



Healthcare Technology Centre (HTC)

Health and Social Care Research, Innovation and Improvement Landscape

April 2022

Executive Summary

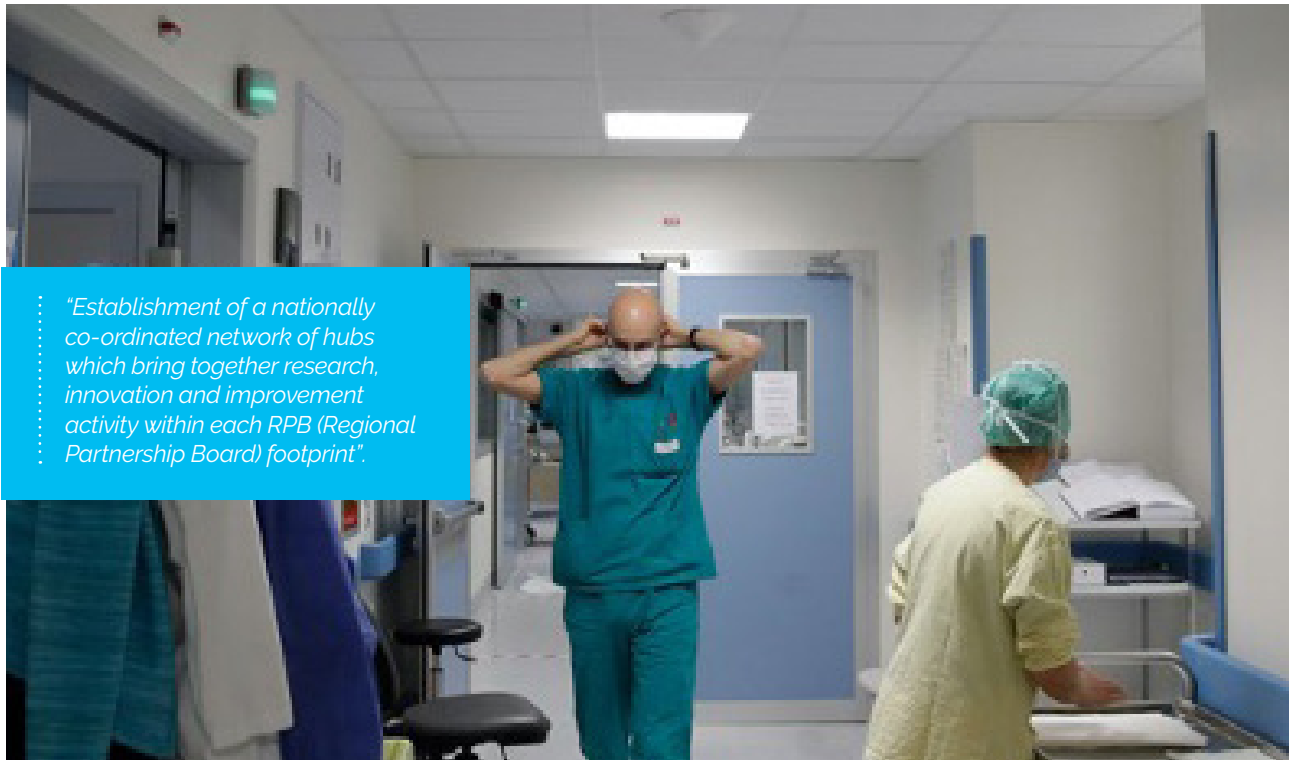
The Cardiff & Vale Regional Partnership Board (RPB) through means of the Regional Innovation Co-ordination (RIC) Hub commissioned the Healthcare Technology Centre (HTC) at Swansea University to summarise the Health and Social Care Research Innovation and Improvement (RII) landscape across the region. The purpose here was to provide a detailed understanding of all Health and Social Care RII assets and activities present or ongoing in the Cardiff & Vale region. The aim of the research is to provide an evidence-base that could subsequently inform the development of the emerging strategy of the Cardiff & Vale RIC Hub, whilst also serving as a common resource for wider regional stakeholders. The unique landscape of Cardiff & Vale sets to provide insights and recommendations to optimise Health and Social care activities in the region.

The research team based at the HTC in Swansea University dedicated several months to undertake a thorough review of the Health and Social Care RII ecosystem in the Cardiff & Vale region. The research study design incorporated desk-based research approaches and engagement with key stakeholders from across the region through means of detailed surveys and semi-structured interviews. Stakeholders who engaged helped to transcend the broad spectrum of Health and Social Care, including Primary and Community Care, Secondary Care, Social Care, Academia, and the Third Sector. Key findings are briefly presented below.

The research study design involved both desk-based research approaches, along with interaction with key stakeholders from across the Cardiff and Vale region, through surveys and semi structured interviews methodologies.

The broad spectrum of Health and Social Care domains, including;

- Primary and Community Care
- Secondary Care
- Social Care
- Academia
- Third Sector



Primary and Community Care in Cardiff and Vale

Our findings highlight the strength in collaboration and cluster activities relevant to Primary and Community Care services across Cardiff & Vale, although opportunities highlight the potential for further development across these sectors (see section 4.0). The review of Primary Care Services outlines recommendations to support the clusters that are in place, through the implementation of 'locum cluster lead' posts, to improved strategies for the procurement and evaluation of nuanced working approaches. Clusters in the Primary Care sector provide promising evidence regarding the region's ability to collaborate with key stakeholders for collaborate benefit.



Cardiff & Vale Academic Partners:

Academic institutions in Cardiff & Vale (including Cardiff University and University of South Wales) demonstrate leading RII activity and expertise across a broad spectrum of domains related to Health and Social Care (see section 7.0). Areas of strength hereby include (but are not limited to) nuanced developments in various research topics, including Cancer, Dementia and Neurodegeneration, Genetics, Renal Disorders, Respiratory Disorders, and Neurological Disorders (see section 7.0). These academic partners are also involved in Health and Social Care related RII support programmes, such as the Centre for Innovation Ageing (CIA), the Cerebra Innovation Centre (CIC), the Institute of Management and Health, the Wales School for Social Care Research (WSSCR), the Wales Centre for Primary and Emergency Care Research (PRIME Centre Wales) and the Assistive Technologies Innovation Centre (ATIC).

Other Health Board RII Activity in Cardiff & Vale:

Secondary and Tertiary care delivered by CVUHB shows great potential to support Primary and Community care in Cardiff & Vale and throughout. This has been evidenced by the All Wales NHS COVID-19 Innovation and Transformation Study, and the Welsh Ambulance Service Trust (WAST). CVUHB has a strong research capacity and continuously demonstrates commitment to ensuring the translation of research findings for wider dissemination, totalling over 17,745 academic publications at the time of writing. Compared to counterpart health boards across Wales, the research capacity demonstrated by CVUHB far outperforms all other Welsh regions.

