

Impacts of Health and Care Research Wales Awards reported via Researchfish March 2021

(The latest submission window was 1 February - 11 March 2021)

Introduction

Every year, researchers in Wales working on research projects funded by Health and Care Research Wales send a report through to us via Researchfish to tell us about the outputs, outcomes and impacts of their research. This information is used by us to:

- Strengthen our evidence base
- Accountability
- Make the case for public investment in research
- Inform strategic decision-making
- Evaluate progress

The latest reporting window was 1 February - 11 March 2021. The data below are the cumulative data from all reporting windows since 2012.

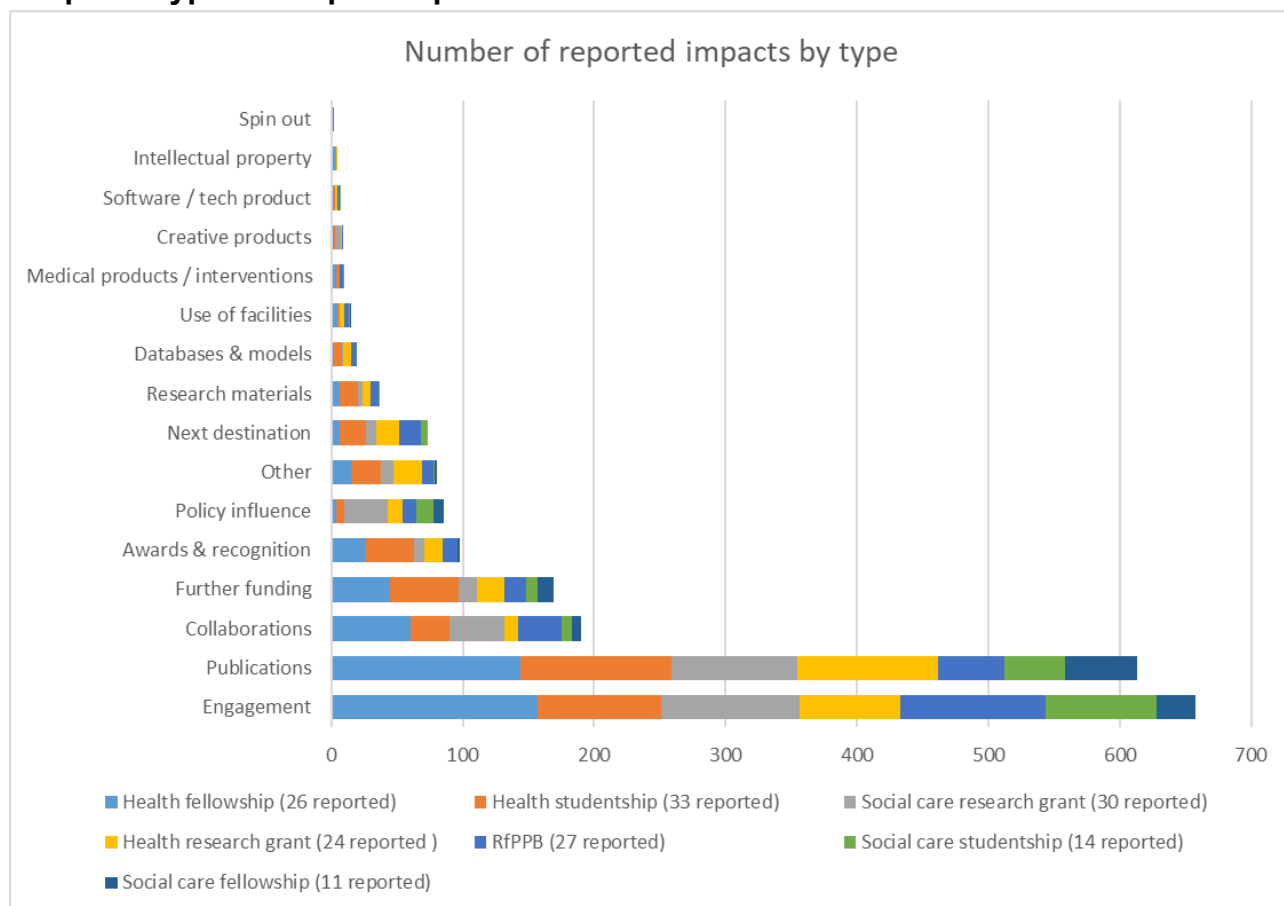
Number and range of impacts reported

Since 2012, 2,067 outputs and impacts have been reported from 221 awards – an average of 9.4 per award.

