

Health Research in Action

Research. Evidence. Action.

Introduction

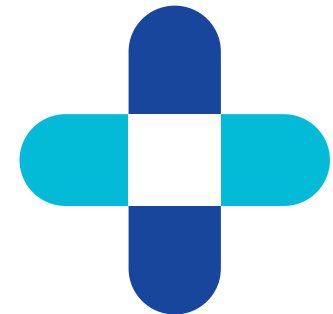
The Health Research Board (HRB) is Ireland's lead funding agency supporting innovative health and social care research and delivering data and evidence that improves people's health and patient care. We are committed to putting people first, and ensuring that data and evidence are used in policy and practice to overcome health challenges, advance health systems, and benefit society and the economy.

This year's *Health Research in Action* highlights some of the many notable impacts and outcomes of our work. It includes a snapshot in numbers of recent work completed, followed by 19 success stories about wide-ranging health and social care research across four themes.

The stories include HRB-funded projects about identifying bacteria linked to increased cancer-risk in the mouth, better care for recurrent miscarriage in Ireland, delivering better evidence for national clinical trial guidelines and leading the first major clinical trial for diabetes during pregnancy. Research conducted directly by HRB staff made many important contributions to national conversations around varied aspects of health policy, including the cost, safety, and environmental impact of reprocessing single-use medical devices, measuring the impact of Ireland's mental health policy and informing public funding for best outcomes on Assisted Reproductive Technologies.

However, these are just a few examples of many projects covered in *Health Research in Action*, all of which demonstrate how our work is benefitting Ireland's economy, its society and, above all, its people, who are at the heart of everything that we do at the HRB.

We would like to thank our science writer Dr Claire O'Connell and our HRB and HRB funded researchers for helping us compile this publication. We would also like to thank the public, patients and carers, as well as health and social care professionals for the role they have in research and who make so much of our work possible.



Contents

HRB by numbers

3

HRB success stories

Theme 1: Working together for greater impact on health and social care in Ireland

5

Theme 2: New insights into disease

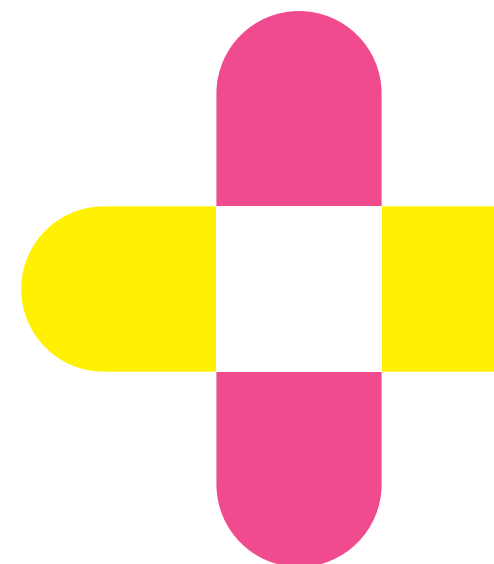
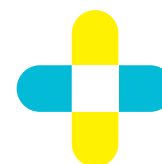
14

Theme 3: Spotlight on pregnancy and reproductive health

19

Theme 4: Evidence to inform health policies

25



HRB by numbers

- A snapshot of work completed in 2023

The team managing our National Health Information Systems:

Serviced **90** requests for data

Published **4** peer-reviewed journal articles

Published **5** annual reports and national bulletins on drugs and mental health

The HRB Evidence Centre:

Completed **10** evidence products for the Department of Health:

3 evidence reviews

6 evidence briefs

1 evidence highlight

In terms of funding

91

awards

completed in 2023, worth a total of

€50,616,664

This research resulted in:

11

new methods or materials (e.g. assays, databases, training materials)

10

healthcare innovations (e.g. medical devices, therapies or interventions)

86

influences on policy or practice (e.g. new clinical guidelines, policy reports)

344

engagements with public bodies and media

75

instances of public, patient and carer involvement (PPI) in research



Supported 295 research jobs

- 31**  PhD Candidate Academic
- 4**  PhD Candidate Health and Care Practitioner
- 61**  Postdoctoral Researcher/
Post-doctoral Scientist
- 16**  Research Fellow
- 28**  Clinical Nurse Specialist/Research Nurse
- 77**  Research Assistant
- 15**  Admin Assistant
- 9**  Programme Manager/Coordinator
- 6**  Lead applicant
- 48**  **Other expertise** (e.g. Speech and language, OT, biostatistician, health economist, data manager, communication manager, dental hygienist etc)-



Significant academic outputs

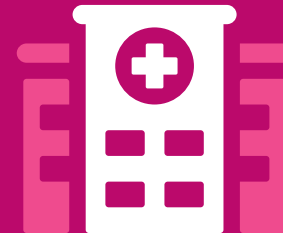
- 26** PhDs completed or in progress
- 630** Peer-reviewed publications
- 111** Non peer-reviewed publications
- 151** Presentations at scientific conferences
- 25** Academic collaborations with national colleagues
- 49** Academic collaborations with international colleagues



The economic impact

-  Leveraged **€204,616,832** total funding on foot of these awards
-  Started **two** industry collaborations
-  Filed **one** patent

Theme 1: Working together for greater impact in health and social care in Ireland



IRROG - Bringing high-quality Radiotherapy Clinical Trials to Ireland

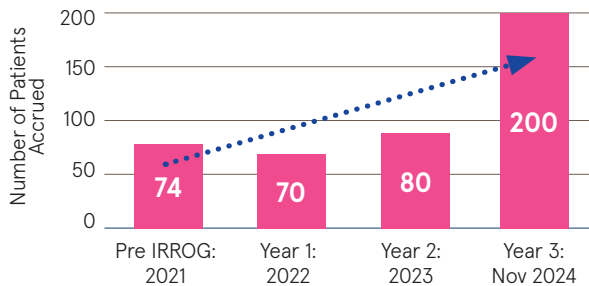
Lead Researcher: Professor Sinéad Brennan,
Consultant Radiation Oncologist at St James's Hospital and Clinical Lead, IRROG

The problem

Radiotherapy uses ionising radiation to cure cancer, to help improve the outcomes of cancer surgery and to help relieve symptoms of cancer. Nearly half of all patients require radiotherapy during their cancer journey with radiotherapy responsible for 40% of all cancer cures. However until recently, Ireland lacked a dedicated infrastructure for co-ordinating clinical trials in radiotherapy.

The project

The HRB funded, Irish Research Radiation Oncology Group (IRROG), includes public radiotherapy centres in Cork, Galway and St Luke's Radiation Oncology Network in Dublin and collaborating private centres.