The Third Sector in Cardiff & Vale:

The third or voluntary sector in Cardiff & Vale represents an active and diverse segment of the Health and Social Care RII ecosystem in the region. Organisations within this sector play a vital role in supporting the delivery of a variety of health and care related services across the region, championing key agendas such as Mental health issues, supporting people with disabilities and research into various cancers. Alongside core activities, organisations within the Cardiff & Vale third sector are also involved in undertaking a range of Health and Social Care related RII activities (see section 8.0), ranging from the development of innovative services in the community, to the design and implementation of new programmes to support safe discharge from hospitals.

These third and voluntary organisations are supported by the activity of the two County Voluntary Councils (CVCs), namely the Cardiff Third Sector Council (C3SC) and Glamorgan Voluntary Services (GVS). These organisations are also involved in wide-ranging RII activities, much of which is associated with the delivery of the Integrated Care Fund (ICF) and Transformation projects across the region. While these organisations are not as heavily involved in RII activities as other sectors, the third (voluntary) sector is an important stakeholder asset in RII activities, nonetheless.



Barriers and Enablers to Health and Social Care RII in Cardiff & Vale:

Further to developing insights about Health and Social Care RII assets and activities existing within the Regional Partnership Board boundaries of Cardiff and Vale, the present report utilised qualitative methodologies to understand the Health and Social Care RII in the region. This involved understanding stakeholder perceptions regarding the perceived barriers to undertaking Health and Social Care RII related activities in Cardiff & Vale (see section 10.1). Findings highlight several key challenges which influence the ability of stakeholders to pursue RII activities in the region. Key barriers hereby included issues surrounding restricted resources (in terms of financial resources and time restrictions, and the impact they had on the capacities for health and care professionals to pursue related activities), cultures towards RII activity and inhibitory organisational processes, the impact of COVID-19 on workload, the impacts of ineffective processes in place to support research, innovation, and improvement and issues surrounding communication and collaboration between individuals and sectors.

However, analysis of survey responses outlined several factors which enable or facilitate Health and Social Care RII related activities; findings which demonstrate the proactive approaches taken by Cardiff & Vale RII (see section 10.2). Key enablers or processes shown to support RII activities and capabilities hereby included organisational culture change (which was highlighted as fundamental to supporting innovation), in addition to positive impacts gained from improved processes in technology. Moreover, changes secondary to the COVID-19 pandemic were also highlighted as enablers in some regards, with findings pointing towards the improved streamlining of services and procedures, and more effective collaborative efforts made between individuals working across different organisational settings relevant to health and social care. Adequate funding was also specifically highlighted as a resource with great capacity to positively influence RII activities. These findings highlight potential opportunities to increase the ability of stakeholders and organisations to improve their innovation and improvement activities.

Health and Social Care related RII Priorities in Cardiff & Vale:

This study also sought to understand stakeholder perspectives on regional Health and Social Care RII priorities across Cardiff & Vale (see section 10.4). This related to areas across Health and Social Care wherein stakeholders within Cardiff & Vale believed RII related activities were most urgently required. Insights captured through surveys and semi-structured interviews identified six priority areas where stakeholders believed further RII activity was considered most necessary. These included the following, that are in order of most discussed, to least from the data analysis:

- Mental Health Services
- Cross-border Collaboration
- Social Care
- Social Prescribing
- Healthy Resilient Communities
- Digital Systems and the Use of Digital Technology

These insights thus highlight potential directions for future RII efforts across Cardiff and the Vale of Glamorgan, allowing RII activities to be strategically focussed on key health and social care arenas going forward.



The Role of the Regional, Innovation Co-ordination Hub RIC hub

The findings outlined in this report highlight the vital role that the Cardiff and Vale RIC Hub plays in ensuring a more integrated and coherent approach to Health and Social Care related RII activities across Cardiff and the Vale of Glamorgan. Benefits that might be associated with the effective establishment and functioning of the Cardiff and Vale RIC Hub could further support the development of a more effective Health and Social Care RII ecosystem, while working to reduce regional duplication and minimise wasted resources.

Moreover, findings generated from both interviews and survey responses (see section 10.0) outline the specific roles that stakeholders believe the Cardiff and Vale RIC Hub might assume to optimise the Cardiff and Vale RII ecosystem. Overall, stakeholders highlighted the potential for the RIC Hub to be a 'one-stop shop' for all RII activity across health and social care in Wales, providing a consistent point of contact for organisations to engage with national innovation and industry engagement initiatives/networks. Specifically, stakeholders pointed towards the potential for the RIC Hub to improve communication mechanisms across primary, secondary and social care boundaries to drive prevention based practices and wellbeing through strong regional and local networks. Here, stakeholders suggested that the role of the RIC Hub might be to identify good practice across the Cardiff and Vale region, while also identifying good practice demonstrated by other countries and regions, such that promising RII activity may be upscaled and spread within and across regions. Building on from this, stakeholders also suggested that the RIC Hub may better identify, assess and share the extent of adoption of findings and recommendations from national organisations.

In addition, amongst other functions (see **Section 4**), regional stakeholders also suggested that the Cardiff & Vale RIC Hub might provide additional signposting support; develop forums to discuss new ways of working; share RII expertise; communicate regional RII activity and success stories; and enhance interdisciplinary collaborative activity.





Key Research Findings

Overall, the findings reported herein suggest that the Cardiff and Vale region is relatively well placed to contribute towards the goals of the Welsh Government's (2018) A Healthier Wales strategy. In accordance with the Wellbeing of Future Generations Act, the various examples of collaboration between key stakeholders in academia, Government agencies and the NHS highlight the benefits associated with working together to improve the region's capacity to support the health and wellbeing of populations across Wales, although more effective collaboration is necessary in some instances. The evidence synthesised in this report demonstrates a strong, diverse clustering across Cardiff and the Vale of Glamorgan, although opportunities for growth and development remain. With strong stakeholder engagement from the University Health Board, RIC Hub and academia provided valuable insights from these sectors. However, achieving stakeholder engagement from social care, third sector and industry proved difficult, although this could be attributable to waves of COVID-19 which placed significant pressure on healthcare professionals across the region.

Increased RII activities and collaborated efforts are needed to provide adequate support to social care and mental health services.

Findings detail a rich and diverse, although inherently complex, regional Health and Social Care RII landscape in Cardiff and Vale. This largely aligns with findings relevant to other health regions across Wales. However, opportunities exist to ensure all partners across the Health and Social Care RII ecosystem in the region are working together and communicating effectively. Moreover, there also lies an opportunity to ensure RII potential is maximised through greater coordination and improved visibility of regional RII assets and activities, alongside providing support and training mechanisms.



Key Emerging Opportunities

The findings found key emerging opportunities for Cardiff and Vale RIC Hub to take forwards to support RII activities. A few of the key opportunities will be described below, with reference to these in section 3.0.

