HRB
Health
Research
Board

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 all work completed in 2022, followed by 29 success stories about wide-ranging health and social care research across four themes.

The stories include HRB-funded projects about examining healthcare complaints in a systematic way to improve services, advancing care for critically ill patients, preventing falls and enhancing mobility in older people, and delivering specialist care to patients with Parkinson's disease. Research conducted directly by HRB staff made many important contributions to national conversations around varied aspects of health policy, especially in the area of drugs and alcohol, including the Citizens' Assembly on Drug Use.

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 valued 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 the health and social care professionals who make so much of our work possible.

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HRB by numbers

- A snapshot of work completed in 2022

The team managing our National Health Information Systems:

Serviced 103 requests for data

Published 3 peer-reviewed journal articles

Published 3 annual reports and national bulletins on drugs and mental health

The HRB Evidence Centre:

Completed 15 evidence products for the Department of Health:

4 evidence reviews
9 evidence briefs
2 evidence highlights

In terms of funding

71

awards

completed in 2022, worth a total of

€27,874,393

This research resulted in:

49	new methods or materials (e.g. assays, databases, training materials)
27	healthcare innovations (e.g. medical devices, therapies or interventions)
123	influences on policy or practice (e.g. new clinical guidelines, policy reports)
242	engagements with public bodies and media
72	instances of public, patient and carer involvement (PPI) in research

Supported 240 research jobs

51	healthcare professionals
106	biomedical scientists
16	statisticians and bioinformatic scientists
14	social scientists
5	other scientists
33	other

Significant academic outputs

15	PhDs completed or in progress
483	Peer-reviewed publications
44	Non peer-reviewed publications
619	Presentations at scientific conferences
30	Academic collaborations with national colleagues
108	Academic collaborations with international colleagues

The economic impact

Leveraged €93,939,072 total funding on foot of these awards Started

28 industry collaborations Filed

one patent

Theme 1:

Strong research for health and social care

Evidence to improve diabetes care in Ireland

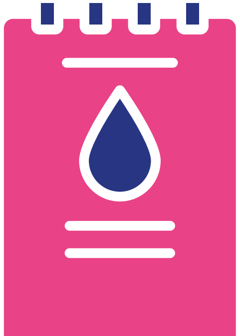
Lead researcher: Professor Patricia Kearney, University College Cork (UCC)

The problem

Diabetes is a common and debilitating chronic condition that costs the Irish healthcare system hundreds of millions of euros each year. A decade ago, there were few supports for diabetes in the community and we needed more information about trends in the Irish population.

The project

A HRB Research Leader Award meant that Professor Patricia Kearney could develop a body of research with the National Clinical Programme for Diabetes to gather and apply current data about diabetes in Ireland.

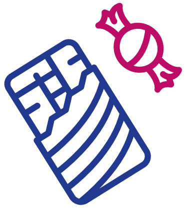


The outcomes

- We now know that 8% of the Irish population aged over 50 years has diabetes (although many people are not diagnosed) and that numbers are set to rise in our ageing population, so it is important that we enable Ireland to plan prevention and health supports accordingly.
- An evaluation of the National Clinical Programme for Diabetes, which is now informing diabetes-related services in Ireland, including nursing, podiatry, eye screening, stroke treatment and management of chronic kidney disease.
- The researchers worked with general practitioners (GPs) to identify ways to increase the enrolment of patients on Diabetic RetinaScreen, a screening programme for eye damage that can occur in diabetes.
- The Health Implementation Research Hub and Irish Implementation Science Training Institute are now active at UCC to translate evidence into action in healthcare for chronic diseases, including diabetes.

Professor Patricia Kearney, Professor of Epidemiology at the School of Public Health, UCC, says:

> “Diabetes is one of the largest health burdens in Ireland, and we know now that it affects almost one in 10 people in the entire population, damaging their organs and body systems over time. During the course of eight years on this project, we captured and analysed data about diabetes in Ireland that has directly informed and improved many of the services for people with diabetes that we are now seeing in the community. From that foundation, we are continuing to find solid evidence and move it into practice so that evidence improves care and strengthens our approaches to prevention, with the aim of reducing the negative impacts on people and the financial impact on the Irish economy.”



Complaints in healthcare – a useful source of information for change

Lead researcher: Professor Paul O'Connor, University of Galway

The problem:

Each year more than 12,000 healthcare complaints are recorded in Ireland, but there is no process to analyse this body of information at a system level and use the findings to improve healthcare.

The project:

A team led by University of Galway used the Healthcare Complaints Analysis Tool (HCAT) to examine more than 600 healthcare complaints made in Ireland, and worked with researchers, healthcare workers, Health Service Executive (HSE) managers and patients to identify solutions.

HCAT – What is it?

HCAT is a method to analyse complaints in a systematic way. The free, online tool was developed at the London School of Economics, and it allows users to organise, analyse and present insights from issues raised by patients.

The outcomes:

- This was the first national and systematic study of healthcare complaints in Ireland, and it showed the HCAT is a useful tool for categorising and prioritising complaints.
- The analysis showed that complaints about healthcare institutions and their processes were the most common.
- The study identified 'hotspots', where harm is more likely, during the patient journey through examination, care and treatment.
- The research found 'blind spots', often at transitions such as admission and discharge, where healthcare staff may not notice problems.
- Workshops with patients and healthcare staff that explored specific complaints were a useful way of generating awareness and solutions.

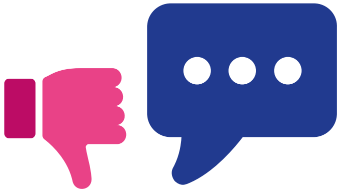
HCAT has now been adapted by the team for use in primary care settings.

Professor Paul O'Connor, a Personal Professor in the Discipline of General Practice, University of Galway, says:

> "Complaints are a rich source of information about the problems that patients experience in healthcare, but there is no process for hospitals or the healthcare service in Ireland to use that information systemically to make broad improvements to healthcare delivery. This limits the ability of patients to contribute to identifying problems and potential solutions. We were able to show that the Healthcare Complaints Analysis Tool offers a standardised way to categorise and constructively use the information from complaints made by patients."

Chris Rutland, Assistant National Director, National Complaints Governance and Learning, says:

> "The data from this study can transform how the HSE analyses and learns from patient complaints."



Identifying healthcare barriers and needs among older migrants

Lead researcher: Dr Purity Mwendwa, University College Dublin (UCD)

The problem:

As global migration continues to grow, the number of older migrants will continue to increase. Older migrants face unique healthcare needs, yet they may find it difficult to access that care.

The project:

With support from the School of Public Health and Human Longevity Science, University of California San Diego, the Somali Family Service of San Diego and a Fulbright HRB Health Impact Award, the research carried out semi-structured interviews with 11 older African immigrants (aged between 65 and 90 years) in San Diego, United States of America (USA). Five of the interviewees had early signs of dementia, including memory problems.

The outcomes:

- The study found that older African adults encountered barriers to accessing healthcare, including language, transportation to services, interpretation and awareness of services.
- Community-based organisations (such as Somali Family Service of San Diego) could help to overcome barriers by providing emotional, instrumental and informational support.
- The research highlighted that immigration laws and legal status had a particular influence on the ability of older immigrant adults to access health and social care.