Accruals to Interventional Clinical Trials within Irish radiotherapy departments

The outcomes

- The number of patients accessing interventional clinical trials in radiation oncology in Ireland has increased from 74 in 2021 to 200 in 2024.
- In 2024, eight new trials have opened in Radiation Oncology departments across the country in breast cancer, prostate cancer, head and neck cancer and pancreatic cancer.
- Trials include studies to test immobilisation techniques to make patients more comfortable and treatments more accurate, using high doses of radiation for early-stage lung cancers and other cancers that have started to spread and how to combine radiation therapy with other drug treatments to improve outcomes in various cancers.
- IRROG is providing support to Medical Physics in establishing a national radiotherapy Quality Assurance programme.
- The network is delivering training to student radiation therapists and nurses to highlight the importance of research within their career pathways.

- IRROG is currently co-ordinating five Irish investigator-designed national, and nine international academic radiotherapy trials. These numbers are set to increase to six national and 20 international trials in 2025.

Professor Sinéad Brennan, Consultant Radiation Oncologist at St James's Hospital and Clinical Lead for IRROG, says:

“Since IRROG was established in 2022, we have been successful in increasing the number of patients accessing high-quality academic trials. By opening radiotherapy trials at all radiotherapy centres in Ireland, we are able to provide equal access to trials for all patients having radiotherapy which is proven to improve outcomes and cure rates for patients. In 2025, the number of trials open around the country in radiation oncology is set to more than double in every IRROG site.”



HRB-TMRN: Enhancing the design, conduct, reporting and dissemination of clinical trials

The problem:

Clinical trials need to be more inclusive, efficient, and meaningful – ensuring they serve patients, the public, clinicians and researchers effectively.

The project:

The HRB-Trials Methodology Research Network (HRB-TMRN) unites five Irish universities and international partners to improve clinical trials. Its activities span education, research and public engagement.



The outcomes:

Since 2014, the HRB-TMRN has:

- Trained more than 53,000 people in trials methodology, and more recently, trials essentials.
- Supported 18 researchers to carry out 24 projects in a variety of areas, including recruitment and retention to trials, novel statistical analysis of trials, testing novel trial design approaches and understanding how we can make trials more inclusive.
- Inspired global organisations to adopt our SWAT seed-grant funding model.
- Supported trialists nationally to embed primary trials methodology research within clinical trials.
- Supported more than 100 applicants to the HRB DIFA's scheme, directly linking Irish investigators with trials methodology experts nationally and internationally.



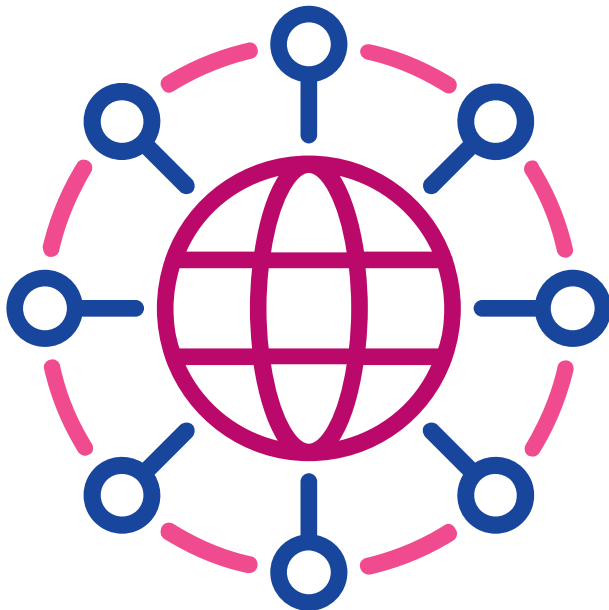
- Developed the PRioRiTy study's Top 10 questions about the most important things we need to know for better recruitment of people for clinical trials. These questions are now used by trialists internationally and the study served as a template for other priority-setting partnerships in research methods.
- Provided expert guidance to more than 130 researchers on novel trial design challenges outside of the standard randomised trial design via our Trials Methodology Advisory Service.
- Mentored more than 50 Summer Scholars and 21 PhD Scholars, across the network.
- Engaged more than 1,300 primary school students in the HRB-TMRN's 'START competition' (www.STARTCompetition.com), an annual challenge for primary schools in Ireland to conduct their own trials in the classroom. START has resulted in 65 child-led, classroom-based clinical trials being planned, designed and reported.



Lead Researchers:

Professor Declan Devane, Scientific Director, HRB-TMRN and Dr Sandra Galvin, National Programme Manager, HRB-TMRN at University of Galway.

- United more than 3,000 members of the public across 72 countries in planning, designing, conducting and reporting a randomised trial as part of 'The People's Trial'. The question the public chose for the trial was, 'Does reading a book in bed make a difference in sleep, in comparison to not reading a book in bed?'. The report of this trial led to a plain English report of 'The Reading Trial'.
- Launched The Kids' Trial, co-designing trials with children around the world.



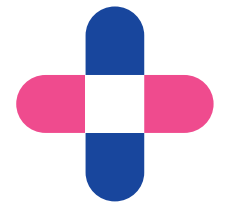
Dr Sandra Galvin, National Programme Manager with the HRB-TMRN at the University of Galway, says:

“The HRB Trials Methodology Research Network was established to address a clear need within the Irish clinical trials research community. Responding to this need, the HRB acted as a proactive funder, enabling over a decade of capacity-building efforts in this critical area. Each partner site within the Network contributes unique expertise, creating a collaborative powerhouse capable of delivering impactful training, conducting cutting-edge research, and providing scalable funding opportunities. Together, we are driving improvements in the quality and rigour of clinical trials while significantly enhancing public engagement with health research.”



Professor Declan Devane, Scientific Director of the HRB-TMRN, University of Galway, says:

“It’s amazing to see how far we’ve come in improving clinical trials by simply bringing people together and learning from each other. Whether it’s researchers sharing ideas, members of the public giving their insights, or even primary school students getting excited about science – everyone has played a part. What really stands out to me is how practical solutions developed here in Ireland are now helping research teams around the world. None of this would have happened without the HRB investing in trials methodology research, and of course, all the dedicated people who have helped build this network over the years.”



CICER – Bringing the evidence for National Clinical Guidelines

Host: Health Information and Quality Authority (HIQA)

The problem:

National Clinical Guidelines inform clinical practice and policies. The National Clinical Effectiveness Committee (NCEC) requires guideline developers to take account of the relevant evidence and budget impact analysis when developing these guidelines in Ireland.

The project:

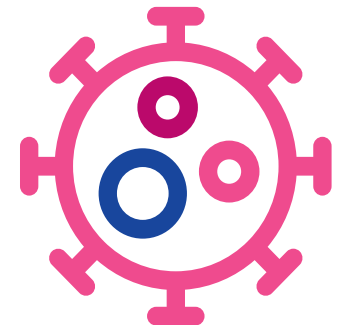
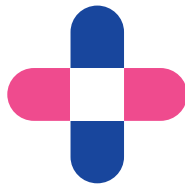
Since 2017, the HRB has funded CICER, the Centre in Ireland for clinical guideline support and Evidence Reviews, at HIQA, to independently gather and review evidence and to estimate costs to inform the development of National Clinical Guidelines.