- A central coordinating body, such as the Cardiff and Vale RIC Hub, to oversee and manage Health and Social Care RII activity across the region.
- The RIC Hub are well-positioned to bring partners together and provide a forum to ensure all partners are communicating and working together effectively to drive RII.
- RIC Hub and wider partners to define an 'end to end system of RII support' in the region across both Health and Social Care domains.
- Further develop RII infrastructure across Local Authority and Social Care domains, by establishing leadership roles and wider team structures within such organisations in supporting RII activities across Cardiff & Vale
- Develop an integrated, cross-sectoral database for RII knowledge management and reporting, enabling all partners to effectively report and understand ongoing Health and Social Care RII

activity across the Cardiff and Vale region.

- Engage with regional skills development programmes such as the Intensive Learning Academies and embed RII training modules as a core element of workforce training programmes.
- Develop long-term, sustainable integrated RII arrangements across the region. This might involve developing an integrated Health and Social Care RII strategy, whilst there may also be scope to develop shared funding mechanisms.



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Report Framing and Acknowledgements

This report and its accompanying appendices provide an overview of the Health and Social Care related Research, Innovation and Improvement (RII) landscape across the Cardiff & Vale Regional Partnership Board (RPB) programme area. The report gathers, synthesises, and analyses a broad range of information from across Health, Social Care (Local Authorities), Academia and the Third (Voluntary) Sector, drawing upon both primary data sources (surveys and interviews) as well as secondary data sources (insight drawn from previously published information). Where secondary data sources have been used, these have been clearly identified and referenced to their relevant source, with no credit claimed by this research for collecting such data. Before moving into the main body of the report, it is important to note key boundaries and limitations of the report.

- The information contained within this report and related appendices offer a summary of information that the authors were able to obtain within the given timeframes, boundaries, and context of the research. It should be acknowledged that due to the COVID-19 pandemic, some populations were unable to engage within the research. This is further discussed within the limitations section of this report (refer to pp. 143)
- While the report aims to offer a detailed overview of the Health and Social Care RII landscape across the Cardiff & Vale region, the scope of this is not entirely comprehensive due to the dynamic and evolving nature of RII activity, as well as the context (COVID-19) and timeframes within which data gathering was undertaken. However, stakeholders undertaking RII activity that has not been identified within the report or related appendices are encouraged to engage following the dissemination of the report

- The information provided in the report is believed to be factual up to the date the report was published. This includes examples of current RII projects, in addition to projects undertaken or reported since 2018. However, relevant projects undertaken prior to this date were also captured for brevity.
- Due to the broad scope of mapping all health and social care related RII activity across the Cardiff & Vale region, this report focuses primarily on the public and third sector domains. This includes Health (NHS Wales and wider public sector), Social Care (Local Authorities and wider public sector), Academia and the Third Sector.
- While it is acknowledged that other sector stakeholders such as industry partners also play a critical role in the Health and Social Care RII ecosystem across Cardiff & Vale, contributions made by such partners have not been thoroughly detailed within the current report. This is due to the limited timeframe within which data gathering and research was conducted, such that a comprehensive inclusion of such organisations remained beyond the scope of the research. However, detailed inclusion of other stakeholders is strongly recommended as a subsequent phase of this research study.

We are extremely grateful for those stakeholders who supported the development and collation of this report. Firstly, we would like to thank the Cardiff and Vale University Health Board and the Cardiff Regional Innovation Coordination (RIC) Hub for commissioning Swansea University Healthcare Technology Centre to lead the mapping project for Cardiff & Vale. Furthermore, we would also like to thank the stakeholders who took the time to share their insights and engage with the research project. Without their valuable contributions, this research and related insight derived from this activity would not have been realised.

Foreword

The Health and Social Care sectors in Wales play a critical role in not only improving and sustaining population health and wellbeing, but also influencing wider determinants of wellness such as employment, education, housing, social inequality and economic growth.

Despite this, Health and Social Care service delivery models of today in Wales are still underpinned by an approach designed to serve the population health and care needs of decades ago.

A process of incremental evolution in service delivery models rather than transformational change approaches, alongside rapidly evolving consumer needs and expectations, has placed services in Wales under significant financial and performance-related pressures. Resultingly, the recent Parliamentary Review on Health and Social Care in Wales (2018) has described the current situation as 'unsustainable' and details a need for wide-scale transformational approaches to be implemented at a significant pace.

As alluded to by the Parliamentary Review on Health and Social Care (2018), Research, Innovation and Improvement (RII) related activities will need to play a pivotal role if Wales is to achieve the desired transformational change. This notion is echoed within the Welsh Government's (2018) long term strategy for Health and Social Care, 'A Healthier Wales', which translates these principles into practice by proposing the 'establishment of a nationally co-ordinated network of hubs which bring together research, innovation, and improvement activity within each RPB footprint'. Now more than ever, the value and importance of Health and Care related RII is being recognised at the forefront of both policy and practice. RII activities in this domain matter more now than ever

before, with the pandemic demonstrating the profound impact such activity can have on population health and wellbeing in the face of significant adversity.

However, Health and Social Care related Research, Innovation and Improvement activities occur within highly complex, multi-actor, multi-disciplinary ecosystems, often at both regional and national levels. Thus, to derive appropriate strategies to successfully co-ordinate and drive Health and Social Care RII activity within such regional and national ecosystems, an understanding of the dynamics, assets and activities that exist within is critical. To support this, the Cardiff & Vale of Glamorgan RPB, facilitated by Welsh Government funding, has commissioned Swansea University's Healthcare Technology Centre to undertake a review of the Health and Social Care RII landscape across the region.

This report aims to provide an overview of the Health and Social Care RII landscape across the Cardiff & Vale region, along with presenting findings and emerging opportunities. In line with the ambitions of the Cardiff & Vale Regional, Innovation Coordination (RIC) Hub, this detail current examples of RII activities across the Cardiff & Vale region, spanning Primary and Community Care, Secondary Care, Social Care, Academic and Third Sector settings. This evidences a large and diverse range of activity ongoing across the region, both amongst and between stakeholders co-existing within the Cardiff & Vale regional RII ecosystem and further afield. Examples of such activity include new models of service provision, innovative approaches to workforce re-design, both basic and applied health and social care research, new approaches to integrated working and the design and implementation of new products, processes and services. The intention of this research is to inform the evolving strategy of the Cardiff & Vale RIC Hub.