Dr Purity Mwendwa, who carried out the research while a Post-doctoral Research Fellow at the UCD School of Nursing, Midwifery and Health Systems, says:

> “Few studies have examined the healthcare needs of older migrants from the continent of Africa living in San Diego. This knowledge gap and similar knowledge gaps about older migrants in Ireland and around the world limit the ability to inform and help shape policy and practice as it relates to migration, health, ageing and cultural diversity. By working with older migrants and with community support organisations, we can identify the barriers that older migrants face in accessing health and social care and use that evidence to make it easier for them to get the care they need.”

Specialist nurses – HRB study leads to a ‘big win’ for Parkinson’s disease care

Lead researcher: Professor Suzanne Timmons, University College Cork (UCC)

The problem:

Worldwide, the number of people with Parkinson’s disease (PD) is expected to almost double by 2040, but we knew little about the numbers or health service needs of people in Ireland who are living with the disease, making it hard to provide appropriate support and plan for the future.

The project:

Researchers at UCC surveyed or interviewed more than 1,400 people living in Ireland with PD, as well as clinicians and policy-makers.

The outcomes:

- The study found that 20% of respondents with PD waited more than a year to get a diagnosis and 22% were dissatisfied with the way they received their diagnosis.
- Surveys showed that 43% of respondents with PD saw a consultant physician just once a year or less, and people living in rural areas found it harder to access support.
- Two policy briefs, written with the Neurological Alliance of Ireland (NAI), highlighted the need for more nurse specialists and better access to multidisciplinary care (physiotherapy, occupational therapy, etc.)
- The findings helped to secure resources for six new PD nurse specialists in Ireland.
- Project data informed a presentation by NAI to the Oireachtas on neurorehabilitation in Ireland.

Dr Emma O’Shea, a Post-doctoral Researcher at the Centre for Gerontology and Rehabilitation, UCC, says:

“It was eye-opening to learn about how people with Parkinson’s disease in Ireland have been living without many of the supports they need from the health system, especially nurse specialists. As an example, patients indicated that they would feel more comfortable talking to a specialist nurse rather than a doctor about psychosocial issues such as body image, social anxiety and feeling self-conscious in public.

We are delighted that the project has helped to put nurse specialists in place. It is a big win for people living with the condition, and it is a step towards meeting their health service needs more fully.”

Professor Suzanne Timmons, Professor in Geriatric Medicine, UCC, says:

“As a movement disorder specialist, I knew we needed research into how to meet the health service needs of people with Parkinson’s disease in Ireland and their families. The key factor to this project making an impact was the close collaboration of clinicians and researchers with grassroots organisations.

That our project was able to provide a baseline for future service planning in this area, and particularly that it helped to lead to more specialist nurses being resourced for people living with Parkinson’s disease, is a testament to the collaborative nature of the work.”

Simple tools for clear communication about medicines in telehealth

Lead researcher: Dr Michelle Flood, RCSI University of Medicine and Health Sciences

The problem:

In telehealth, or remote medicine, it can be hard for doctors, pharmacists and patients to communicate clearly about medications, leading to a higher risk of patients not taking medicines appropriately.

The project:

The CONNECTS project led by the Royal College of Surgeons in Ireland (RCSI) surveyed or interviewed 10 patients, 40 GPs and more than 200 pharmacists about telehealth and medicines during COVID-19 lockdown. Researchers then worked with designers at the National College of Art and Design and Technical University Dublin (TUD) to develop tools to increase the safety of prescriptions where face-to-face conversations are not possible.

The outcomes:

- Pharmacists and GPs reported feeling greater concern around the safety of medicines being prescribed when they could not talk to patients in person.
- The project developed and tested prototypes of new tools to support clear communication, including:
  - Structured lists of questions for phone consultations.
  - Large template-based stickers on bags of prescribed medicines, clearly outlining dosage or brand changes or asking the patient to contact the pharmacy.

The researchers shared their findings in published papers and in presentations to the clinical leads for medicines safety in the HSE.

Dr Michelle Flood, a Senior Lecturer at RCSI School of Pharmacy and Biomolecular Sciences and RCSI PPI Ignite Network Lead, says:

> “Telehealth has many advantages, as we have seen in the COVID-19 pandemic, but we learned from our research that it makes communication about medicines safety more challenging. Working with patients, doctors, pharmacists and designers, we were able to come up with some simple but effective solutions to make the remote communication clearer. And as telehealth is now continuing to develop as part of typical practice, we hope that these tools will prove useful into the future.”

Evidence Synthesis Ireland – building a stronger foundation for evidence in health

Lead researchers: Professor Declan Devane, Dr Nikita Burke, University of Galway

The problem:

We need high-quality evidence in healthcare. Single studies that are poorly designed often lack the depth or quality needed to make reliable healthcare decisions, so we need to look at a broader range of research to get a more complete and trustworthy understanding of the evidence.

The project:

Evidence Synthesis Ireland (ESI) provides training for people in healthcare and policy on how to gather information from different studies, check the quality of that information, understand its meaning, and share those insights clearly.

The outcomes:

- Delivered more than 110 training events on evidence synthesis, including more than 50 webinars, engaging in excess of 11,000 people.
- Produced a series of online videos aimed at the general public that break down the key steps in a systematic review.
- Cochrane Ireland was re-established, to promote the use of Cochrane evidence across the island of Ireland.
- 79 ESI Fellows were trained and placed in Ireland and internationally.
- Six researchers developed their communication skills through the ESI Communicating with the Public Mentorship Programme.
- ESI led a series of Cochrane COVID-19 rapid reviews, including Cochrane's first rapid scoping review, commissioned by the World Health Organization.
- During the COVID-19 pandemic, ESI provided evidence to the Department of Health's Rapid Testing Expert Advisory Group.

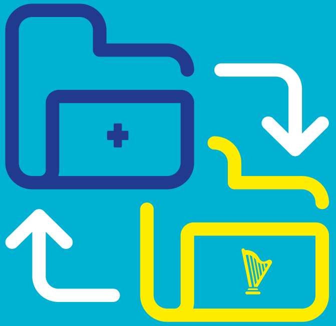
Dr Nikita Burke, Programme Manager, Evidence Synthesis Ireland and Associate Director of Cochrane Ireland, University of Galway, says:

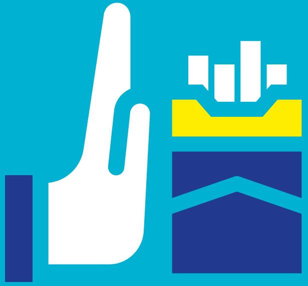
> "In order to have the best evidence for making decisions around healthcare policy and clinical practice, we need to have studies that are not only well planned but also combined with other research. This gives us a fuller, more reliable picture of what works and what does not. Through ESI, we have been able to engage thousands of people, build networks and deliver more focused training that makes people more aware of how to design and interpret studies and reviews of studies.

What is a systematic review?