The outcomes:

- CICER has provided evidence to inform 14 National Clinical Guidelines.
- Guidelines include early-warning systems to spot acute deterioration in patients; diagnosing ovarian cancer; how to help people to stop smoking; managing Type 1 diabetes, and preventing and controlling infection.
- In 2020, CICER worked with other HIQA teams to provide evidence to the National Public Health Emergency Team (NPHE) relating to the Covid-19 pandemic.
- CICER takes part in the Guidelines International Network, which enables Ireland to learn from, and share information with other countries about how best to develop clinical guidelines.
- CICER team members are researching and publishing best-practice for communicating evidence to support decision-making, including the use of summaries, frameworks and infographics.

Dr Máirín Ryan, Deputy Chief Executive and Director of Health Technology Assessment at HIQA, says:

“In Ireland, National Clinical Guidelines inform clinical practice. These are important policy instruments, so they need to be evidence-based and we need to understand the cost of implementing them. Since 2017, CICER has provided rigorous methodological support for 14 National Clinical Guidelines, bringing a wealth of expertise to this process, including evidence synthesis, health economics, evidence-based medicine, clinical guideline development and patient and public involvement.”



HRCI: A joint approach with charities to support health and social care research

Lead: Avril Kennan, CEO, Health Research Charities Ireland (formerly Medical Research Charities Group)

The problem:

Health-focused charities in Ireland want to fund health and social care research, but their funding may be limited by what they can raise.

The project:

In 2006, Health Research Charities Ireland, previously the Medical Research Charities Group, and the HRB set up a joint funding scheme to support research projects in health and social care.

The outcomes:

- More than 160 projects in health and social care research have been jointly funded by HRCI members and the HRB, totalling around €27 million.
- HRCI has empowered many of its 45 member organisations to participate in the scheme, providing them with support in public and patient involvement (PPI), research management and governance.
- To emphasise the importance of research impact for charities, HRCI launched the Research Impact Award. The inaugural winner was announced in 2022, and several inspiring impact stories were published on the HRCI website.
- Substantial impacts from funded research projects include identifying genetic causes for rare diseases, new approaches to the management of health conditions and educational resources for patients, carers and families.

Dr Avril Kennan, CEO of Health Research Charities Ireland, says:

“The strength of HRCI lies in the community that we have built over the years. Our role is to help keep the charities informed about the latest developments and to provide access to matched research funding through the HRB. It means that even smaller charities can fund substantial pieces of research and bring strengths such as public and patient involvement. We see impactful findings from this research that make a difference to patients, service users and the people who care for them.”



SPHeRE: A structured approach for skills in population health, policy and health services research

The problem:

Population health and health services research can improve health and social care nationally, but historically Ireland had no structured PhD research programmes in these areas.

The project:

Since 2013 the HRB has funded the SPHeRE (Structured Population Health, Policy and Health-services Research Education) programme to support PhD research and broader training and networking in population health, health services research and, more recently policy.

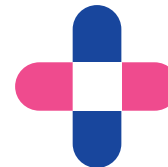
The outcomes:

- Almost 100 people have graduated through the SPHeRE programme.
- SPHeRE alumni have reached senior levels in academia, in policy/research roles in the public sector, in clinical research roles and in key Irish health system organisations.

- Individual SPHeRE PhD projects have had multiple impacts, including informing national guidelines for breast cancer and aphasia care; feeding into policy for speech and language therapy in children and adolescents; highlighting the need for staff training in hospitals about stroke symptoms and implementing personalised budgets in healthcare.
- SPHeRE now has nine national university partners as well as international collaborators.
- SPHeRE runs an annual conference, several webinars and in-person seminars each year for a wide network of members in Ireland and internationally with an interest in population health, policy and health services.
- The programme has published on what the key areas are for PhD training in population health, policy and health services research and is developing a blueprint for how to deliver interdisciplinary PhD training, which can provide a template for programmes in other areas of research.

Dr Mary Clarke, co-Director of SPHeRE and Associate Professor in the Departments of Psychology and Psychiatry in RCSI University of Medicine and Health Sciences, says:

“In SPHeRE, we take a very structured approach to training where our PhD researchers learn about a breadth of different approaches for solving problems and carrying out research, including quantitative and qualitative research, health economics, policy analysis and data management. It means they develop a wide understanding of how to identify and tackle important health research questions, and they are able to collaborate with many disciplines and stakeholders to have an impact in population health, policy and health services. We have also grown our wider SPHeRE network since 2013, enhancing the expertise and reach of our research community.”



Quotes from Alumni:

Dr Emma O'Shea (2015-2019)
Lecturer, Centre for Gerontology and Rehabilitation, School of Medicine, University College Cork

“A key element of SPHeRE for me, has been how it has become such a prolific training hub for PhD students in health-related disciplines, and has constructed and truly integrated a comprehensive network of active health researchers, which the students and alumni can link in with.”



Dr Daniela Rohde (2014-2018)
Senior Analyst, National Care Experience Programme, HIQA

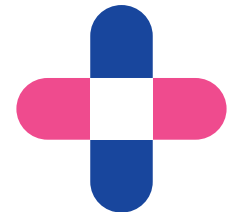
“Through the structured element of the programme and the SPHeRE Network resources and events, I developed a much broader and deeper knowledge and understanding of a wide range of issues related to population health, health service delivery and related stakeholders in Ireland, which are vital to my current role.”

Dr Alan Maddock (2014-2018)
Lecturer in Psychology, RCSI

“Prior to starting on the programme, I was a qualified social worker working with vulnerable populations. I had thought about pursuing a PhD and potentially a career in academia. Without the excellent support offered by the SPHeRE programme, this dream would likely have been unfulfilled.”

Prof Brian Cleary (2007-2011)
Chief Pharmacist, Rotunda Hospital/HSE Maternal and Newborn Clinical Management System

“I was fortunate enough to be the first graduate of the programme and also to have the opportunity to supervise another SPHeRE scholar, Fergal O'Shaughnessy, through to thesis submission. Fergal won the Shani Rushin award in his first year and secured a Fulbright Fellowship in his final year. He also helped establish international research collaborations in Odense, New York and Los Angeles.”



RD CTN – A new network in Ireland to boost rare-disease clinical trials

Rare Disease Clinical Trial Network

The problem:

Around 300,000 people in Ireland live with a rare disease, and clinical trials are an important way for patients to access much-needed therapies.