Glossary of Terms:

- ABMUHB – Abertawe Bro Morgannwg University Health Board.....
- ABUHB – Aneurin Bevan University Health Board.....
- BCUHB – Betsi Cadwaladr University Health Board.....
- CTMUHB – Cwm Taf Morgannwg University Health Board.....
- CVUHB – Cardiff and Vale University Health Board.....
- HDUHB – Hywel Dda University Health Board.....
- HEIs – Higher Education Institutions.....
- ICF – Integrated Care Fund.....
- ILA – Intensive Learning Academy.....
- IMDT Innovation Multidisciplinary Team.....
- LA – Local Authority.....
- LSH - Life Science Hub.....
- PAVO – Powys Association of Voluntary Organisations.....
- PHW – Public Health Wales NHS Wales Trust.....
- PRHSCW – Parliamentary Review on Health and Social Care in Wales.....
- PRIME - The Wales Centre for Primary and Emergency Care Research.....
- PTHB – Powys Teaching Health Board.....
- RHCW – Rural Health and Care Wales.....
- RII – Research, Innovation, and Improvement.....
- RIC Hub – Regional Innovation Co-ordination Hub.....
- RIF - Regional Intergration Fund.....
- RPB – Regional Partnership Board.....
- SBUHB – Swansea Bay University Health Board.....
- SEWAHSP - South East Wales Academic Health Science Partnership
- VELINDRE – Velindre NHS Wales Trust.....
- WAST – The Welsh Ambulance Services Trust.....
- WEFO - Welsh European Funding Office.....
- WSSPR – Wales School of Social Prescribing Research.....

1.0 Background and Context

In 2018, a Parliamentary Review on Health and Social Care (PRHSCW, 2018) determined the current model of Health and Social Care service delivery in Wales to be 'unsustainable'. Changing demographic needs, increasing demand, and ever-growing patient and public expectations, alongside new treatment and care possibilities, have placed sustained pressures on health and care services throughout Wales (Bevan Commission, 2016). Consequently, the Parliamentary Review outlined an urgent and decisive need for wide-scale service transformation, underpinned by the development of new models and approaches to service delivery, driven by evidence-based research, innovation, improvement related activities.

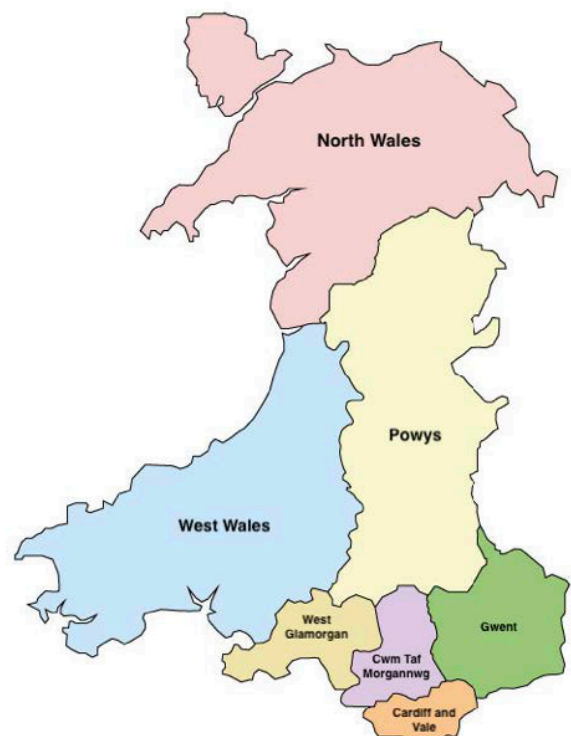
In response to the Parliamentary Review, 'A Healthier Wales', the Welsh Governments long-term strategy for Health and Social care (Welsh Government, 2018), outlined an ambition to create a seamless system of health and social care in Wales to overcome many of the challenges identified. To achieve this, the strategy places emphasis on realising greater integration between health and social care providers, shifting focus towards early intervention and prevention-based approaches, and designing new and effective approaches to delivering services across community, primary, secondary, and social care settings. As acknowledged by the Bevan Commission (2016), doing more of the same is now no longer enough, and to achieve the ambitions of A Healthier Wales and the Parliamentary Review; Research, Innovation and Improvement (RII) activities are considered critical in devising new, effective approaches to the sustainable provision of health and care services.

To support this ambition and develop a more joined-up approach to Health and Social Care related RII activities across Wales, the Welsh Governments 'A Healthier Wales' strategy mandated the 'establishment of a nationally co-ordinated network of hubs which bring together research, innovation and improvement activity within each RPB footprint'. With these regional Regional Innovation Coordination (RIC) Hubs having been established, deriving an evidence-based strategy is now imperative

in ensuring the hubs maximise impact and achieve the most effective use of the resource that they have been provided with.

A key aspect in facilitating this activity is gaining a comprehensive understanding of the current Health and Social Care RII landscape and related dynamics at a regional and national level. Doing so, will permit the identification of regional and national strengths and weaknesses, provide transparency, and highlight areas of good practice and potential replication. Such insight can then be used to inform the development of a place-based strategy and support targeted evidence-based interventions. In line with this, the Cardiff Regional Partnership Board has recently commissioned Swansea University to undertake a research study to examine the Health and Social Care RII landscape and dynamics in the Cardiff region. The following section of this interim report now describes the systematic methodological approach adopted by the research study.

Figure 1: Map of Welsh Regional Partnership Board Boundaries.



1.1: The Cardiff & Vale Regional Partnership Board (RPB):

The Cardiff and Vale Regional Partnership Board (RPB) was established because of a legal scaffolding put in place as part of the Social Services and Wellbeing (Wales) Act 2014. As one of seven RPBs set up throughout Wales, the remit of the Cardiff and Vale RPB is to drive closer regional working relationships with counterparts in Health in order to improve the regional delivery of health and care services (Social Care Wales, 2020). This supports the aims of A Healthier Wales (Welsh Government, 2018), which outlines a need to develop innovative ways of further integrating health and care services. The RPB's also play a role in overseeing and coordinating operational aspects of the National Transformation programme at a regional level with more detail relating to this provided in the following body of this document. Below in figure 2 outlines RPB outcomes (CVIHSC, 2021).



Figure 2. RPB Outcomes Cardiff & Vale

1.2. The Regional Innovation Co-ordination Hub

The Cardiff and Vale Regional Innovation Coordination (RIC) Hub has been established to coordinate and align research, innovation, and improvement activity across the Cardiff and Vale of Glamorgan region. The Cardiff and Vale RIC Hub will bring together research, innovation and improvement activity from across health and social care systems in Cardiff and Vale, as well as Third Sector and Academic domains, into one space to make information easily available for stakeholders. This aims to drive the health and social care RII agenda in the region, whilst also reducing duplication and promoting the wider spread of successful interventions regionally. In turn, this holds potential to support more efficient use of resources and improve health and care services in Cardiff & Vale, ultimately driving better health population health outcomes.

The RIC Hub also links and shares good practices of health and social care RII activity and service delivery across Wales through a network of seven other RIC Hubs aligned with the Regional Partnership Boards in Wales and three RIC leads in Public Health, the Welsh Ambulance Service and Velindre Cancer Care.



