublin | ICE Award | Prof | Cecily | Begley | €869,272 |
| Role of the TWEAK/Fn14 pathway in mediating muscle pathology in SMA | Oxford University [Muscular Dystrophy Ireland Co-fund] | MRCG Co-funded Award | Prof | Melissa | Bowerman | €49,976 |
| Patients' Satisfaction in a Nurse-Led Oral Chemotherapy Clinic | Mater Misericordiae University Hospital, Dublin | Cancer Nursing Research Project | Ms | Paula | Briscoe | €10,000 |
| Novel immune targets in multiple sclerosis | National University of Ireland, Maynooth | Health Research Award | Dr | Marion | Butler | €326,679 |
| Hedgehog control of resident vascular stem cell niches | Dublin City University | Health Research Award | Prof | Paul | Cahill | €318,296 |
| An investigation of the role of Staphlococcus aureus colonisation of healthcare workers in nosocomial transmission of <i>S. aureus</i> to patients in an MRSA-endemic setting using whole-genome sequencing | Dublin Dental University Hospital | Health Research Award | Prof | David | Coleman | €329,445 |
| SAFE: Systematic Approach to improving care for Frail Elderly patients | University College Dublin | Applied Partnership Awards | Dr | Marie- Therese | Cooney | €239,491 |

| Project title | Host Institution | Scheme | Lead title | Lead Researcher forename | Lead Researcher surname | Amount |
|--|--|--|---------------|--------------------------------|-------------------------------|------------|
| Symptom management through self- management: Improving the outcomes of patients with relapsed Multiple Myelomas | National University of Ireland, Galway | Cancer Nursing Research Project | Ms | Orlaith | Cormican | €13,000 |
| Methadone substitution treatment: mortality and progression pathways | Royal College of Surgeons in Ireland | Health Research Award | Dr | Grainne | Cousins | €308,345 |
| Development of a multi- faceted approach to reducing and mitigating the risk of foreign object retention (FOR) | Trinity College Dublin | Research Collaborative in Quality and Patient Safety | Prof | Sam | Cromie | €279,983 |
| Application of Next Generation Sequencing for the Genetic Characterisation of Irish Retinal Degeneration Patients | Trinity College Dublin [Fighting Blindness Co-fund] | MRCG Co-funded Award | Prof | G Jane | Farrar | €299,973 |
| Integrative genomic, epigenetic and functional studies in diabetic kidney disease (GENIE) | University College Dublin | US-Ireland R&D Partnership Award | Prof | Catherine | Godson | €4,518,000 |
| Application of state- of-the-art Raman Chemical Imaging and Chemometrics to accelerate and improve patent prostate biopsy assessment for cancer | University College Dublin | Health Research Award | Dr | Aoife | Gowen | €326,356 |
| MicroRNAs in the mechanism of ketogenic diet therapies and as biomarkers in paediatric epilepsy | Royal College of Surgeons in Ireland [Epilepsy Ireland Co-fund] | MRCG Co-funded Award | Prof | David | Henshall | €144,313 |
| Peer-to-peer motivational interview intervention for smoking, alcohol and physical activity among at-risk adolescents in low-SES communities: A feasibility trial. | Trinity College Dublin [Irish Cancer Society Co-fund] | MRCG Co-funded Award | Prof | David | Hevey | €284,376 |

| Project title | Host Institution | Scheme | Lead title | Lead Researcher forename | Lead Researcher surname | Amount |
|---|--|--|---------------|--------------------------------|-------------------------------|-------------|
| Towards host-directed therapies to overcome immune impairment in cigarette smokers during mycobacterial infection | Trinity College Dublin [Irish Thoracic Society Co-fund] | MRCG Co-funded Award | Prof | Joseph | Keane | €100,000 |
| Wave 5/6 of The Irish Longitudinal Study on Ageing (TILDA) | Trinity College Dublin | TILDA Award | Prof | Rose Anne | Kenny | €10,000,000 |
| Translational analysis of ingestive behavior after gastric bypass | University College Dublin | US-Ireland R&D Partnership Award | Prof | Carel | le Roux | €2,500,000 |
| Unravelling the mechanisms of azoospermia and potential future treatments in male cystinosis patients | Leuven University, Belgium [Cystinosis Ireland Co-fund] | MRCG Co-funded Award | Prof | Elena | Levtchenko | €199,999 |
| AVERT: Autoimmunity Relapse Prediction Using Multiple Parallel Data Sources | Trinity College Dublin [Irish Nephrology Society Co-fund] | MRCG Co-funded Award | Prof | Mark | Little | €199,394 |
| Pioneering Advances for Control of Myopia in Children – The Shield Initiative | Dublin Institute of Technology [Fighting Blindness Co-fund] | MRCG Co-funded Award | Prof | James | Loughman | €300,000 |
| Ketamine for Relapse Prevention in Recurrent Depressive Disorder: a randomised, controlled pilot trial (The KINDRED Trial) | Trinity College Dublin [St. Patricks's University Hospital] | MRCG Co-funded Award | Prof | Declan | McLoughlin | €139,981 |
| Staphylococcus aureus induced immunosuppressive memory: consequences for bug and for host | Trinity College Dublin | Wellcome Trust Investigator Award | Dr | Rachel | McLoughlin | €1,577,507 |