The project:

The HRB-funded Rare Disease Clinical Trials Network was established in 2022 to address the challenges of conducting rare-disease clinical trials in Ireland. The network engages with patients, researchers and industry to build capacity for rare-disease clinical trials through education and collaboration with international experts while keeping the patient voice at its core.



The outcomes:

- The network is supporting new, active clinical trials in Ireland on Familial Paget’s Disease, Osteogenesis Imperfecta, Autoimmune Pulmonary Alveolar Proteinosis and Idiopathic Inflammatory Myopathy (IIM).
- A Public and Patient Involvement (PPI) panel, in partnership with Health Research Charities Ireland, led by a dedicated PPI liaison officer, ensures patients and caregivers are shaping the network’s activities and clinical trials.
- In 2024, the network held a conference attended by around 100 people from across patient, industry and research communities.
- A seed-funding award is in place to support early- to mid-career researchers to pilot data for future clinical trials in rare diseases.
- A project to improve inclusion of people living with rare diseases in rare-disease research is underway thanks to a successful ‘EDI in PPI in Research’ seed funding award from PPI Ignite Network, UCD.

- The network is building a record of rare-disease research and trials in Ireland, which can help clinicians, industry and patients to connect.
- The network has contributed to international guidelines on Pulmonary Alveolar Proteinosis, Birt-Hogg-Dubé Syndrome and XLH.

Prof Rachel Crowley, Co-Lead of the Rare Disease Clinical Trial Network, says:

“Small, geographically dispersed patient populations mean that designing and conducting clinical trials for rare diseases is a challenge. As a network, we are building resources and connections with researchers, industry, clinicians and patients, so that more people with rare diseases in Ireland can access clinical trials. And throughout everything we do, we look to engage with the people who live with rare diseases, so they can shape future clinical trials and access therapies that are right for them.”



Theme 2: New insights into disease



7-2-1: Know the signs of heavy menstrual bleeding

Lead Researchers: Professor James O'Donnell and Dr Michelle Lavin, RCSI University of Medicine and Health Sciences

The problem:

Around 1 in 1000 people in Ireland have the bleeding disorder Von Willebrand Factor disease, and women are disproportionately affected because of periods and childbirth. Knowing the signs of heavy menstrual bleeding could help to identify women in need of diagnosis and extra support.

The project:

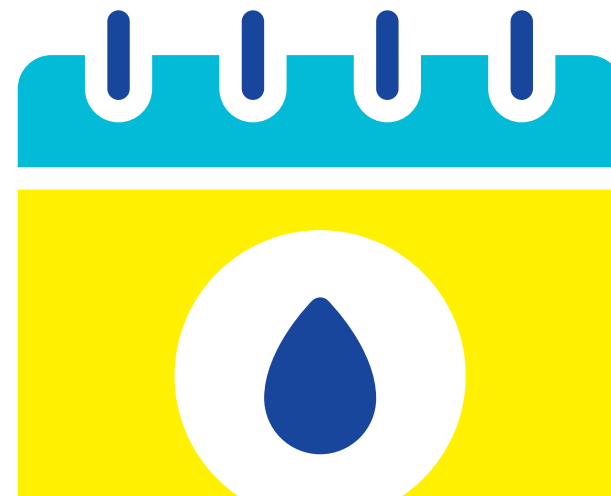
The LoVIC (Low Von Willebrand in Ireland Cohort) project researched heavy menstrual bleeding and developed online materials to highlight symptoms and signs.

The outcomes:

- We now know that more than 85% of women attending treatment for mild-to-moderate von Willebrand Factor disease in Ireland are deficient in iron, and 10% of them may eventually require a hysterectomy to control the bleeding.
- The '7-2-1' social media campaign highlighted the signs of heavy menstrual bleeding for the general population: bleeding for 7 days, changing a tampon every 2 hours or less and passing clots the size of a one euro coin.
- 21.3% of 13-33-year-old Irish females viewed the Instagram campaign.
- A website www.knowyourflow.ie, was developed in collaboration with the Irish Haemophilia Society to encourage awareness of heavy menstrual bleeding in female teenagers and young adult women.

Professor James O'Donnell, Professor of Vascular Biology at RCSI University of Medicine and Health Sciences, says:

“Many women who experience heavy menstrual bleeding accept it as normal. Some of these women may have undiagnosed Von Willebrand disease. And for all women, whether they have a bleeding disorder or not, heavy menstrual bleeding can lead to anaemia or a lack of iron, which in turn can result in feeling unwell, tired and weak, missing days of work or school and cognitive issues. Knowing the signs of heavy menstrual bleeding is a step towards getting support and treatment if needed.”



Identifying bacteria linked to increased cancer risk in the mouth

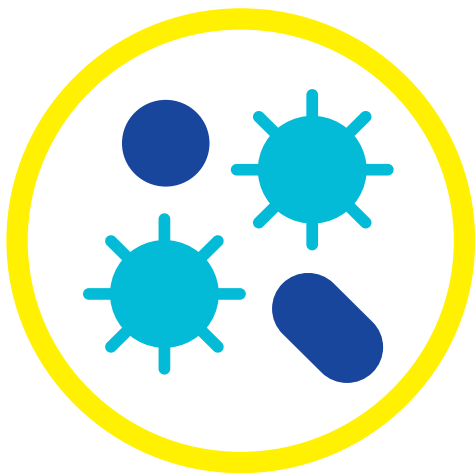
Lead Researchers: Dr Gary Moran and Prof Claire Healy, Trinity College Dublin

The problem:

Oral squamous cell carcinoma (OSCC) accounts for 90% of all cancers of the mouth, and its incidence is rising. OSCC often starts as oral leukoplakia, or white patches in the mouth. It is currently difficult to predict which white patches will develop into cancer.

The project:

The researchers took mouth swabs from 177 people with oral leukoplakia and from people without leukoplakia, then analysed bacteria from the swabs and linked them to clinical details.



The outcomes:

- The researchers created Ireland's first registry of patients with oral leukoplakia, which includes the 177 patients on the study and almost 1,000 more patients from historic charts.
- The funding established Trinity's first research programme on the mouth microbiome, and enabled the researchers to join European research consortia.
- The research showed that Fusobacterium bacteria are more likely to be present on leukoplakias that develop into cancer, and that Fusobacterium encouraged tumour cells to become more aggressive in the lab.
- The microbe will now be tested as a biomarker to identify patients who are at risk of progressing to cancer.
- The research showed that smoking and alcohol alter microbes in the mouth, potentially encouraging bacteria that create cancer-causing compounds.
- Researchers on the project took part in numerous outreach activities, including school visits to encourage oral hygiene and public engagement on European Researchers' Night.

Dr Gary Moran, Associate Professor of Microbiology at the Trinity College Dublin Dental School, says:

“The funding from the HRB has transformed how we carry out research into the mouth microbiome at Trinity Dental School and supported a research hygienist to collect the swabs from patients, bridging the clinic setting and the research laboratory. We found a link between Fusobacterium bacteria in the mouth and the risk of developing cancer. This paves the way for testing it as a biomarker to make it easier to identify patients who are at risk.”