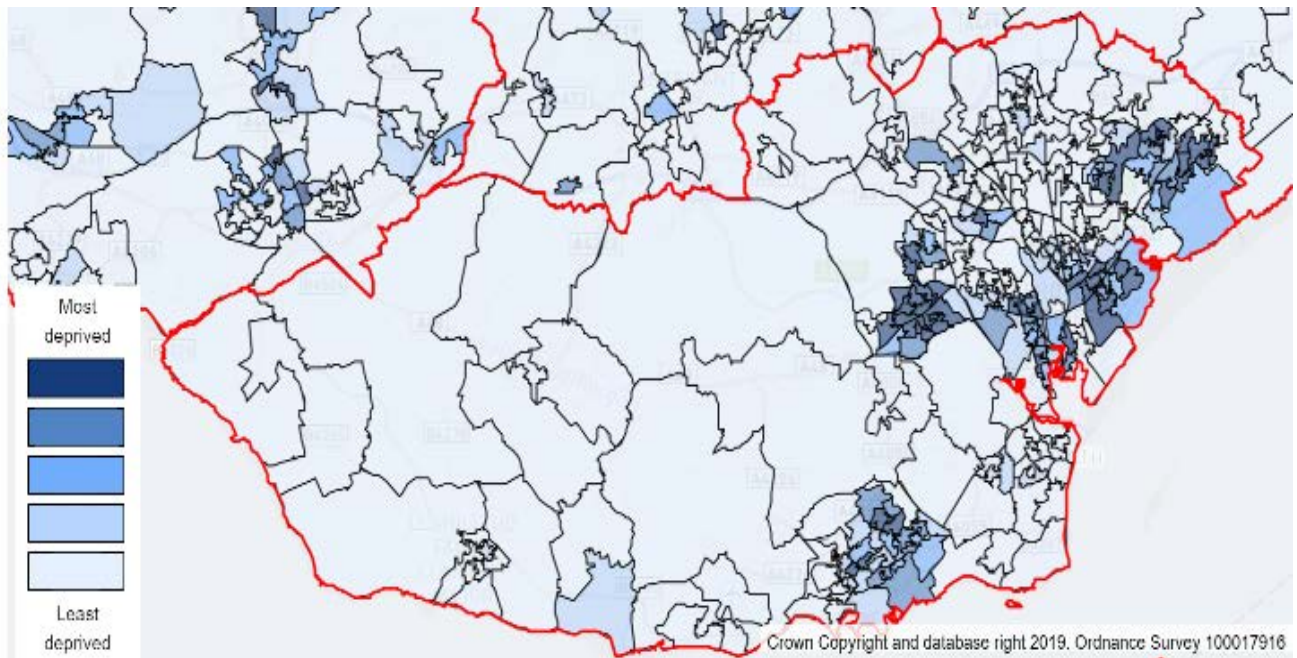
1.3. Cardiff & Vale Demographic Context

The Cardiff & Vale RPB and RIC Hub cover one of the largest population per capita in all the seven health board regions with a total of 369,369,202 (2020) in Cardiff and 135,295 (2020) in Vale of Glamorgan (Stats Wales, 2022).

Cardiff & Vale is mainly an urban environment, with surrounding semi-rural environments, and rural areas, which allows for unique benefits and challenges. A key challenge in the region is the variation of different cultures and languages and variety of classes all situated in the region (PHW, 2019). Cardiff & Vale also face an ageing population demographic for ages 85 years and over, with an increase of 15% forecasted over the next 5 years and almost 40% in 10 years (CAVUHB, 2019). The below map (Figure 3) depicts the demographic deprivation for Cardiff & Vale (WIMD, 2019).

Cardiff & Vale see significant health inequalities, with a huge variation across people who smoke for example which is between 12% and 31% in Cardiff, with similar patterns in physical activity and reduced uptake in child vaccinations in the more disadvantaged areas (CAVUHB, 2019). Finally, over two thirds of people in the area do not eat sufficient fruit and vegetables, with over half of adults overweight or obese (CAVUHB, 2019). This can be partly down to disadvantaged areas not being able to afford food, with the increasing costs of living and low wages (CAVUHB, 2019).

Figure 3 shows the difference in deprivations in Cardiff & Vale (WIMD, 2019)



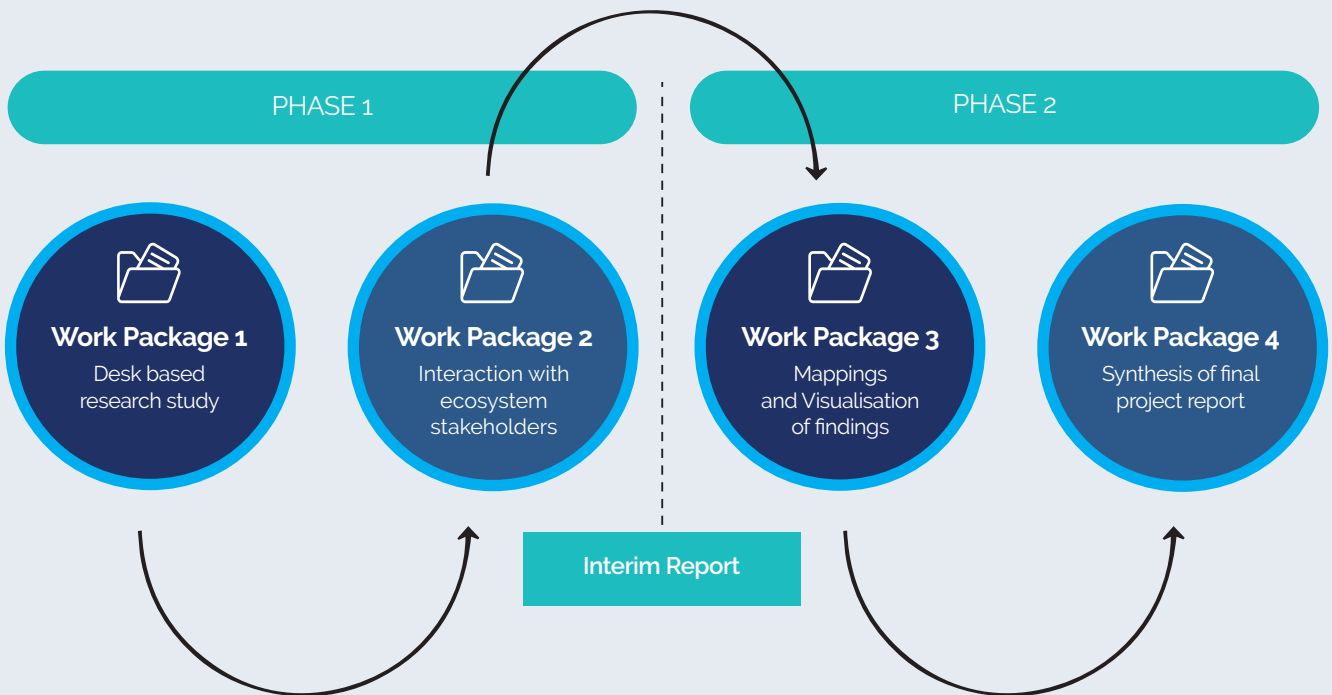
2.0. Study Aims and Methodology

The primary objective of this study is to provide insight and understanding in relation to the health and social care RII landscape within the Cardiff & Vale Regional Partnership Board programme area, including assets and activities being undertaken within Cardiff University, and The University of South Wales through their strategic relationships.