>> Researchers are reporting numerous impacts per award.

Graph 1 shows the range of impact types that have been reported on Researchfish which are attributable to Health and Care Research Wales awards. Engagement activities and publications are by far the most common impacts reported, Collaborations & further funding are also frequently reported.

Graph 1: Types of impact reported



>> **Dissemination activities are strong – researchers are publishing and engaging with others about their research.**

>> **We encourage all researchers to consider the full range of impacts that could arise from their study.**

The sections below provide examples of impacts reported by our researchers across the range of impact types.

Engagement activities (658 reported)

Types of activities include:

- A talk or presentation (347, including 106 international)
- Participation in an activity or workshop (157, including 23 international)
- A working group or expert panel (54, including 6 international)
- An engagement-focused website or blog (35, including 22 international)
- A press release or press conference (32, 5 international)
- A magazine, newsletter or online publication (20, including 4 international)
- TV, radio, podcast or film broadcast (13, including 7 international)

212 of the 658 engagement activities involved policy makers. 237 involved practitioners. 208 involved patients, carers and patient groups.

The main outcomes of the engagement were listed as: plans made for future related activity (152); requests about further participation (148); changing people's views, opinions or behaviours (131); requests for more information (101); a decision made or influenced (25).

Publications (613 reported)

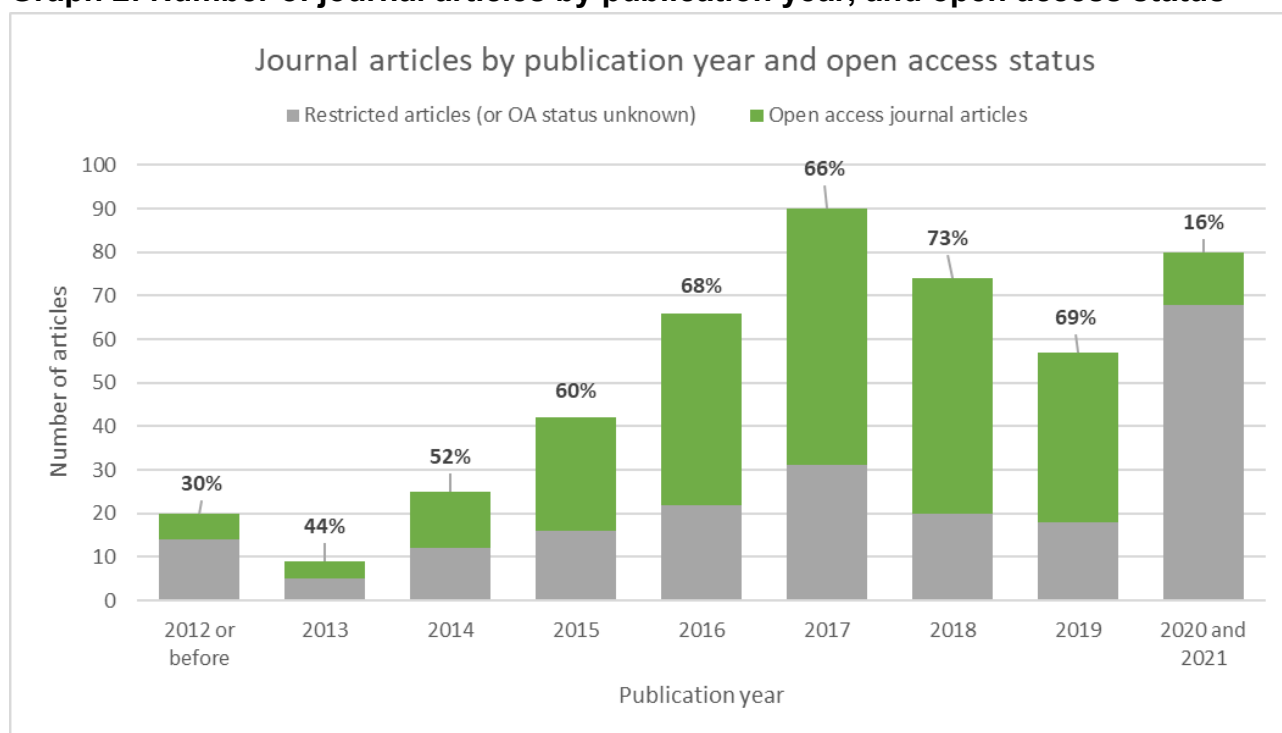
>> RF data can tell us a lot about where people are publishing, whether the articles are Open Access, and whether they are stored in the PubMed repository.