An easy tool to identify who is likely to have osteoporosis in Ireland

Lead Researcher: Professor John Carey, University of Galway

The problem:

We need better ways to identify people who have osteoporosis and brittle bones, before they break (fracture). If a person is not diagnosed and treated in time, bone fractures can severely affect their quality of life, while testing and treating people who are not at risk is wasteful, and may be harmful.

The project:

Researchers analysed data from more than 36,000 people who underwent DXA scans, and developed and validated an online tool to screen people in Ireland for osteoporosis.

The outcomes:

- The study provided the first valid estimate of low bone mass among adults in Ireland aged over 50 years (1 – 1.25 million).
- The researchers estimate that today between 300,000 and as many as 500,000 people over 50 years of age in Ireland have osteoporosis.
- The study validated an easy-to-use tool (Osteoporosis Self-Assessment index or OSTi) that uses age and weight to screen Irish people for their probability of having osteoporosis
- Application of the OSTi or a similar tool which the researchers developed and validated using age, gender, height and weight, could save approximately €100 million in Ireland each year on unnecessary testing and treatment for osteoporosis.
- Researchers Dr Attracta Brennan and Ms Elena Zoldi created a website, <https://dxa-map.com/> to raise awareness about screening.

- Students created a series of posters and Tik-Tok videos about osteoporosis, including *Humpty Dumpty had Osteoporosis*.
- The project team hosted three coffee mornings in Merlin Park in 2024 for patients and the public on World Osteoporosis Day.

Professor John J. Carey, Consultant Rheumatologist and a Professor of Medicine at the University of Galway, says:

“Before we did this research, national validated data did not exist about the prevalence of osteoporosis or the incidence of major osteoporotic fractures in Ireland. Our HRB-funded research has enabled us to provide robust estimates for the first time, and importantly, develop and validate an online assessment tool that can quickly (less than 10 seconds) identify who is likely to have osteoporosis.”



Women fare worse with chronic kidney disease than men

Lead Researcher: Professor Austin Stack, University of Limerick

The problem:

Chronic kidney disease is rising in Ireland, and little is known about its impact on hospitalisation and mortality and whether differences exist between men and women.

The project:

Researchers analysed hospitalisation rates and mortality rates for 125,890 patients who had baseline measurements of kidney function in the Irish healthcare system, and were followed for a median of 7.7 years.

The outcomes:

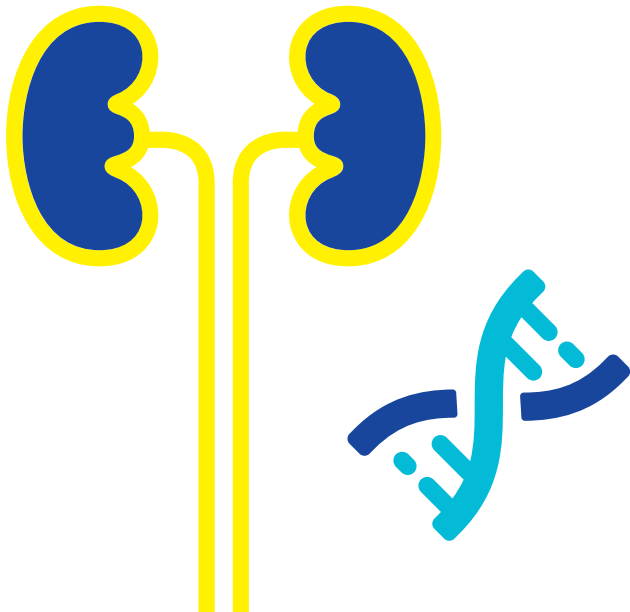
We now know that in Ireland:

- chronic kidney disease is far more common in women than in men.
- chronic kidney disease is associated with very high rates of hospitalisation that affects both men and women, but the rates are far greater in men than women.
- men are more likely than women to be hospitalised across all stages of chronic kidney disease, with the greatest differences observed for men with the poorest kidney function
- compared to individuals with normal kidney function, women with advanced kidney disease are 4-fold more likely to get hospitalised, while men are 5-fold more likely to get hospitalised.
- chronic kidney disease elevates the risk of death for men and women, but unlike the general population, mortality rates rise faster in women than they do in men with worsening kidney disease.

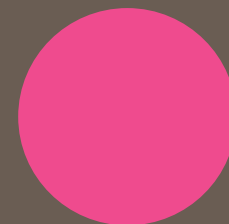
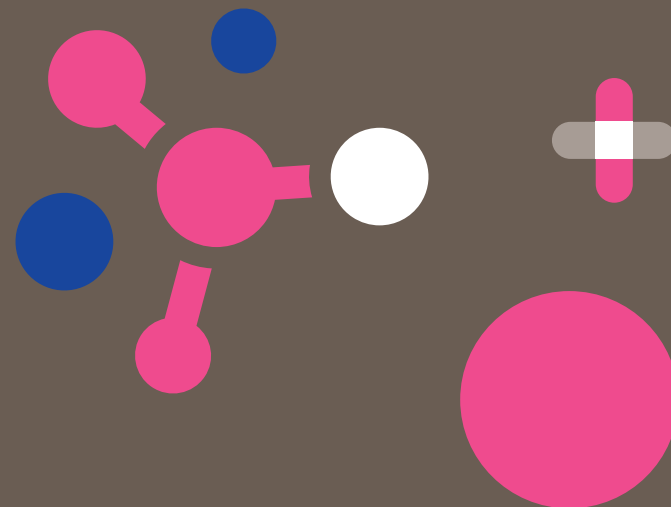
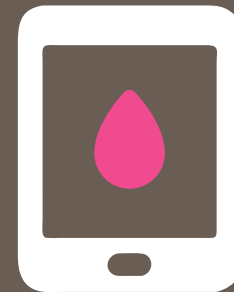
Professor Austin Stack, Consultant Nephrologist and Professor and Foundation Chair of Medicine at the School of Medicine, University of Limerick, says:

“What we’ve shown for the first time through this research is that important differences exist between men and women with chronic kidney disease in terms of the burden of disease and its impact on major clinical outcomes. Both men and women experience very high rates of acute hospitalisation that increase substantially with worsening kidney function, with men incurring the highest rates.

More intriguing, however, in the general Irish population, women tend to live longer than men, but kidney disease changes this. When a woman has advanced kidney disease, she loses that survival advantage over men. The next steps are to investigate the reasons that underpin these findings, as well as to develop targeted interventions and policy initiatives to eliminate sex disparities and protect women from this unequal burden of disease.”