A comprehensive examination of the Health and Social Care RII landscape in Cardiff & Vale was performed, the research study adopted a systematic approach to its investigation

To achieve this, a two-fold reporting structure was designed. This involved identifying regional RII assets (teams, bodies, or organisations) and activities (research, improvement, or innovation projects) and subsequently providing granularity by further sub categorising these assets and activities into sectoral facets, including Primary and Community Care (Health), Secondary Care (Health), Social Care, Academia, Third Sector and Other Bodies. Having defined a clear categorisation structure and appropriate search strategy, the study was then sub-divided into four related work packages, as detailed below in Figure 4 and detailed further in the subsequent text.

Figure 4: Diagram detailing the Systematic Methodological Approach of the Study





Work Package 1.1: Desk Based Research

- Desk based research using Framework 1 to identify assets within the region that align with the defined scope.
- Desk based research to define a specific set of external (pan Wales) stakeholders that have RII interests or activity within the region (Public and Third Sector).



Work Package 1.2: Desk Based Research

- Desk based research using Framework 2 to identify activities being undertaken within the region by the internal assets defined within Work Package 1.1. that align with the determined scope.
- Desk based research to define activities being undertaken by the external (pan Wales) stakeholders that had previously been defined in Work Package 1.2.



Work Package 2: Interaction with Ecosystem Stakeholders

- Design of a research survey and distribution to assets across all sectoral groups identified in Work Package 1.1.
- Engagement with stakeholders via virtual or face to face meetings to gain qualitative insight building upon survey findings.

At this stage, an interim report will be presented and additionally insight and learning gained from Phase One (detailed in the preceding section) of the research study will be used to further define the ambitions and structure of Phase Two.



Work Package 3: Analysis, Mapping and Visualisation of Findings.

- Collation of data and visual analysis presenting findings in geographic form.
- Analysis of geographic data based on themes, research clusters and activity.
- Analysis of qualitative data and desk-based findings.



Work Package 4: Synthesis of Final Project Report.

- Production of the final research report including major findings and relevant analysis
- Dissemination of the final report including major findings and relevant analysis.
- Presentation of final report including major findings and relevant analysis.

The following section of this report describes several emerging findings and opportunities from the research study. Related case studies are presented to provide further context and insight in relation to the Cardiff & Vale RII landscape across the sectoral domains. These case studies detail regional RII assets and related RII activities and include evidence of new models of health and care service provision, innovative approaches to workforce re-design, basic and applied health and social care research, innovative approaches to integrated working and sharing of best practice and the design and implementation of new products, processes, and services. Analysis of the findings and case studies outlined, alongside further data collected throughout the research, including qualitative accounts from both regional and external stakeholders, will then be comprehensively reviewed.

3.0. Summary of Emerging Findings

Overarching Research Findings:

- There is an abundance of opportunity for continued activity from the Cardiff & Vale RIC Hub and to play a role in overseeing and effectively managing RII activity across Health and Social Care domains in Cardiff & Vale. Such provision could reduce RII complexity at a project, organisational and ecosystem level by supporting, communicating and co-ordinating RII activity in the Cardiff & Vale region.
 - Roles that can be continued to be carried out and supported by the RIC Hub include: 'Identify good practice across Cardiff & Vale so that promising RII activity can be upscaled and spread'; 'Provide a consistent contact point for the organisation to engage with national innovation and industry engagement initiatives/networks'; 'Import good practices from other regions/countries' and 'Export good practice to other regions across Wales'.
 - There might also be an opportunity, due to the quantity of successful research conducted in Cardiff & Vale, to build on the region's strengths by increasing opportunities to assist with collaborative research activities in other Welsh regions.
- There appears to be an opportunity for the RIC Hub and wider (internal and external) partners to define an 'end to end system of support' in the region across both Health and Social Care domains, which will require engagement with bodies identified in this report and others outside the Cardiff & Vale region to define the organisational purpose, role, remit, and strengths to support this.
 - Considering the above points, there is opportunity for regional partners to further strengthen links and collaborative RII and learning activities with partners from academic institutions. This might include stakeholders in Cardiff & Vale exploring opportunities to collaborate further with academic RII support programmes such as Accelerate, CEMET and CEIC.

Research, Innovation and Improvement Capacity, Knowledge and Skills:

- In relation to a lack of time and capacity across the Health and Social Care workforce to undertake RII activity, an opportunity exists to continue the development of a regional environment and culture that is conducive to promoting and supporting RII activity. By designing and implementing interventions such as attractive intellectual property (IP) incentives and greater recognition and reward for RII activity across the Health and Social Care, there lies potential to tackle current workforce challenges, doing so might offer existing staff greater capacity to pursue RII activities.
- On a more immediate basis, there are opportunities for Cardiff & Vale UHB and wider partners to seek further engagement with existing RII support programmes across Wales such as the Bevan Commission innovation programmes, The Primary Care Pacesetters Programme, Accelerate, AGOR-IP, CEIC and CEMET. Such programmes provide in-kind time, support, and academic expertise to support RII activity, which thus might reduce the time and capacity challenges faced by the Health and Social Care workforce in Cardiff & Vale.
- There might also be scope for the Cardiff & Vale RIC Hub along with wider partners to further exploit other RII knowledge creation and transfer mechanisms such as Welsh Government's Smart Partnership and Innovate UK's Knowledge Transfer Partnerships (KTP) opportunities. In addition, there lies further opportunity to engage with the KESS II (Knowledge Economy and Skills Scholarships) programme, which supports collaborative research projects, part funding PhD and master's students.
- To support Health and Social Care workforce knowledge and skills gaps, there is an opportunity to embed RII training modules as a core element of workforce training programmes.
- There are opportunities to establish relationships and shape the trajectory of newly emerging RII knowledge and skills-based support programmes, such as the Intensive Learning Academy (ILA) and the Circular Economy Innovation Communities (CEIC) programmes. Furthermore, greater engagement with existing social care related national research programmes such as the ENRICH network and DEEP programme, might also support RII capabilities.
- There could be opportunities to replicate or expand upon examples of successful RII support initiatives across the region by working alongside partners such as the Bevan Commission to further develop the Bevan Exemplars programme providing greater support to Social Care and Third Sector innovation projects.
- There might also be an opportunity to expand upon successful approaches applied by the Research Capacity Building Collaboration (RCBC) Wales. This approach is currently limited to supporting nursing and allied healthcare professionals yet might possess the potential to be expanded to support and engage health and care professionals in RII related activities more broadly.