In healthcare, many different studies ask similar questions. Does this new intervention work better than the one we already have? Does eating a particular type of food help people live longer and healthier lives? It can be difficult to get reliable evidence from just one study, so a systematic review carefully finds, brings together and interprets the evidence from a range of studies asking similar questions and pools the data where possible to obtain a more reliable answer.

Theme 2: Supporting people on their health journey





Care to Move – home carers prompting movement in older people at home

Lead researcher: Professor Frances Horgan, RCSI University of Medicine and Health Sciences

The problem:

As people age, they want to live at home, but falls and increasing frailty can make this more difficult to do. Being more active through moving more can help to prevent falls and address frailty, but people may not have the routine or confidence to move enough in the home.

The project:

Researchers at RCSI and the HSE in collaboration with a not-for-profit home care agency (North Dublin Home Care) tested the feasibility in Ireland of the *Care to Move* (CTM) programme developed by Later Life Training UK, which trains home care staff to use consistent prompts to build frequent movement into older people's lives at home.

The outcomes:

- We now know that embedding the *Care to Move* programme in home settings in Ireland is feasible.
- More than 70 home care staff were trained to deliver movement prompts to older people living at home and 35 home care clients participated in the study for up to six months.
- The implementation cost was estimated at €280 per carer and annual running costs at €75 per carer.
- Home care clients in the feasibility study – average age in their early 80s – saw improvements in their quality of life, physical function, balance confidence and self-efficacy, and home care managers were supportive of the roll-out of CTM.
- Webinars and follow-ups with healthcare professionals about the programme reached more than 200 people.
- The study can inform a larger trial of *Care to Move* in the Irish home care setting.

Dr Austin Warters, Manager of Services for Older People, HSE, says:

> “Thanks to the findings of this study we now know more about the practicalities and potential benefits of implementing the Care to Move programme in Ireland.”

Professor Frances Horgan, Professor of Physiotherapy, RCSI, says:

> “Home care staff play a vital role in the ongoing health of older people living in their homes. Through the study, we showed that home care staff and physiotherapists could work with individual clients in Ireland on the movement prompts that would encourage them to move more frequently in their homes.”

Vanda Cummins, Senior Physiotherapist, HSE, says:

> “People could really see the value of meaningful conversations and movement prompts at each visit – whether to build their confidence going up and down stairs, to stand up more easily from a chair, or to get out to greet their grandkids at the school gate.”

Identifying future needs for preventing falls

Lead Researcher: Dr Sheena McHugh, University College Cork (UCC)

The problem:

When people get older, a fall can be a threat to their ability to live independently. The first Integrated Falls Prevention Pathway in Ireland was set up in Cork and Kerry to assess people and follow up with interventions to prevent falls, however it was a difficult pathway for patients to navigate.

The project:

The Cork Falls Prevention study worked with healthcare professionals and patients to map out the process for patients to be referred for assessment, and then get support through community healthcare to reduce their risk of falls.

The outcomes:

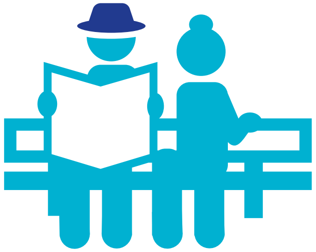
- In focus groups, healthcare professionals mapped out the processes for patients moving through the integrated care pathway.
- The study found that a lack of resources and IT infrastructure to share patient data hampered the ability of patients to move efficiently through the system and get the appropriate support.
- A lack of available data meant it was difficult to follow up with patients who went on to receive interventions to reduce their falls risk.
- Healthcare professionals and older people felt the integrated pathway was needed, given the health and financial costs of falls.
- The findings can now inform the development and scaling up of integrated falls prevention pathways in Ireland.

Dr Sheena McHugh, a Senior Lecturer at UCC School of Public Health, says:

> “Something that really shone through in this study was how engaged and enthusiastic the healthcare professionals were about the appetite for an integrated falls prevention pathway that can help at-risk people maintain their health into older age. What we found in the study points to the need for more resources and integration of patient data across the services.”

What is an integrated falls prevention pathway?

Falls are simple, however preventing them can be complex. In an integrated falls prevention pathway, a patient who has been identified as having a potential risk of a fall is assessed, and based on that they are referred to the appropriate specialist, such as a physiotherapist or a public health nurse. Ideally this identification, support and any interventions all happen in the community and the patient can easily access them in good time.



PA-EPI: A tool to guide national policies that promote physical activity

Lead researcher: Professor Catherine Woods, University of Limerick (UL)

The problem:

Policies can encourage physical activities, which support good health and well-being. However, it is difficult to assess what types of policies are in place across Europe, and how well they are implemented to support physical activity.

The project:

Ireland took part in a major pan-European project, the Policy Evaluation Network, to audit policies that promote physical activity, focusing on those in areas of education, transport, urban design, healthcare, sport, platforms for communication, communities and workplace.

The outcomes:

- Researchers in Ireland played a key role in building the first Physical Activity Environment Policy Index (PA-EPI), a tool to assess how much progress governments have made in improving environments and implementing policies that support physical activity.
- The tool has 45 good practice statements that facilitate policy benchmarking.
- The research produced the first audit in Ireland of policies relating to physical activity across multiple sectors.
- The PA-EPI tool can now be used to evaluate policies to support physical activity worldwide.
- PA-EPI is about to be developed in six other EU countries.

Professor Catherine Woods, Chair of Physical Activity for Health at UL's Department of Physical Education and Sport Sciences, says:

> "Ireland provided a test bed for our European consortium to develop a new way of assessing how and if policies were being used to promote physical activity in practice. The tool, PA-EPI, enabled us to identify gaps in Ireland's policies and their implementation, including practical steps such as schools sharing resources with communities to promote physical activity during summers, and national policies to support safe active transport."

Encouraging women in disadvantaged areas to give up cigarettes through *We Can Quit*

Lead researcher: Professor Catherine Hayes, Trinity College Dublin (TCD)

The problem:

Women living in socio-economically deprived areas are more likely to smoke, with negative impacts on their health.

The project:

Researchers tested the feasibility of running a trial of *We Can Quit* (WCQ), a new programme to help women living in disadvantaged areas to stop smoking, running it in pairs of neighbouring districts – two pairs in Dublin and two in Cork – in parallel with the standard HSE quit smoking programme.

The outcomes:

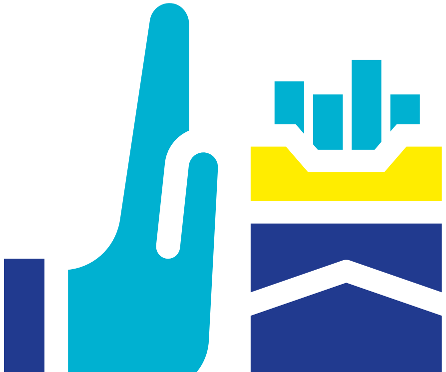
- Women were recruited to the study through Local Area Partnerships, the HSE, Irish Cancer Society representatives, community development organisations, pharmacies and GPs.
- 65 participants were offered *We Can Quit* group sessions, and 60 women were offered the standard HSE programme to stop smoking.
- The research identified ways to improve We Can Quit in practice, including addressing literacy among participants and more contact when the 12-week programme had finished.
- A policy brief outlining the project and its findings is publicly available online.
- *We Can Quit* is now being rolled out by the HSE in partnership with local community organisations.
- Community Facilitators who worked on the research project are employed to deliver the programme through the HSE.