When publications are reported, there are usually several – 5 is the average, with 14 awards recording 10 or more (including 3 studentships!).

Of the 613 publications, most are journals (467), but there are also books and book chapters (17); abstracts in conference proceedings (87), theses (10) and other types.

Articles are published in a wide range of journals, including the British Medical Journal (BMJ) (20). **Graph 2** shows how the proportion articles that are Open Access (OA) has increased since 2012 – now around 70%. (There is an anomaly for articles published 2020 and 2021 as some are in the OA embargo period).

Graph 2: Number of journal articles by publication year, and open access status



Collaboration & partnerships (190 reported)

Researchers are asked to record bi-lateral or multi-lateral partnerships resulting from the grant, and when a member of the research team/group has entered into an agreement to participate in a network, consortium, multi-centre study or other initiative. They record the contributions made by partners, and the impact of these collaborations.

Most are within the UK (134), but there are also collaborations with people in the US (5) Europe (19) and further afield (32). They are usually academic collaborations (100) but also collaborations with charities (28), hospitals (12) and public bodies (31).

Further funding (169 reported)

Researchers report when their Health and Care Research Wales award has helped them obtain further funding. The 221 Health and Care Research Wales awards (representing a Health and Care Research Wales investment of £38.6 million) have, to date, helped to obtain further funding that adds up to £62.8 million.

Sources of the further funding include: Health and Care Research Wales (£8.5 million), Medical Research Council (MRC) (£11 million), NIHR (£6.6 million), Wellcome Trust (£4.5 million), The Wolfson Foundation (£10 million) and charities and universities.

Awards & recognition (98 reported)

- 23 research prizes, including Health and Care Research Wales / University / Conference awards; a FAME Lab UK award, a British Science Association Charles Darwin Lecture award, a Young Investigator award.
- 15 poster or abstract prizes
- 22 invitations to be a key note speaker
- 13 prestigious positions on an external body, including grant panels and committees, and also advisors and Visiting Professorship
- 13 appointments as an editor or advisor to a journal or book series
- 7 honorary memberships or fellowships of a learned society
- 4 instances of attracting visiting staff to their research group
- 1 medal and 1 MBE (Gareth Collier was awarded an MBE in 2018 for his work in lung cancer. He is Chief Investigator for the Health and Care Research Wales project.)
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Influencing policy / practice (86 reported)

Impacts assigned to the Health and Care Research Wales funded awards, including:

- Citation of research in clinical guidelines (3)
- Citations of research in clinical review or policy documents (10)
- Giving evidence to a government review (8)
- Implementation circular/rapid advice/letter to e.g. Ministry of Health (4)
- Influencing training of practitioners or researches (33)

- Being a member of a guideline committee (7)
- Taking part in an advisory committee (18)

Research materials (37 reported)

This captures new research tools and methods that were developed as the Health and Care Research Wales research. Researchers include information on the impact it has had. Examples of new research materials include:

- Method to measure blood serum biomarkers
 - Advanced image processing techniques
 - Improved immunohistochemical protocol
 - Algorithms for advanced automated radiotherapy treatment planning
 - Use of scratch cards for randomisation into trials
 - Measure of the quality (poor and good) of newspaper reporting of suicide.
 - GRiP screening tool to guide selection of peer coaches
 - 96-well plate based assay to monitor platelet aggregation
 - 3D model platform of ovarian cancer ...
- ... and more

Research datasets, databases and models (19 reported)

These include, for example, 2D and 3D data for cardiac disease modelling; bacterial genomes; national exercise referral database; eating disorders dataset in SAIL; a database of patient cellular/molecular/plasma samples; the Care Home dataset; Care & Repair dataset.