| Project title | Host Institution | Scheme | Lead title | Lead Researcher forename | Lead Researcher surname | Amount |
|--|--|--|---------------|--------------------------------|-------------------------------|----------|
| Determining the mechanism of action of a novel histone deacetylase 6 specific inhibitor that kills chemoresistant breast cancer | Royal College of Surgeons in Ireland | Wellcome Trust Seed Award | Dr | Triona | Ní Chonghaile | €127,136 |
| Identifying the Aetiology of Diabetic Progenitor Cell Dysfunction In Osteoporosis | National University of Ireland, Galway [Diabetes Ireland Co-fund] | MRCG Co-funded Award | Prof | Timothy | O'Brien | €224,957 |
| Reducing resistance to beta-lactam antibiotics: A new treatment strategy for MRSA infections | National University of Ireland, Galway | Health Research Award | Prof | James | O'Gara | €328,853 |
| Comparative mass spectrometric profiling of the dystrophin complexome in normal versus pathological muscles with differing degrees of fibre degeneration | National University of Ireland, Maynooth [Muscular Dystrophy Ireland Co-fund] | MRCG Co-funded Award | Prof | Kay | Ohlendieck | €50,000 |
| Uncovering the role of ER-shaping proteins in neurodegenerative disease | University College Dublin | Wellcome Trust Seed Award | Dr | Niamh | O'Sullivan | €129,896 |
| Modelling of pharmacokinetics into ischemic heart tissue from an implantable, replenishable therapy reservoir. | National University of Ireland, Galway | Wellcome Trust Seed Award | Dr | Ellen | Roche | €98,161 |
| Targeting Autophagy in nephropathic cystinosis | University of Callifornia, San Franscisco [Cystinosis Ireland Co-fund] | MRCG Co-funded Award | Dr | Minnie | Sarwal | €300,000 |
| Pain registration in medical oncology clinics in Ireland | Mater Misericordiae University Hospital, Dublin | Cancer Nursing Research Project | Ms | Noeleen | Sheridan | €7,000 |

| Project title | Host Institution | Scheme | Lead title | Lead Researcher forename | Lead Researcher surname | Amount |
|---|---|--|---------------|--------------------------------|-------------------------------|----------|
| Supporting prescribing in Irish primary care: a non- randomised pilot study of a GP practice-based Pharmacist Medicines Optimisation Programme | Royal College of Surgeons in Ireland | Research Collaborative in Quality and Patient Safety | Prof | Susan | Smith | €259,443 |
| To determine how the National Comprehensive Cancer Network (NCCN) Guidelines for Tamoxifen and Aromatase Inhibitors (Als) can be adapted to address the symptom burden for women with breast cancer in the follow-up phase of treatment, who are receiving care in the North East of Ireland. | National University of Ireland, Galway | Cancer Nursing Research Project | Ms | Elizabeth | Summersby | €8,525 |
| Bacteria in Human Tumours | University College Cork [Cork Cancer Research Centre Co-fund] | MRCG Co-funded Award | Dr | Mark | Tangney | €125,950 |
| A comparison of emotion-focused therapy and cognititive-behavioural therapy in the treatment of generalised anxiety disorder | Trinity College Dublin | Health Research Award | Dr | Ladislav | Timulak | €323,309 |
| Building a risk calculator to inform prostate cancer diagnosis | University College Dublin | Health Research Award | Prof | William | Watson | €317,080 |