Theme 3: Spotlight on pregnancy and reproductive health



Better care for recurrent miscarriage in Ireland

Lead Researchers: Professor Keelin O'Donoghue and Dr Marita Hennessy, University College Cork

The problem:

Ireland lacked national clinical guidelines and research on recurrent miscarriage, where a woman has multiple first-trimester miscarriages.

The project:

The RE:CURRENT project carried out a systematic review of international guidelines, conducted interviews with 62 participants (20 women and men with lived experience, 42 healthcare providers), co-created care-quality indicators, assessed practices at 19 maternity units around Ireland, conducted a national care experience survey and actively collaborated with a 22-person research advisory group.



The outcomes:

- Recommendations for a graded model of care in Ireland, with a standard minimum service for women/couples experiencing miscarriage that is personalised, based on their needs.
- The research directly informed new national clinical guidelines in Ireland, which revised the definition of recurrent miscarriage from three to two consecutive losses.
- A publicly available infographic and document, 'Why don't we talk about pregnancy loss?', to spur awareness and action around pregnancy loss.
- Information booklets developed with people who have lived experience and health professionals, and illustrated by Amy Lauren, to explain miscarriage, recurrent miscarriage and supports in Ireland.
- The booklet is to be distributed to all maternity units nationally.
- Webinars with Professor Keelin O'Donoghue to update the Royal College of Physicians of Ireland and the Department of Health's Women's Health Taskforce on the project's findings and affect change in policy and practice.

Dr Marita Hennessy, Postdoctoral Researcher within the Pregnancy Loss Research Group at the INFANT Centre, University College Cork, says:

“When we started the RE:CURRENT project there was a gap in research around recurrent miscarriage in Ireland, and we knew from the experience of people on the ground that the service provision was not meeting their needs and varied across the country. The project enabled us to learn from a wide variety of people about the lived experience of recurrent miscarriage and how to best structure and deliver care to enhance experiences and outcomes, and we have been able to translate our findings to inform clinical guidelines in Ireland and information resources for maternity services.”

More information: <https://www.ucc.ie/en/pregnancyloss/researchprojects/recurrent/>

EMERGE trial shows metformin is helpful in gestational diabetes

Lead Researcher: Professor Fidelma Dunne, University of Galway

The problem:

One in six pregnant women has or develops diabetes, which can lead to large babies, complicated delivery and long-term health risks for mothers and babies. Insulin is a standard treatment in Ireland, but it is relatively expensive and requires injections.

The project:

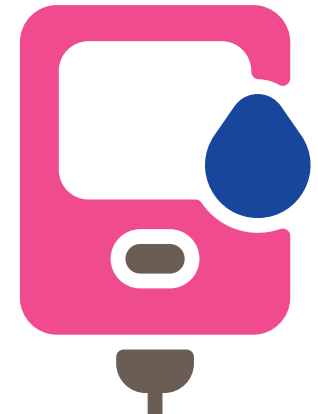
The EMERGE trial (effectiveness of metformin in addition to usual care in the reduction of gestational diabetes mellitus effects), led by University of Galway, gave participating women with gestational diabetes (GDM) the sugar-controlling medicine metformin, or else a placebo in addition to their standard treatment.

The outcomes:

- The EMERGE trial was the first large, double-blind, placebo-controlled clinical trial in GDM.
- EMERGE examined the effects of metformin compared to placebo with usual standard lifestyle treatment in 535 pregnancies in Ireland where the mother had GDM.
- Women who took metformin were 25% less likely to require insulin, or they started insulin later in the pregnancy if needed, and they had less weight gain compared to the placebo group.
- The babies of the women on metformin were less likely to be large for gestational age or weigh over 4kg.
- Importantly, there was no statistical difference in numbers of babies born small-for-gestational-age and no other safety concerns with metformin.
- The findings will now assist clinicians in the treatment of GDM in Ireland and internationally, and contribute to guideline changes.
- The researchers have started to follow up the mothers and babies from EMERGE to examine the long-term effects of controlling diabetes with metformin in pregnancy.

Consultant Endocrinologist Professor Fidelma Dunne, Professor in Medicine at the School of Medicine and Director of the Institute for Clinical Trials at University of Galway says:

“By treating GDM effectively in pregnancy, we can lower the risks that GDM imposes on both mother and baby. Traditionally, we use lifestyle intervention and, if needed, insulin to control blood sugars. Metformin is widely available, is cheap and is taken as a pill, which is easier than injecting insulin for pregnant women. Globally we are seeing a rise in diabetes in pregnancy, including in emerging economies where insulin may not be available, affordable or practical. The EMERGE study gives pregnant women and their doctors assurance that metformin is an alternative option in the treatment of GDM.”



E-MAT - A new game to encourage men to check for testicular changes

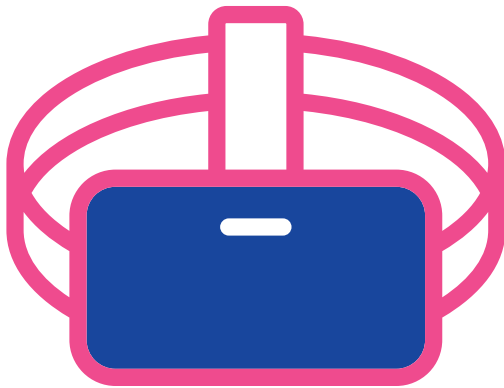
Lead Researcher: Dr Mohamad Saab, University College Cork

The problem:

Testicular cancer is the most common cancer in men aged 15 to 44 years. Men should check themselves regularly for testicular lumps and changes as early detection can improve outcomes.

The project:

UCC researchers worked with local GAA clubs to test an interactive game, Enhancing Men's Awareness of Testicular diseases (E-MAT), which they delivered via VR headsets (37 men) and electronic tablets (37 men).



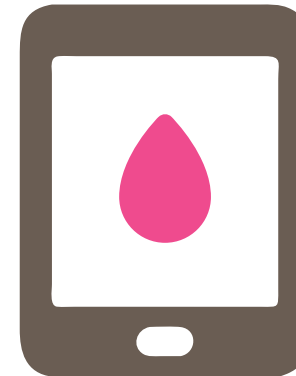
The outcomes:

- E-MAT improved awareness among all participants of the need to test themselves for testicular cancer, and awareness remained high at three-month follow-up.
- VR was shown to be a feasible way to deliver E-MAT.
- The E-MAT programme now has a protocol to scale it up to a cost-effective larger study.
- E-MAT was featured in national media outlets, spreading the word about the need for men to check their testicles for any changes.
- Dr Saab and colleagues also engaged with members of the LGBTQ+ community to co-design and launch a new awareness campaign, On the Ball, about self-testing for testicular cancer.