Facilities (15 reported from 12 awards)

This impact captures when grants have enabled researchers to access world-class large-scale research facilities, in the UK and other countries. Some from Health and Care Research Wales awards are:

- Patient recruitment from the Genetic and Environmental Risk in Alzheimer's Disease Cohort
- Patient and Public Involvement (PPI) recruitment through Health and Care Research Wales Patient and Public Involvement support
- Access to equipment, such as faecal immunochemical testing (FIT) analyser, Raman spectroscopy machine
- Access to data, through the linkage of data in SAIL, and from the Centre for Genomic Research
- Services from the All Wales Medical Genetic Laboratory, and Central Biotechnology Services
- Storage of blood in the European Collection of Cell Cultures (ECACC)

Creative products (9 reported, from 6 awards)

1. Exhibition and musical performance 'Representing the Mind', awarded a Research & Development grant by the Arts Council of Wales (from two linked Health Fellowships on interventions for adolescent depression, one ending 2018, one ending 2022)
2. 3 creative products related to 'Keeping Safe', including a graphic recording of the advisory group workshop; 'Check Your Thinking' cards – with 400 sets requested and shared; and posters (from Social Care research grant on sexually exploited young people, ending 2018)
3. 'Mind the Gap!' video to help people support those with eating disorders (from Health research grant on eating disorders, ending 2017)
4. A YouTube animation giving an introduction to the 'skill optimiser self-evaluation tool' (from Research for Patient and Public Benefit (RfPPB) grant on optimising skill mix in dentistry, ending 2017)
5. Public engagement activity at a primary school to create artwork entry for 'Research as Art' exhibition (from a Health studentship on pregnancy, ending 2013)
6. Digital story archive *Praisesongs* (from Social Care research grant ending 2012, on dignity in social care)

Medical products / interventions (10 reported, from 6 awards)

1. Diagnostic tool: Raman-CRC blood test with high levels of sensitivity /specificity for colorectal cancer and polyps (reported twice, from a RfPPB award, ending 2020)
2. A decision aid for dental practitioners and their patients to encourage collaborative decision making regarding dental recall interval setting in general dental practice (from RfPPB grant, ending 2020).
3. Decision support tool: Informed consent and proxy decision making in research involving adults lacking capacity (from Health fellowship, ending 2019)
4. Diagnostic tool: Use of PLCzeta antibodies in determining sperm fertility prognosis including use of Antigen Unmasking (AUM), and correlation of PLCzeta antibodies with embryogenesis health and pregnancy outcomes (reported three times, from Health Fellowship, ending 2019).
5. Public Health intervention: web-based wellbeing intervention (from a Social care studentship, ending 2017)
6. Therapeutic intervention: Neurofeedback training, based on real-time functional magnetic resonance imaging signals, for patients with depression (reported twice, from Health studentship, ending 2014)

Software & Tech products (7 reported)

1. Development of free open source software using artificial intelligence to create a smarter means of scheduling surgical procedures at hospitals – and replacing need to pay for licensed software (from a Health research grant, ending 2017) – *provides masses of information that could be used for case study.*

2. Development of an automated system to generate Intensity Modulated Radiotherapy (IMRT) treatment plans (from an RfPPB grant, ending 2017)
3. Development of an online psychoeducation package for adolescent depression (reported twice from two Health Fellowships to Dr Bevan-Jones)
4. Development of an online platform for self-harm research (from a Social Care studentship, ending 2017)
5. Development of software to study the functionality of heart valves as a function of flow and pressure (from a Health studentship, ending 2014)
6. Development of a comprehensive suite of 3D image analysis software, which has been valued at £48k and delivered to a local company (from a Health research grant, ending 2012)

Intellectual property (4 reported - plus another that doesn't look like new IP)

1. MobQoL outcome measure questionnaire (from CHEME Health Fellowship, ending 2020)
2. ENGAGE-HD Physical Activity Workbook, copyrighted and will be licensed for use in other settings (from a Health Fellowship, ending 2018).
3. 3D intestinal organoid cell models for adenomatous polyposis syndromes, which have been licenced from Cardiff University to Cellesce Limited for use in drug development (from a Health Fellowship, ending 2017)
4. Copyright of sequences and structural models of candidate peptide therapeutics targeting the IL-13 receptor - potential as candidate asthma therapeutics (from a Health Studentship ending 2013).