Professor Catherine Hayes, Professor in Public Health, School of Medicine, TCD, says:

> “We wanted to see if getting women to take part in a trial of the *We Can Quit* programme would be feasible in disadvantaged areas in Ireland. We found that yes, it can be done, and along the way we saw that some of the women stopped smoking, even if only for a few months. Many of the women who took part had been smoking for more than 25 years, so any reduction in their smoking was a big achievement and positive for their health.”

We Can Quit – Help to stop smoking

We Can Quit is a community-based support programme to help women living in disadvantaged areas give up smoking. The 12-week programme offers weekly group meetings with trained local Community Facilitators. People who take part can also avail of free nicotine replacement therapy. We Can Quit was developed by the Irish Cancer Society, the National Women’s Council of Ireland, the Institute of Public Health, and the HSE.



Support to the end – guiding acute hospitals to widen palliative care culture and skills

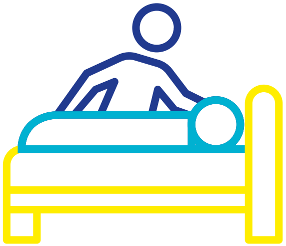
Lead researcher: Dr Mary Nevin, Dublin City University (DCU)

The problem:

Currently, as many as 40% of people spend their final days in hospital and require a palliative approach, but these needs are often not met. It can be a challenge for hospitals to train non-specialists to integrate palliative care and skills into their work.

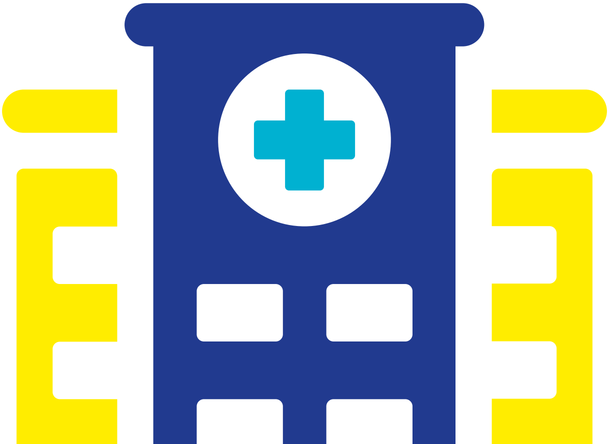
The project:

Research at Trinity College Dublin and DCU analysed the language, policy, and current evidence around the integration of a palliative approach in acute hospitals, and obtained the views of more than 90 international stakeholders.



The outcomes:

- Produced a new set of 32 core clinical care indicators to support the integration of a palliative approach in acute hospitals.
- Created a new postgraduate module at DCU that focuses on palliative care skills and awareness.
- The research findings were presented to palliative care and healthcare organisations in Ireland, Europe and Canada.
- Follow-on projects are focusing on integrating a palliative care approach for people with profound intellectual disabilities, people with cancer, and those with chronic illness in Ireland.



Dr Mary Nevin, an Assistant Professor of Nursing and lecturer at DCU School of Nursing, Psychotherapy and Community Health, says:

> “Hospital can be an excellent place to die, but that requires meeting people’s palliative and end-of-life care needs such as privacy, sensitive communication and appropriate management of symptoms. As a nurse, I could see that, outside of the specialist palliative care team, acute hospital structures and clinical training in Ireland were not well prepared for catering for such needs.
>
> Our project did a deep dive into the current situation and we developed tangible indicators that can guide acute hospitals to integrate palliative care skills and awareness across governance and clinical and individual levels. This will help to change the culture and mindset around palliative and end-of-life care in hospitals, and support people to die well when the time comes.”

An agile network to improve care for critically ill patients and save lives

Lead researcher: Professor Alistair Nichol, University College Dublin (UCD)

The problem:

Many aspects of critical care remain uncertain. Improving this care would make a big difference to critically ill patients in intensive care. National and international efforts and infrastructures are required in order to carry out such studies with sufficient numbers of patients to evaluate new treatments.

The project:

The HRB provided support for an Irish hub, the Irish Critical-Care Clinical Trials Network (ICC-CTN) – a group of clinicians, nurses and scientists working to improve patient care – to enable them to carry out studies in intensive care, often as part of large international studies.

The outcomes:

- A clinical research hub was established at UCD to coordinate national and international clinical trials in intensive care and critical care medicine.
- Irish patients have been able to take part in major international clinical trials and studies with Irish leadership, including:
  - Studies on lung ventilation that are now informing larger international studies on how best to care for lungs in acute respiratory distress syndrome (ARDS), a complication of pneumonia.
  - The TRANSFUSE study, which showed that shelf life can safely be extended for blood products. This discovery is now relieving pressure on blood supplies for transfusions around the world.
  - The PEPTIC study, which found that patients in intensive care do better when they receive one type of stomach acid-lowering medication compared to another.
  - Trials of several treatments for COVID-19 identified treatments that are beneficial, ineffective or harmful for patients.
  - The results of these and other studies involving the Irish Critical Care-Clinical Trials Network have saved hundreds of thousands of lives.

Professor Alistair Nichol, Chair of Critical Care Medicine, UCD and the Director of the Irish Critical Care-Clinical Trials Network, says:

> "What the HRB funding enabled was our ability to ask and answer questions that make a difference to patients in critical and intensive care. Because we were able to build the practical support of the research hub and the connections with experts in Ireland and around the world, thousands of patients in Ireland took part in studies that resulted not only in improved care to them but lasting impact for patients around the world."

Linking death and health data to understand costs and inequalities in how we die

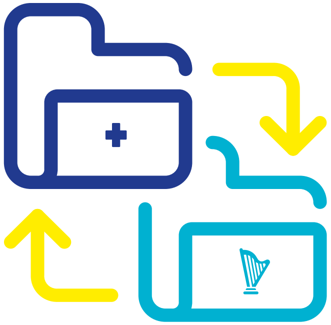
Lead researcher: Dr Mark Ward, Trinity College Dublin

The problem:

Globally, we know that factors such as your socio-economic status can impact on your health and risk of death as you age. But it has been difficult to link relevant data in Ireland together to understand why and how this happens.

The project:

Researchers at TILDA (The Irish LongituDinal Study on Ageing) linked data from their database with death certificate data for almost 1,500 individuals who had died during the study, enabling them to explore aspects of a person's life in older age and the cause of death.



The outcomes:

- Ireland now has a process and infrastructure to link data in death certificates to health-related databases.
- Linking information from death certificates with survey and other health-related data in TILDA has shown that:
  - Individuals on the lower end of the socio-economic spectrum tend to have poorer health in older age and to have an increased risk of death from cardiovascular disease.
  - Healthcare costs tend to rise steeply in the last year of life.
  - Around three-quarters of people in the last year of life are prescribed medicines inappropriately.
- The data linkage processes are now available for other researchers to use in Ireland.