| LEADERSHIP AND CAPACIT | Y BUILDING | | | | | |
|--|---|--|---------------|--------------------------------|-------------------------------|------------|
| Project title | Host Institution | Scheme | Lead title | Lead Researcher forename | Lead Researcher surname | Amount |
| Perspectives of partners of women who experience mental health issues in the post-natal period | Trinity College Dublin | Health Professional Fellowship | Ms | Jill | Atkinson | €255,324 |
| Trinity College Dublin Institutional Strategic Support Fund | Trinity College Dublin | Wellcome Institutional Strategic Support Fund | Prof | John | Boland | €1,100,000 |
| The ExACT Trial - The effectiveness of Exercise combined with Acceptance and Commitment Therapy compared to a standalone supervised exercise intervention for chronic pain - A randomised controlled trial | University College Dublin | Health Professional Fellowship | Ms | Maire-Brid | Casey | €241,892 |
| SDHB and its role in opigenetic alteration in malignant phaeochromocytoma | National University of Ireland, Galway | Health Professional Fellowship | Dr | Ruth | Casey | €258,489 |
| The Irish kidney gene project-identification and characterisation of novel genetic causes of familial kidney disease | Trinity College Dublin | Health Professional Fellowship | Dr | Dervla | Connaughton | €256,493 |
| Anti-inflammatory therapy for preventing stroke and other vascular events after ischaemic stroke or transient ischaemic attack | University College Dublin | Cochrane Training Fellowship | Ms | Sara | Coveney | €91,152 |
| Hybrid repair versus conventional open repair for thoracic aortic arch aneurysms | National University of Ireland, Galway | Cochrane Training Fellowship | Ms | Ala | Elhelali | €54,436 |
| Membrane Sweeping for Induction of Labour | National University of Ireland, Galway | Cochrane Training Fellowship | Ms | Elaine | Finucane | €54,436 |
| University College Dublin Institutional Strategic Support Fund | University College Dublin | Wellcome Institutional Strategic Support Fund | Prof | William | Gallagher | €1,100,000 |

| Project title | Host Institution | Scheme | Lead title | Lead Researcher forename | Lead Researcher surname | Amount |
|--|---|--------------------------------------|---------------|--------------------------------|-------------------------------|----------|
| Neoadjuvant Treatments for malignant and metastatic melanoma | Trinity College Dublin | Cochrane Training Fellowship | Ms | Claire | Gorry | €20,750 |
| Hospital design for supporting people with dementia and their carers | Trinity College Dublin | Cochrane Training Fellowship | Mr | Tom | Grey | €54,235 |
| Artificial Neural Networks, Genomic Data and Case- Control Classification | Trinity College Dublin | Wellcome Trust Seed Award | Dr | Elizabeth | Heron | €84,798 |
| Use of software and computer technology in aphasia rehabilitation; investigating issues of efficacy, usability and cost effectiveness | University College Cork | Health Professional Fellowship | Ms | Aine | Kearns | €162,714 |
| Development and validation of metric-based training to proficiency for dental implant placement | University College Cork | Health Professional Fellowship | Dr | Elaine | Kehily | €251,408 |
| Characterisation of polyclonal IgG and paraprotein glycosylation in multiple myeloma to investigate structural and functional insights into stage-specific pathologies | Dublin City University | Health Professional Fellowship | Dr | Giao | Le | €251,857 |
| Interventions for promoting participation in shared decision-making for children and adolescents with cystic fibrosis | Trinity College Dublin | Cochrane Training Fellowship | Ms | Helen | Malone | €71,990 |
| Risk prediction models for familial breast cancer: a systematic review | Trinity College Dublin | Cochrane Training Fellowship | Ms | Sarah | McGarrigle | €62,498 |
| Interventions for improving medication adherence in solid organ transplant recipients | Royal College of Surgeons in Ireland | Cochrane Training Fellowship | Ms | Lisa | Mellon | €32,669 |
| Interventions for supporting pregnant women's decisions about first caesarean delivery | University College Cork | Cochrane Training Fellowship | Ms | Maeve | O'Connell | €66,478 |

| Project title | Host Institution | Scheme | Lead title | Lead Researcher forename | Lead Researcher surname | Amount |
|--|---|---|---------------|--------------------------------|-------------------------------|------------|
| Unwrapping the layers of complexity of clinical performance assessment of physiotherapy students and identifying key stakeholders' preferences towards enhancing the process | University of Limerick | Health Professional Fellowship | Ms | Anne | O'Connor | €242,477 |
| Metabolic reprogramming in innate immunity | Trinity College Dublin | Wellcome Investigator Award | Prof | Luke | O'Neill | €2,242,603 |
| Caesarean section in nulliparous women: Factors influencing decision-making process and outcomes for women - the MAMMI study caesarean section strand. | Trinity College Dublin | Health Professional Fellowship | Ms | Sunita | Panda | €255,779 |
| Identifying Interventions to Prevent and Manage Chronic Kidney Disease | National University of Ireland, Galway | Wellcome Postdoctoral Training Fellowships for Clinicians | Dr | Andrew | Smyth | €486,492 |
| Screening and Chemoprevention - cancer pharmacoepidemiology | Trinity College Dublin | NCI Cancer Prevention Fellowship | Dr | Susan | Spillane | €164,000 |
| Towards personalised therapy in stricturing Crohn's disease – exploring and exploiting the role of NADPH oxidase in intestinal fibrosis | University College Dublin | Health Professional Fellowship | Dr | Emily | Stenke | €259,104 |
| Sound-based Observation of Neonatal Brain Growth and Status | University College Cork | Wellcome Seed Award | Dr | Andriy | Temko | €134,435 |
| Oral hygiene programmes for people with intellectual disabilities. | Dublin Dental University Hospital | Cochrane Training Fellowship | Ms | Catherine | Waldron | €3,970 |