Spin outs (2 reported)

One is CANSENSE Ltd, which has 4 directors and co-founders. It is developing a fast, inexpensive and scalable test for the early diagnosis of colorectal cancer using blood based assay. This builds on work done under an RfPPB award, ending 2020.

The second is PulmonIR Ltd, a respiratory diagnostic company spun-out from Swansea University, and research from a Health Studentship (ending 2018) contributed to its foundation. The studentship evaluated the use of FTIR technology on COPD patients using clinical samples from the SPEDIC study carried out in collaboration with Cwm Taf University Health Board. The company won the MediWales start-up award in 2016.

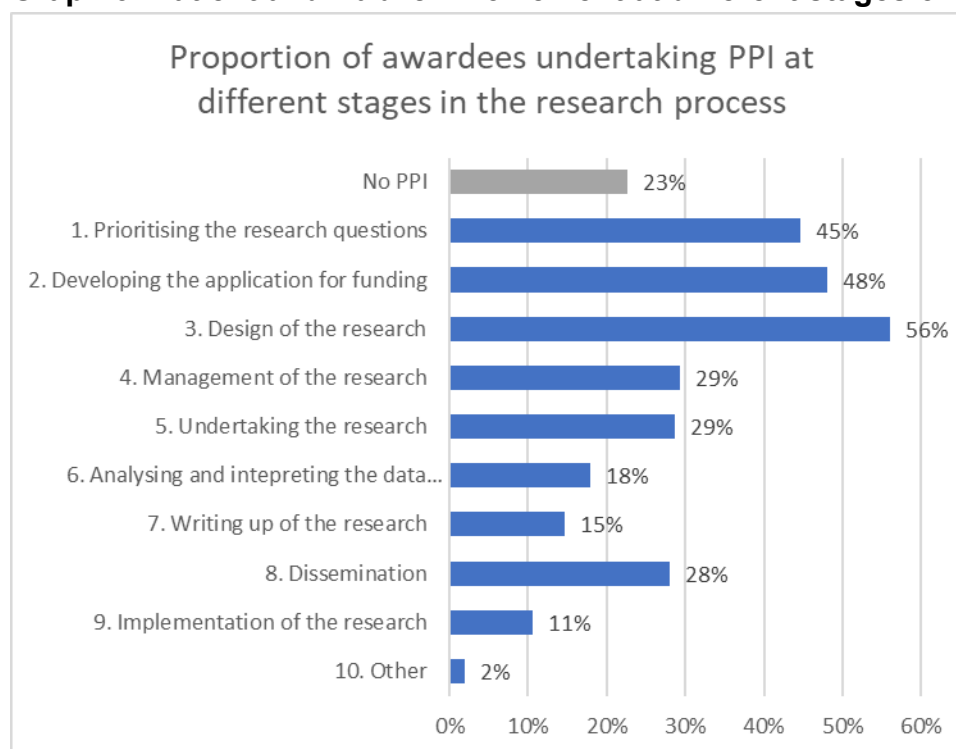
Patient and Public Involvement (PPI)

Since 2018 we have asked awardees to report on PPI activity, and to date 150 awardees have completed the PPI section.

Awardees are asked if and how they have involved patients and/or members of the public in their research. 116 answered yes (77%), the rest not applicable (3%) or no (20%).

Graph 3 shows that this PPI took place at a range of stages of the research – most often at the earlier stages (developing the research question and application and designing the research), but with some studies engaging with patients and the public throughout the process. On average, studies used PPI at 3 or 4 different stages.