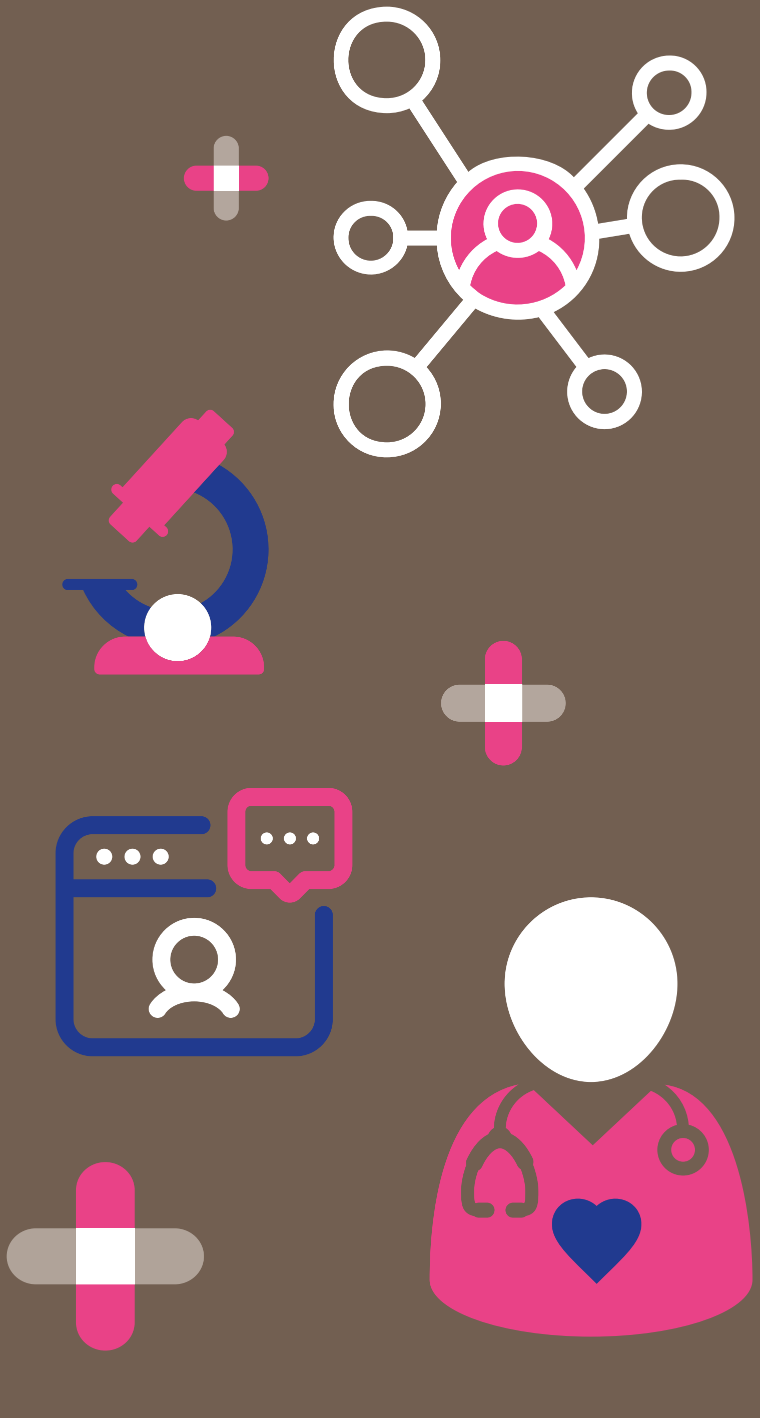
Dr Mark Ward, Senior Research Fellow with TILDA, says:

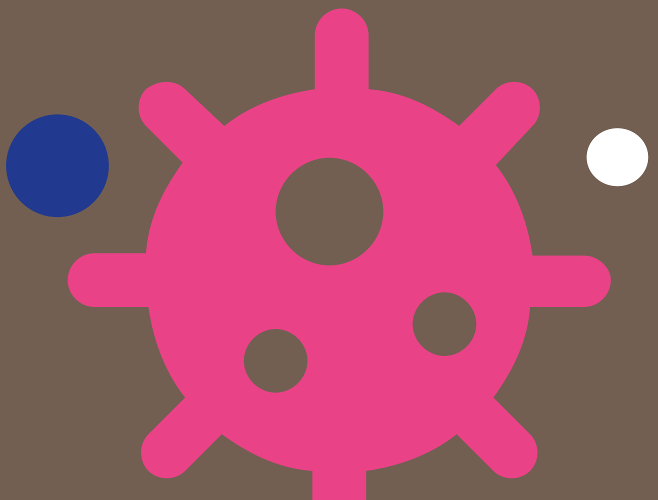
> "A really important impact of this study is that the data infrastructure is in place now in Ireland to link data from individual death certificates to other databases. This means we can get a better picture of the factors that impact health outcomes and pathways to death. Having this kind of analysis provides important evidence for policies, and now other researchers are able to use the data infrastructure to analyse their data too."

Professor Rose Anne Kenny, Principal Investigator at TILDA, says:

> "In order to do something about inequalities in health outcomes you have to know why they are occurring, and through this TILDA study we have been able to pinpoint the pathways that explain why people in certain social groups die earlier. This highlights where we can direct resources and design interventions to alleviate those differences, and thereby protect more people's health into and through older age."

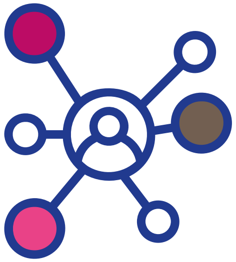
Theme 3: Spotlight on COVID-19 research





Research formed an important part of Ireland's response to the COVID-19 pandemic, and the HRB supported researchers to pivot their expertise to the endeavour. These summaries offer a snapshot of some of those projects.

Contact tracer burnout



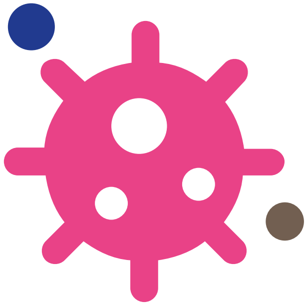
Surveys of 137 contact tracers in March 2021, and 218 tracers in September 2021 showed that they experienced an increase in burnout-related exhaustion, mental distress and feelings of tension and pressure.

Contact tracers with a background in healthcare were more likely to have symptoms of post-traumatic stress disorder (PTSD). The findings can inform future training and psychological support of contact tracers.

Lead researcher: Dr Aoife De Brún, University College Dublin Centre for Research, Education and Innovation in Health Systems

Back-calculation to 'see' the invisible cases

Many of those who had COVID-19 did not experience symptoms, making it hard to know how many people were infected with the virus during 'waves' of the pandemic. Researchers used a 'back-calculation' statistical model to examine the first and second waves in 2020 and showed that the reported cases were only half of the story – that for every known case there was an additional unknown case.



This means a truer estimate for wave 2 was 95,000 cases rather than the reported 48,390 cases. The project showed that this type of statistical analysis helps us to better understand the prevalence of an infectious disease and can inform decisions about appropriate measures to protect people.