Dr Mohamad Saab, Senior Lecturer in the School of Nursing and Midwifery, University College Cork, says:

“E-MAT is an interactive game that encourages the players to become more familiar with how to test their testicles for changes, and when they should seek medical advice. Thanks to HRB funding, we were able to fine tune the VR delivery for E-MAT, which means we can now expand the programme to raise awareness across larger numbers of men.”



Towards a blood test to predict reactions to radiotherapy in prostate cancer

Lead Researchers: Professor Fiona Lyng and Dr Aidan Meade, TU Dublin

The problem:

Some patients who have radiotherapy for prostate cancer experience severe reactions, which may cause bladder and bowel problems, but there is no test to predict who is at high risk of adverse effects.

The project:

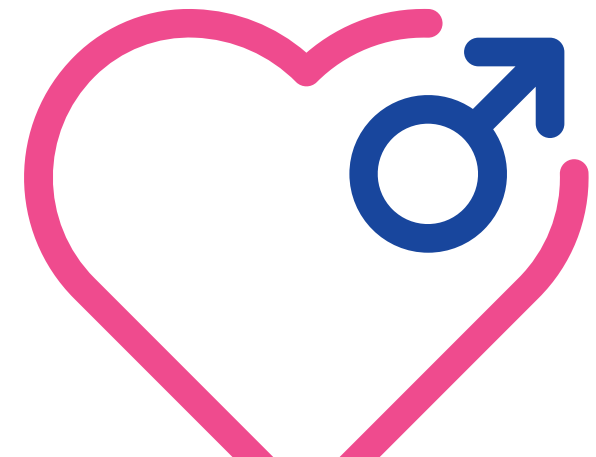
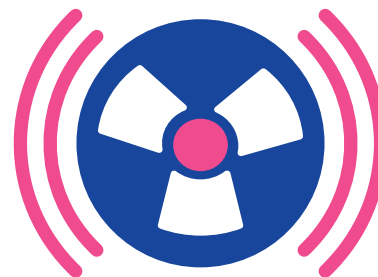
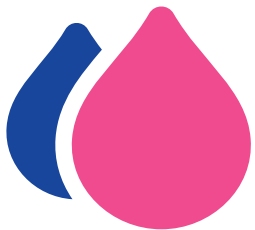
Researchers at TU Dublin analysed stored blood samples from 143 people in a European project (REQUITE) who were about to undergo radiotherapy for prostate cancer, and looked for molecular patterns in the blood that could help to predict who went on to have severe reactions.

The outcomes:

- Raman and Infra-red spectroscopy, which measure many different types of biological molecule in a sample, could predict severe toxicity from radiotherapy with 80-90% sensitivity.
- The analysis showed that fats in the blood were less clinically useful for predicting severe reactions.
- The researchers now plan to carry out and refine the tests on stored blood tests from a larger group of people undergoing radiotherapy for prostate cancer.

Professor Fiona Lyng, Manager of the Radiation & Environmental Research Centre at TU Dublin, says:

“We are all different, and it makes sense that we have individual responses to treatments like radiotherapy. If we could predict who is likely to experience a severe reaction, the person’s treatment could be changed to take that into account. Then on the flip side, if we could predict that someone is likely to tolerate radiotherapy very well, their dose could possibly be escalated to further target the cancer. Our hope is that this research will help us move towards a test where patients need only to give a blood sample to find out their risk.”



PCOS – Get to know a condition with broad impact

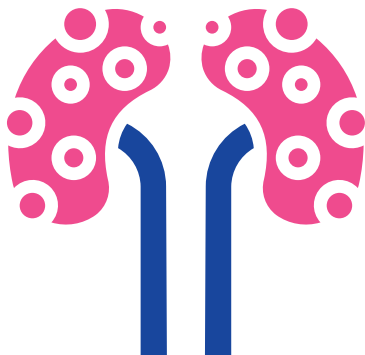
Lead Researcher: Professor Michael O’Reilly, RCSI University of Medicine and Health Sciences

The problem:

Polycystic Ovary Syndrome, or PCOS, affects around 10–15% of all women. The metabolic condition, which can be treated, can affect fertility and carries increased risks of diabetes and heart and liver disease, yet many women remain undiagnosed.

The project:

Through a HRB Knowledge Transfer Award, researchers at RCSI worked with PCOS-Vitality to develop resources to raise awareness about PCOS among women.



The outcomes:

- An online game to increase education and awareness of PCOS.
- A new website, pcosglobal.com, to help people with PCOS and clinicians, including GPs, to understand more about the condition and find resources.
- A professional video featuring Edel, a 22-year-old with PCOS, about her journey of diagnosis and treatment, with input from clinical experts and researchers.
- Within two weeks, the patient-focused video was viewed 12,900 times on Twitter (now X), and more than 4,000 times on LinkedIn.
- A visit to a Dublin secondary school, where researchers Dr Tara McDonnell and Dr Leanne Cussen focused on myth-busting around PCOS and raising awareness around menstrual health.
- An international conference using simulation-based learning to help clinicians understand more about PCOS.

Professor Michael O’Reilly, Consultant Endocrinologist at Beaumont Hospital and RCSI School of Medicine, says:

“PCOS was traditionally considered a hormonal condition that affects fertility, but we now know it is a metabolic condition that has much wider health impacts, including a three-fold risk of developing type 2 diabetes and an impact on mental health. Many women with PCOS also end up leaving the workforce early. My group at RCSI researches the effects of hormones called androgens in PCOS. The HRB’s Knowledge Transfer Award enabled us to work with the patient-support group PCOS-Vitality. Together we developed many resources to reach the general public and clinicians, to help raise awareness and to encourage women who may have PCOS to seek diagnosis and support.”



Theme 4: Evidence to inform health policies



A review of evidence for preventing dental caries

HRB Evidence Centre

The problem:

Dental caries are prevalent around the world, affecting both adults and children. The Department of Health asked the HRB to analyse the published literature about how to help protect people from developing dental caries.

The project:

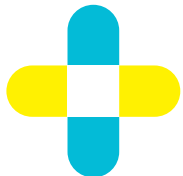
The HRB carried out an ‘umbrella’ review that examined systematic reviews of 43 types of intervention for preventing caries in primary (baby) and permanent (adult) teeth.

The outcomes:

- We now know that the strength of the evidence for interventions varies, and some interventions could not be evaluated robustly, as there was little to no systematic-review research.
- The analysis found that fluoride-based interventions were most effective, including fluoride milk, supplements, toothpaste, gels and solutions.
- The findings have been communicated to chief and principal dental surgeons, influencing clinical practice and education, particularly in the context of EU policy changes concerning mercury and dental amalgam use.
- The review informed the World Health Organisation’s essential medicines list.

Lisa Murphy, Research Officer at the HRB Evidence Centre, says:

“Our review showed that the strongest evidence we could see was around the use of fluoride, but the strength of the evidence for many interventions was variable. It highlights the need to use both scientific evidence and clinical expertise when making decisions about treatments to prevent dental caries.”