| INFRASTRUCTURE AND NETWORKS | | | | | | |
|--|--|---|---------------|--------------------------------|-------------------------------|------------|
| Project title | Host Institution | Scheme | Lead title | Lead Researcher forename | Lead Researcher surname | Amount |
| AllHPC Palliative Care Research Network - supplemental funding | Our Lady's Hospice & Care Services | All Ireland Institute of Hospice and Palliative Care | Ms | Paddie | Blaney | €210,000 |
| Malnutrition in the Elderly Joint Action Call | Department of Agriculture, Food and the Marine | JPI Healthy Diet for a Healthy Life | Dr | James | Conway | €249,864 |
| Evaluation of the Pilot Implementation of the Framework for Safe Nurse Staffing and Skill-Mix | University College Cork | Framework for Safe Nurse Staffing and Skill-Mix | Prof | Johathan | Drennan | €177,256 |
| Supplemental funding for the professional development of research nurses through support of the 10th annual conference of the Irish Research Nurses Network and travel bursaries for conferences and training courses, and upgrade of the IRNN website | Molecular Medicine Ireland | Clinical Research Coordination Ireland | Prof | Joseph | Eustace | €30,000 |
| Wellcome/Health Research Board Irish Clinical Academic Training Programme | Trinity College Dublin | Wellcome PhD Scholars Programme | Prof | Michael | Gill | €9,112,528 |
| ICORG General Central Office Renewal 2016-2018 | Cancer Trials Ireland | ICORG | Prof | Bryan | Hennessy | €8,995,200 |
| Award for the Irish Platform for Patient Organisations, Science and Industry | Irish Platform for Patient Organisations, Science and Industry | IPPOSI | Dr | Derick | Mitchell | €337,500 |
| HRB Collaboration in Ireland for Clinical Effectiveness Reviews (CICER) | Health Information and Quality Authority | HRB-CICER | Dr | Mairin | Ryan | €2,248,440 |
| Interim award to the Medical Research Charities Group | Medical Research Charities Group | MRCG Core funding | Mr | Philip | Watts | €50,000 |

Appendix C

| HRB Co-funded awards | | | | | | |
|--|--|------------------------|-----------------|--|--|--|
| Scheme | Co-funding partner | Co-fund allocation (€) | Total award (€) | | | |
| All Ireland Institute of Hospice and Palliative Care | Northern Ireland R&D Office | €110,000 | €210,000 | | | |
| Applied Partnership Awards | St. Vincent's University Hospital | €39,962 | €239,491 | | | |
| JPI Healthy Diet for a Healthy Life | Department of Agriculture, Forestry and the Marine | €124,932 | €249,864 | | | |
| MRCG Co-funded Award | unded Irish Medical €978,412 Charities | | €2,418,918 | | | |
| Research Collaborative in Quality and Patient Safety | Health Service Executive | €269,962 | €539,426 | | | |
| US-Ireland R&D Partnership Award | Co-funding partners in Northern Ireland and the USA | €6,322,461 | €7,018,000 | | | |
| Wellcome Institutional Strategic Support Award | Wellcome and Science Foundation Ireland | €1,650,000 | €2,200,000 | | | |
| Wellcome Investigator Award | Wellcome and Science Foundation Ireland | €2,865,083 | €3,820,110 | | | |
| Wellcome PhD Scholars Programme | Wellcome | €4,556,264 | €9,112,528 | | | |
| Wellcome Postdoctoral Training Fellowships for Clinicians | Wellcome | €243,246 | €486,492 | | | |
| Wellcome Seed Award | Wellcome and Science Foundation Ireland | €430,820 | €574,426 | | | |
| Grand Total | | €17,591,141 | €24,669,255 | | | |

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