Lead researcher: Professor Catherine Comiskey, School of Nursing & Midwifery, Trinity College Dublin

ICC-CTN – saving lives by focusing fast on COVID-19 research

When the COVID-19 pandemic hit, the race was on to work out what treatments worked best for people who became seriously ill with the virus. The HRB had invested in the Irish Critical Care – Clinical Trials Network (ICC-CTN), and then provided supplementary funding to support clinical trials relating to COVID-19. These included REMAP-CAP, (Randomised, Embedded, Multifactorial, Adaptive Platform trial – Community Acquired Pneumonia) a coordinated international trial that recommended 16 COVID-19 treatments, including the use of steroids and immune modulation.

The research also identified genetic factors that had an impact on COVID-19 critical illness and described the impact of COVID-19 infection in Ireland. In total, these studies in collaboration with their international partners involved 900,000 patients worldwide, and more than 3,000 patients in Ireland took part in this life-saving research.

Lead researcher: Professor Alistair Nichol, UCD School of Medicine, University College Dublin and Director of the Irish Critical Care Clinical Trial Network

Factors linked to impact of COVID-19 on a population in North Dublin

What makes a difference to a patient's outcome when they have COVID-19? The North Dublin COVID-19 Cohort Study took a deep dive into what happened to hundreds of patients who were infected with the virus and who attended the Mater Misericordiae University Hospital (MMUH) in Dublin's north inner city, an area where certain socially deprived communities were at high risk of infection and of experiencing adverse outcomes.

Their findings, reported in more than 20 peer-reviewed publications to date, linked initial factors such as resting heart rate, blood test results and experience of nausea and vomiting to poorer or better outcomes for patients and their development of long COVID and quality of life in the following months.

Lead researcher: Professor Jack Lambert, Mater Misericordiae University Hospital

Lessons from young people coping during the COVID-19 pandemic

School happened differently during the COVID-19 pandemic. Remote teaching and learning was hard for many, and students who were already marginalised were potentially at even greater risk of disengaging from education. The Crisis Coping project worked with hundreds of young people (aged 12–18 years), their parents and teachers, and identified issues and potential supports to safeguard the well-being of students and teachers during and beyond the COVID-19 pandemic. This included offering more varied ways of engaging with teaching and learning, teachers regularly checking in with students, and providing more resources for mental health supports. The resulting policy papers can inform a more supportive education system in Ireland into the future.

Lead researcher: Professor Pat Dolan, UNESCO Child and Family Research Centre, University of Galway

Better guidelines during the COVID-19 pandemic for people on immune-suppressing medicines

One of the ways that the SARS-CoV2 virus damages the body is by triggering an overactive immune response. During the early months of the COVID-19 pandemic, we did not know whether patients who were taking medication to suppress the immune system may have been protected from that harm of the virus, or later on whether the medication would affect vaccination for those patients.

The DeCOmPRESS study examined blood samples from patients with the autoimmune condition systemic vasculitis. The results showed that background steroid therapy was associated with a worse outcome, but other immunosuppressive medications did not have a major effect. These outcomes informed the UK and Ireland Vasculitis (UKIVAS) society and UK Kidney Association guidelines for immunosuppressed patients in this early phase of the pandemic.

The study also found that the immunosuppressant rituximab had a very strong effect on inhibiting the SARS-CoV-2 antibody response to COVID-19 vaccines, but the specific cellular response remained intact. These results fed into the guideline advising COVID-19 vaccination at least four weeks before planned rituximab doses.

Lead researcher: Professor Mark Little, Trinity College Dublin and Tallaght University Hospital and Beaumont Hospital

Learning about resilience from children in the COVID-19 pandemic

Children faced many challenges during COVID-19 lockdowns, such as isolation, prolonged confinement and an environment of uncertainty for them and their families.

Through creative workshops and surveys, the COVISION project provided a platform for the resilience and creativity of children and young people during the COVID-19 pandemic, including 110 young people (aged 10–18 years) across Ireland, Mexico, Taiwan, the USA, and Australia.

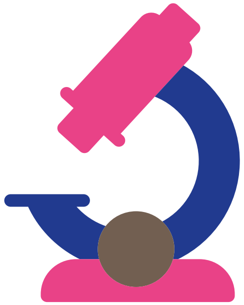
As part of the project, these young people presented innovative proposals to political leaders. By enabling ideas to reach influential decision-makers, COVISION has created an approach for inclusive interventions during challenging times.

Lead researcher: Associate Professor Suja Somanadhan, UCD School of Nursing, Midwifery and Health Systems

How can we track muscle wasting in patients in ICU?

One of the issues for patients who spend time in intensive care unit (ICU) care – including patients with severe COVID-19 or sepsis – is that their muscles waste, and this can contribute to frailty and other issues in their recovery.

If we can predict who is at risk of muscle wasting as a result of ICU care, then prioritising their muscle health could be of particular benefit for them. This research looked at the potential of a type of molecule in the body called microRNA to act as an early marker of muscle wasting and long-term frailty after the patient has spent time in an ICU.



It found that some specific types of microRNA in the blood have potential for screening and monitoring muscle wasting in patients and potentially could enable early identification of those at risk of long-term frailty. The findings point the way for future research, which will include studying microRNA in a larger group of patients.

Lead researcher: Dr Katarzyna Whysall, College of Medicine, Nursing and Health Sciences, University of Galway

Interns kept their empathy during the COVID-19 crisis

Interns who graduated from medical school and began their first clinical practice during the COVID-19 pandemic faced unprecedented uncertainty.

A research study invited interns registered to practise medicine in Ireland between July 2020 and June 2021 to take part in an online survey and semi-structured interviews about psychological needs, burnout and empathy.

The results found that interns tended to meet the challenges of clinical practice in the pandemic head on, and that they retained empathy through the crisis. Factors that helped protect them against burnout included support from society, team cohesiveness and sharing, and the re-establishment of peer-supported induction. The findings provide an important baseline for future study and support of this cohort of junior doctors.

Lead researcher: Professor Martina Hennessy, School of Medicine, Trinity College Dublin

Theme 4: Evidence for effective health policies

No conclusive links between fluoride in community water and negative effects on key areas of health

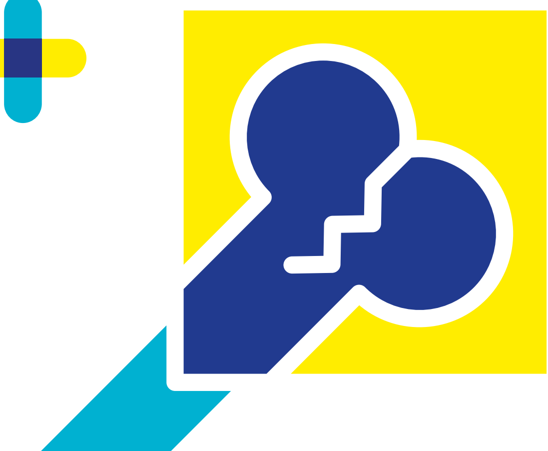
HRB Evidence Centre

The problem:

Since 1964, Ireland has added fluoride to community water supplies to improve dental health. Part of the ongoing public health commitment is to keep up with the international evidence about fluoride in community water supplies and health more generally.