Indicators to measure the impact of Ireland's mental health policy

HRB Evidence Centre

The problem:

Ireland's national mental health policy, *Sharing the Vision: A Mental Health Policy for Everyone* was published in 2020. It is important to assess how well it is working, so the Department of Health asked the HRB to identify indicators that other countries use to measure the success of mental health policies.

The project:

The HRB Evidence Centre identified and analysed relevant outcome indicators that are used internationally to monitor and evaluate mental health outcomes stated in Ireland's national mental health policy.



The outcomes:

- The research analysed the types of mental health outcome indicators used in Australia, Canada, England, New Zealand, Scotland and the Organisation for Economic Co-Operation and Development (OECD).
- The study mapped mental health outcome indicators to 12 of the 15 outcomes stated in Ireland's national mental health policy.
- Relevant indicators include measures of social well-being, stigma, discrimination and waiting lists for mental health services.
- We have now learned from international experience that it is challenging to implement and sustain many of these indicators, and that they require resources and data-collection infrastructure.
- The HRB team published an evidence brief and presented the findings to key stakeholder groups, including the National Implementation and Monitoring Committee and a reference group with lived experience of mental health issues.

- The study's findings will inform a comprehensive outcomes framework for evaluating Ireland's mental health policy, which can be used to monitor progress and make adjustments during the policy's implementation.

Lisa Murphy, Research Officer at the HRB Evidence Centre, says:

“It's important that we understand how best to monitor and evaluate the overall impact of Ireland's national mental health policy. Our work on this evidence brief provided us with valuable insights into how we can use outcome indicators to not only assess whether the policy has achieved what it set out to achieve by 2030, but also to determine if we need to make more immediate adjustments to aspects of its implementation to ensure improved mental health outcomes for people in Ireland.”



Assisted Reproductive Technologies – informing public funding for best outcomes

HRB Evidence Centre

The problem:

To prepare for public funding for assisted human reproduction in the Republic of Ireland, the Department of Health asked the HRB to update a 2017 HRB report of international public funding Strategies for Assisted Reproductive Therapies (ART) and develop a new evidence brief.

The project:

The HRB Evidence Centre analysed updated data from 51 jurisdictions about public funding mechanisms and eligibility criteria for Assisted Reproductive Therapies.



The outcomes:

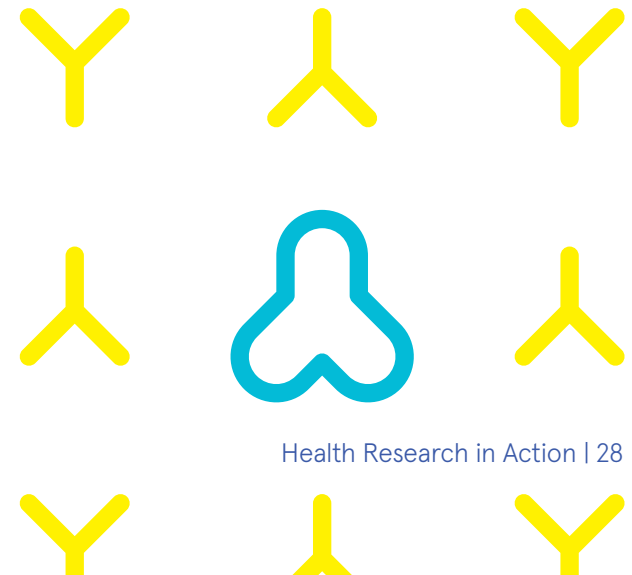
The analysis found:

- Internationally, more jurisdictions are now offering publicly-funded ART.
- Eligibility restrictions have eased in many countries: stable (unmarried) relationships are now more recognised and same-sex couples are increasingly being considered as eligible.
- Some jurisdictions emphasise single embryo transfers, particularly in the case of younger women, to reduce risks associated with multiple births.
- Eligibility needs to take into account the health and welfare of children born as a result of ART.
- The brief has influenced policy on public funding for fertility and reproductive treatments in Ireland, which came into effect in September 2023.



Dr Jean Long, Head of HRB Evidence Centre, says:

“We can see from our analysis of the Republic of Ireland and 50 other jurisdictions that human reproduction treatment is complex, and that policies need to consider a wide range of issues when setting eligibility criteria for publicly funded treatment in order to maximise the chances of successful pregnancies while also protecting parents and children. Our brief provided evidence of current and best practices from around the world to help inform policies.”



To re-use or not to re-use – studying the impacts of reprocessing single-use medical devices

HRB Evidence Centre

The problem:

Single-use medical devices, including catheters, compression sleeves, surgical implements and many more, can be 'reprocessed' for repeated use, for example through sterilising and function testing them. But in Ireland we lacked evidence about the impact of this reprocessing.

The project:

The Department of Health asked the HRB to carry out a review of studies about the cost, safety and environmental implications of reprocessing single-use medical devices.

The outcomes:

- The study was the first of its kind to systematically review the literature about how reprocessing single-use medical devices affects cost, patient safety, device function and the environment.



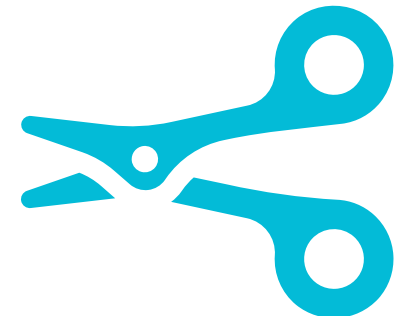
- International interest in the review was high, and the researchers have presented the findings not only to the Department of Health in Ireland, but also to several European conferences.
- The research was cited in an EU Commission report about the implementation of Article 17 of Regulation (EU) 2017/745 on medical devices on the EU market.

We now know that:

- The studies about the impact of reprocessing medical devices are varied and often lack quality, so more evidence is needed.
- Of single-use devices identified in the study, studies suggest that one reprocessing cycle of external fixator devices and implantable cardiac devices did not adversely affect patient safety outcomes.
- Reprocessing brought financial costs down, but few studies accounted for all costs.
- Depending on the device, reprocessing lowers the impact on climate change, but it may increase environmental human health impacts.

Dr Niamh McGrath, Research Officer, HRB Evidence Centre, says:

“Since May 2021, European Union member states, including Ireland, have put in place their own legal stances around single-use medical device reprocessing. This can involve cleaning and disinfecting the device and testing its function and safety. We identified 23 devices in the review and, depending on the device, there were cost and environmental savings without negatively affecting performance or outcome, but the quality of the evidence showed that more research is needed. Countries that have opted to allow reprocessing must closely monitor the safety of reprocessing using national reporting systems. Our findings highlight the need for more primary research around environmental impacts and cost savings.”





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