Graph 3: Patient and Public Involvement at different stages of the research process



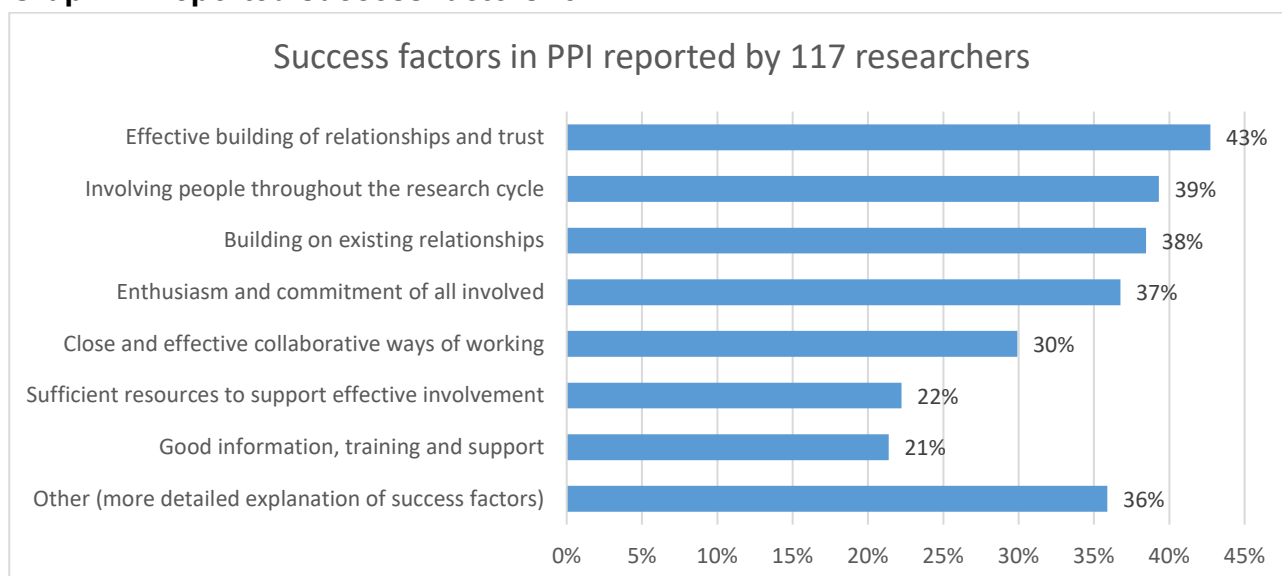
Researchfish also asks awardees:

- to describe the factors that contributed to the success of the PPI in their research (such as effective building of relationships and trust).
- what the PPI challenges have been. (For example, that the nature of condition can affect ability to be involved; that there are only a small number of appropriate people with whom to engage; or that ensuring that people who are contributing their lived experience receive recognition of their input through an honorarium or voucher is challenging in some universities/ organisations)
- what difference they feel PPI has made to their research.

117 researchers told us about the **success factors** for the PPI in their project – see **Graph 4**.

>> The effective building of relationships and trust was felt to be the most important success factor for PPI.

Graph 4: Reported success factors for PPI



Very few researchers (only 15 out of 150) reported that they had found involving people challenging.

- 11 talked about problems arising from the COVID-19 pandemic
- 2 mentioned the difficulty of properly rewarding / reimbursing people who had taken part, and a further 2 mentioned that some participants are put off through concerns that reimbursement would affect their benefits
- 2 mentioned difficulties incorporating PPI due to the time pressures of the research project.

Many different impacts of the PPI on the research project were reported, including, for example:

- Making sure the research answers the right questions, so it is relevant and specific and of importance to patients /service users
- Keeping the patient-focus during a technical project
- Tailoring technology so it addresses the needs of patients
- Developing a novel intervention that was unanticipated by the research team
- Refining an intervention, making sure it is implementable
- Understanding which outcome measures are meaningful to affected families
- Understanding experience of a diagnosis pathway so a better one could be developed
- Designing data collection methods so fewer people opted out
- Help in making the conclusions more credible
- Help with understanding and interpreting the findings
- Helping to disseminate the research