The project:

The Department of Health asked the HRB to carry out a review of published studies on connections between fluoride and health beyond the impact on teeth.



The outcomes:

- The HRB Evidence Centre analysed 30 studies from nine countries, including Ireland, carried out between 1990 and 2021.
- The analysis found no conclusive evidence of links between fluoride being added to community water and bone health, cancer, kidney stones, infant abnormalities, and death rates.
- The evidence pointed to the need to focus on neuropsychology (such as ability to learn) and endocrine (hormone-related) conditions in future reviews, as further high-quality studies are needed.
- The report was published and made publicly available online.

Dr Kathryn Lambe, Research Officer at the HRB Evidence Centre, says:

> “Fluoride has been added to community water schemes in Ireland for many decades. In our latest review of the evidence up to 2021, we can see that many of the studies are not of high quality, but overall the findings do not show any conclusive links between fluoride in the water and health issues. Globally, however, the quality of studies needs to improve, so that we know we are working from a solid evidence base.”

Recruiting and retaining home care workers – what can Ireland learn from other European countries?

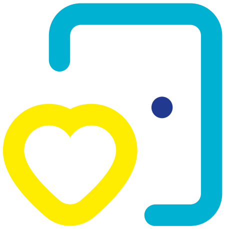
HRB Evidence Centre

The problem:

Countries across Europe, including Ireland, are facing recruitment and retention issues among workers in the home care sector.

The project:

The Department of Health asked the HRB to examine the role, recruitment and retention of care workers providing home care services in Germany, Sweden, Scotland and the Netherlands.



The outcomes:

- We now know that in these four European countries challenges in the recruitment of care workers to the home care sector are not simply down to increased demand.
- The study found that unstandardised approaches to training, poor employment and working conditions and lack of career opportunities are barriers to care workers staying in the home care sector.
- The evidence indicates that Ireland can ease the crisis by providing good working conditions, education and training, regulation, registration, indemnity and mentoring, continued learning and development, and well-defined career pathways for home carers.
- The study's publicly available evidence brief can now inform the Department of Health as it develops a statutory scheme for financing and regulating home support services in Ireland, as outlined in the Programme for Government (published in 2020).

Dr Lisa Murphy, HRB Research Officer, says:

> “Many European countries face a crisis in the home care sector, where not enough care workers go into or remain in the sector. What we found by looking at various sources of information relating to home care workers in Scotland, Germany, the Netherlands and Sweden were some common themes, including the need to create more stable working conditions and career opportunities for home care workers. Ireland can now learn from the findings, and resource and promote the culture of the sector in a way that makes it more attractive for home care workers.”

Young people in Ireland – what’s the story with alcohol and other drugs?

HRB Evidence Centre

The problem:

When adolescents and young adults use alcohol and other drugs, it can lead to health and societal problems. In order to put protective laws and policies in place and to find out whether they are working, we need to be informed about trends and patterns in alcohol and other drug use in this age cohort in Ireland.

The project:

Following a request from the Department of Health, this project drew on data relating to alcohol and other drug use by young people in Ireland from the late 1990s to 2020. Data sources included health information systems including hospital records, treatment and deaths and supplemented with publications using the HRB National Drugs Library.

The outcomes:

Figures show that:

- Young people in Ireland are starting to drink at a later age, but problem drinking remains an issue for 15–24 year-olds, with one in three having an alcohol use disorder.
- More than one-quarter of young people reported using illegal drugs in their lifetime, most commonly cannabis, but ecstasy, cocaine and LSD use are increasing and two in five third-level students who were current drug users reported using two or more substances on the same occasion.
- Young adults with alcohol dependence are more likely to have severe anxiety. Cannabis users are six times more likely to report mental ill health than those who do not use cannabis.
- The report’s findings were widely discussed in the media, and the HRB presented the findings to the Citizens’ Assembly on Drug Use.

Anne Doyle, HRB Research Officer, says:

> “This was a big study that drew on many sources of information about trends in young people’s alcohol and other drug use in Ireland over more than 20 years, including information about what influences behaviour as well as the impact of drug and alcohol use. It is important that we have this evidence, not only to develop policies and laws to protect against harm but also so that we can learn over time if those steps are working. It was particularly rewarding to be able to talk about the findings on television and other media, and to present to the Citizens’ Assembly on Drug Use, and get those different conversations going.”

How can service users share in decision-making about drug treatment, recovery and harm reduction?

HRB National Drugs Library

The problem:

Policy in Ireland aims to involve service users in the design and delivery of services relating to drug treatment, recovery and the reduction of harm. But there are obstacles to reaching that goal.

The project:

The HRB National Drugs Library commissioned a review of international literature and practice to involve service users in the design and delivery of drug-related services, and to engage with stakeholders in Ireland and abroad.

The outcomes:

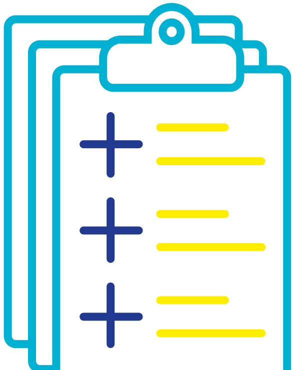
The study integrated findings from more than 10,000 records and documents, and interviews with more than 40 stakeholders (including 24 service users).

The integrative evidence review identified that:

- Fear, power differentials, legal responsibilities and lack of time can stand in the way of building empathy and trust between service users and practitioners.
- Service providers in Ireland need to create time and space for effective communication with service users, thus enabling service users to share in decision-making about their own care plans.
- Potential solutions include supporting smaller clinics, moving away from relying on drugs tests and punitive approaches and towards honest conversations with service users and staff, demonstrating that they care about their welfare.
- The findings were outlined in a publicly available HRB Drug and Alcohol Evidence Review and were presented to the Department of Health and the National Drugs Forum.

Dr Brian Galvin, Programme Manager for Drug and Alcohol Research, HRB, says:

> “Internationally there is a move towards involving service users in decisions around drug treatment, recovery and harm prevention. From the evidence review, we could see that in Ireland there are obstacles to building the trust and the empathy for that involvement. Much of it stems from the paternalistic culture of service provision, as well as stigma and lack of effective communication. Through the review of the literature and interviews with stakeholders and service users, the report shines a light on aspects of culture and practice that need to change, and can guide policy and practice towards a more collaborative relationship between service users and providers in Ireland.”



HRB informs the Citizens’ Assembly on Drug Use

Irish National Focal Point to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA)

The problem:

The Citizens’ Assembly on Drug Use met in 2023 to consider legal, policy and operational changes to significantly reduce the harmful impacts of illicit drugs on people in Ireland. The Assembly needed evidence to inform its deliberations.

The project:

Members of the HRB Evidence Centre provided background information to plan the Assembly’s discussions, and presented evidence to the Assembly for those discussions.

The outcomes:

- The HRB presented evidence to the Citizens’ Assembly on Drug Use (99 members of the public and the chairperson) on:
    - Drug patterns and trends.
    - Lived experiences of family members affected by problem substance use by a relative.
    - Health-led approaches – latest data on drug-induced and drug-related harms.
    - Treatment – latest drug treatment data

Dr Brian Galvin, Programme Manager for Drug and Alcohol Research, HRB, says:

> “In the Citizens’ Assembly models, the Assembly members and the chairperson hear from many different stakeholders and experts. The role of the HRB in the Citizens’ Assembly on Drug Use was to provide data and information, and a number of HRB staff gave presentations and took part in Q&A sessions at Assembly meetings in 2023. This meant that the Assembly’s discussions were based on high-quality and up-to-date evidence about drug use and treatment in Ireland.”

Drug use in Ireland – who is taking what, and why?

Lead researcher: Dr Deirdre Mongan, HRB

The problem:

We need to understand trends in drug use in Ireland in order to identify the best ways to prevent harm. But in the past, studies have been based on people receiving treatment for addiction or injury from drugs.

The project:

The EMCDDA watches and responds to drug-related problems in Europe. It coordinated the 2021 European Web Survey on Drugs (EWSD) across 30 European countries to find out more about patterns of use in everyday settings such as nightclubs. In Ireland, the HRB and the HSE organised the Irish leg of the online survey.

The outcomes:

- This was the first time that Ireland took part in the EWSD, and 5,762 people in Ireland responded to the online survey.
- HRB analysis of the survey results found that:
  - Cannabis was the most commonly used drug, followed by cocaine, ecstasy and ketamine.
  - Almost one-quarter of the respondents had used ketamine, the highest level of any country in the European survey.
  - Respondents in Ireland were most likely to report use of cocaine (49%) when compared with survey respondents in the other 29 European countries (34%).
  - Respondents mostly reported using drugs to reduce stress (80%) and to get high (88%).
  - People primarily buy drugs directly from dealers/sources, but social media and the darknet is also a route that many use.
- The findings were published in a publicly accessible report online, and presented to the Citizens' Assembly on Drug Use.

Dr Deirdre Mongan, Research Officer at the HRB Evidence Centre, says:

> "This is the first time in Ireland that we have collected and analysed information in this way, and from it we now have more insights into trends and the behaviour and attitudes of people in Ireland who use drugs. We were not surprised to see the relatively high use of cocaine and cannabis, as this is reflected in what we see in hospitalisations and addiction services. What was maybe less expected was the relatively high use of ketamine, which is particularly prevalent among people aged under 20 years."

Professor Eamon Keenan, National Clinical Lead, Addiction Services, HSE, says:

> "The HSE will use these findings to improve harm reduction responses on Drugs.ie and across third-level and nightlife settings."

Problem substance use and behavioural addictions – new insights into affected family members

HRB National Health Information Systems

The problem:

When a person uses drugs or alcohol in a problematic way or has behavioural addictions, it can affect family members and others close to them. Knowing more about the needs of affected family members will help to provide supports for them.

The project:

HRB research analysed routine data between 2010 and 2020 from the National Drug Treatment Reporting System (NDTRS), focusing on almost 14,000 referrals for family members seeking treatment because they were affected by another's drug, alcohol, or behavioural addictions.

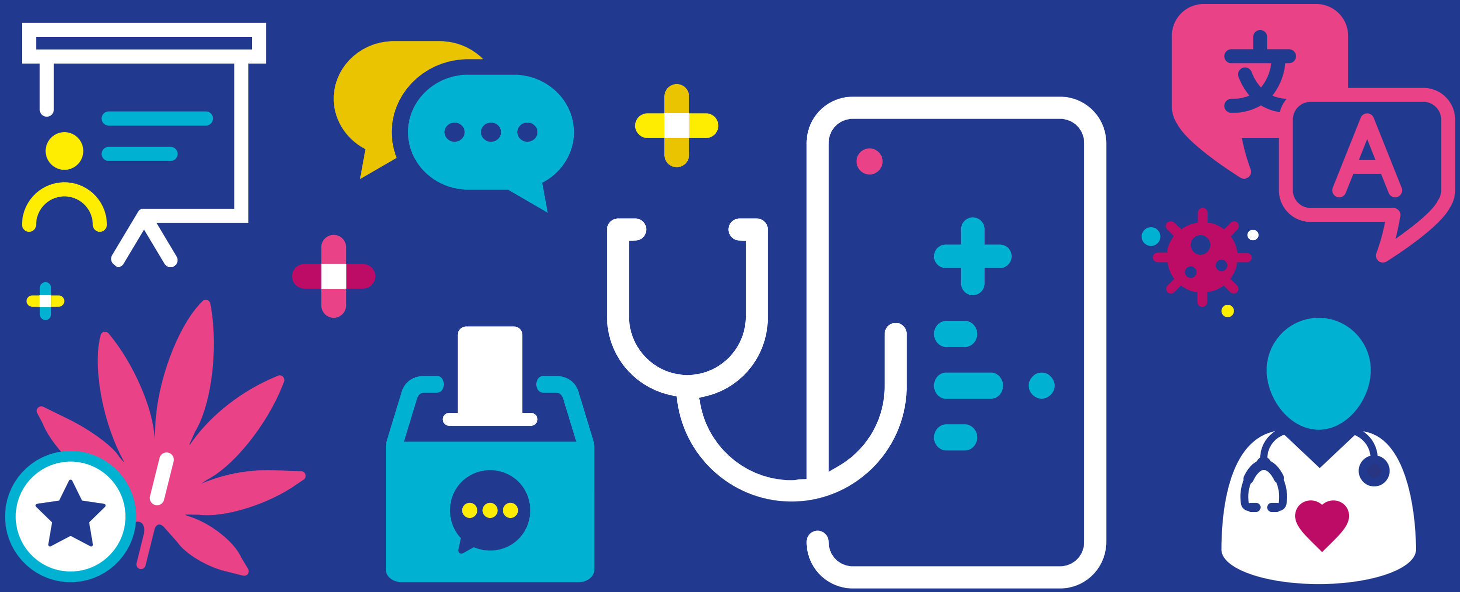
The outcomes:

- This was the first study in Ireland to use routinely collected drug treatment data to gain insights into affected family members and their support needs.
- We now know that in the recorded referrals:
  - Three in four referrals were for females, mainly aged 35–54 years.
  - One in 20 referrals were children, and one-half were aged 15 years or under.
  - Most were living with others, and three in five adults were living with children.
  - The most common treatments provided were brief intervention and individual counselling, both for children and adults.
- The findings were published in the journal Drugs: education, prevention and policy and presented to major European conferences on drug addiction and to the Citizens' Assembly on Drug Use in Ireland.

Cathy Kelleher, HRB Research Officer, says:

> "These data represent people who have been impacted by another person's problem substance use or behavioural addictions and there are individual stories behind the figures. Our data tell us about who is affected and give us an insight into their need for treatment. When a person has substance use issues or behavioural addictions, the focus of treatment tends to be on that person. However we know that family members are often affected and also need support. Even though we looked at nearly 14,000 referrals, we know that real-world treatment need and demand is even greater, because sharing data was voluntary. This research shows that routine surveillance can give valuable insights into affected family members and the hidden harm associated with behavioural and substance addictions."

Notes



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