Research, Innovation and Improvement Processes, Infrastructure and Resources:

- There are opportunities to further develop RII infrastructure across Local Authority and Social Care domains, starting by further developing leadership roles and wider team structures within such organisations with a specified remit of supporting RII activity across Cardiff & Vale.
- There is an opportunity to develop an integrated, cross-sectoral database for knowledge management and reporting, enabling all partners to understand Health and Social Care RII activity ongoing across the Cardiff & Vale region easily and effectively. Potential benefits of this might include reduced duplication, dissemination of information and improved collaborative cross-sectoral working.
- Building upon the momentum created by Welsh Government ICF monies, there is opportunity to develop long-term, sustainable integrated RII arrangements across the Cardiff & Vale region. This might include developing an integrated Health and Social Care strategy specifically focussing on RII, whilst there may also be scope to develop shared sustainable funding mechanisms to provide a greater balance of resource and support across all partners throughout the Cardiff & Vale RII ecosystem.
- There is further opportunity to develop a central toolkit or set of resources to support RII across all aspects of the Health and Social Care ecosystem in Cardiff & Vale. This toolkit might provide uniform (pan-Wales, cross-sector) definitions of the terms Research, Innovation and Improvement, basic theoretical and practice related principles underpinning RII activities, RII process or flow diagrams to provide further understanding along with Innovation Management Tools to identify, measure and support RII opportunities. Value might also lie in developing a common framework for the evaluation of interventions to assess the impact and share learning.



Research, Innovation and Improvement Knowledge and Skills

- In relation to a lack of time and capacity across the Health and Social Care workforce to undertake RII activity, an opportunity exists to continue the development of a regional environment and culture that is conducive to promoting and supporting RII activity. By designing and implementing interventions such as attractive intellectual property (IP) incentives and greater recognition and reward for RII activity across the Health and Social Care, there lies potential to tackle current workforce challenges, doing so might offer existing staff greater capacity to pursue RII activities.
- On a more immediate basis, there are opportunities for Cardiff & Vale UHB and wider partners to seek further engagement with existing RII support programmes across Wales such as the Bevan Commission innovation programmes, The Primary Care Pacesetters Programme, Accelerate, AGOR-IP, CEIC and CEMET. Such programmes provide in-kind time, support, and academic expertise to support RII activity, which thus might reduce the time and capacity challenges faced by the Health and Social Care workforce in Cardiff & Vale.
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- There might also be an opportunity to expand upon successful approaches applied by the Research Capacity Building Collaboration (RCBC) Wales. This approach is currently limited to supporting nursing and allied healthcare professionals yet might possess the potential to be expanded to support and engage health and care professionals in RII related activities more broadly.

Research, Innovation and Improvement Ecosystem

- There is potential to promote and support RII activities across Health and Social Care domains organically in Cardiff & Vale by developing regional communities of practice. Such communities might leverage the knowledge and expertise of experienced members of the workforce to drive a peer-support based approach to build Health and Social Care RII capacity. These community leaders might also be positioned as regional RII champions, providing a sense of ownership from which a wider culture towards RII activity across Cardiff & Vale might be developed.
- COVID-19 has increased opportunities for innovations and improvements to occur in various fields of Health and Social care. This has allowed for streamlining of processes to improve the experiences of patients and staff within the NHS.
- There is potential for further scope to expand on engagement with other regional bodies and initiatives to support and improve that builds upon the established pan-Wales RIC Hub networks and innovation lead groups.



4.0 Primary and Community Care

Primary Care services act as the first point of contact and the major interface between the public and many health and care services. In Wales, interaction with primary care services accounts for more than 90% of the Welsh population's contact with NHS Wales (Primary Care One, 2020). Services included under the umbrella term of Primary Care can include General Practice, Pharmacies, Opticians and Dental Surgeries, amongst others including practice or community nursing and community midwifery teams.

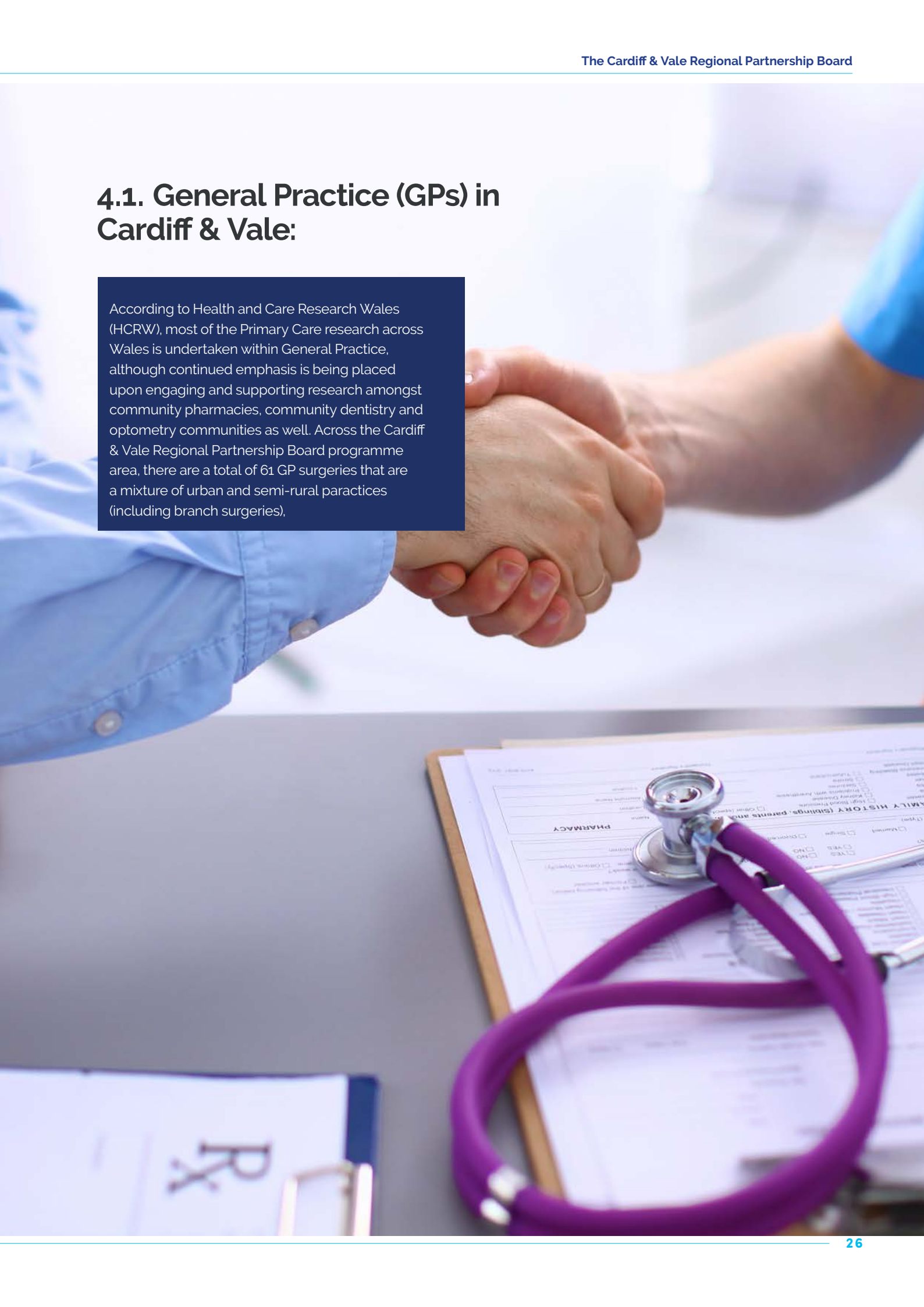
In Wales, approaches to the delivery of primary care services are changing. The 'Primary Care Model for Wales' has recently been introduced to ensure local services work together more effectively and to improve the quality of care such services can offer to local communities. This new model of care has a multi-dimensional focus (Primary Care One, 2020) concentrating upon aspects including:

- A more preventative, pro-active, and coordinated care system that includes general practice and a range of services for communities.
- A whole-system approach that integrates health, local authority, and voluntary sector services, and is facilitated by collaboration and consultation.
- Technological solutions to improve access to information, advice and care, and to support self-care.
- Creating stronger communities by empowering people and giving them access to a range of assets, ranging from access to debt and housing advice to social prescriptions for gardening clubs and leisure centres.



4.1. General Practice (GPs) in Cardiff & Vale:

According to Health and Care Research Wales (HCRW), most of the Primary Care research across Wales is undertaken within General Practice, although continued emphasis is being placed upon engaging and supporting research amongst community pharmacies, community dentistry and optometry communities as well. Across the Cardiff & Vale Regional Partnership Board programme area, there are a total of 61 GP surgeries that are a mixture of urban and semi-rural paractices (including branch surgeries),



4.2. Wales Audit Office (2019) Review of Primary Care Services

In 2018, the Wales Audit Office undertook a review of Primary Care Services (Wales Audit Office, 2019) across the Cardiff & Vale Teaching Health Board region. The review set out to examine whether the Health Board was appropriately positioned to deliver targets relevant to the national vision for Primary Care in Wales. This included a specific focus on five core areas of the national plan for Primary Care, which are set out below (Wales Audit Office, 2019).

- Strategic planning: Is the Health Board effectively driving the implementation of the national primary care plan at a local level?
- Investment: Is the Health Board managing its finances to support transformation in primary care?
- Workforce: Is the Health Board well placed to deliver key aspects of the national primary care workforce plan?
- Oversight and Leadership: Does the Health Board have effective arrangements for oversight and leadership that support transformation in primary care?
- Performance: Is the Health Board effectively monitoring its performance and progress in implementing its primary care plan?

The review identified several strengths and weaknesses across primary care services in the region (for more information see (Wales Audit Office, 2019). Key findings and recommendations of the report, which have been drawn directly from the Wales Audit Office review, are outlined in the following section. These findings highlight opportunities for future research innovation and improvement related activities across the Primary Care domain which require ongoing attention and outline the scope and focus of said research and innovation.

"The Health Board has ambitious plans for primary care and is taking steps towards implementing key aspects of the national vision. However, financial pressures are making it difficult to redirect funds to primary care, workforce challenges are threatening the sustainability of services and national performance levels are generally worse than the rest of Wales"

(Wales Audit Office, 2019).

Wales Audit Office (2019) Review Key Findings

Table 1: Summary of Main Findings from (Wales Audit Office, 2019) Review into Primary Care Services across Cardiff and Vale University Health Board

Table 1: Summary of Findings from (Wales Audit Office, 2019) Review into CVUHB Primary Care Services in 2019.

Strategic planning:

- The Health Board's primary care plan is part of a wider strategy to move care closer to home. The plan aligns with the key elements of the national plan, although there is scope to strengthen consultation.
- The Health Board has supported all clusters to develop plans that feed into the overall primary care plan, but cluster maturity varies and representation from some stakeholders is limited

Investment:

- The format of the accounts makes it difficult to accurately calculate the Health Board's overall investment in primary care.
- The Health Board can point to some specific examples of shifting resources towards primary care, but the potential for large-scale systemic change is hampered by a range of barriers.
- The Health Board closely monitors cluster spending, but cluster leads have raised concerns about delayed financial decision making and problems securing funding to mainstream successful pilots.

Workforce:

- Workforce pressures are less acute than in other parts of Wales, but the Health Board's mapping does suggest a shortfall of GPs and an ageing nurse workforce.
- Unlike many parts of Wales, the Health Board is not directly managing any practices, although sustainability issues are increasing. The workload of the Health Board's GP Support Unit is mainly reactive to requests for help from individual practices. This means there is a risk that the unit only provides support to practices once they begin to experience significant difficulties.
- The Health Board has made progress with implementing multi-professional teams but there are some barriers to progress including limited evaluation of new roles.

Oversight and Leadership: The Health Board's leaders are experienced in primary care. performance is monitored at various levels and while primary care is increasing in profile, it is a lower priority than secondary care.

- Members of the Board and Executive Team are experienced in leading primary care while primary care is increasing in profile, it is still seen as lower priority than secondary care.
- Primary care performance and risks are reviewed at various levels, monitoring is hampered by a lack of data on some key aspects of primary care.
- GPs provide leadership to most clusters and these leads gave positive views about the Health Board's oversight, although there are concerns about the time available to lead the clusters.

Performance: Performance against national targets remains below the rest of Wales in many areas and some difficult challenges remain.

- Many aspects of the Health Board's primary care performance against national targets are worse than the Welsh average.
- A number of challenges remain including recruitment and retention issues, difficulties shifting resources, financial pressures and increasing demand and demand

Wales Audit Office (2019) Review Key Recommendations

In addition to the findings identified in Table 1, the (Wales Audit Office, 2019) review of Primary Care services in the Cardiff and Vale Teaching Health Board outlines several key recommendations. Those relating to Research, Innovation or Improvement activities are outlined in table 2 below.

Table 2: Recommendations (Wales Audit Office, 2019) Review into CVUHB Primary Care Services in 2019.

Strategic planning:

R1. The Health Board has developed an ambitious plan for primary care, but the plan does not consider the impacts of projected population growth as a result of housing developments in Cardiff. The Health Board should therefore revisit its primary care plan to ensure it includes specific actions to meet the needs of the projected population growth in Cardiff.

R2. The Health Board's plans for primary care have been developed with only limited consultation and collaboration with some key groups of stakeholders. The Health Board should therefore develop the necessary consultation and communications plans to ensure meaningful public and stakeholder engagement in any further development / refinement of its primary care plans.

Investment:

R3. While the Health Board recognises that it needs to shift resources from secondary to primary and community settings, it cannot demonstrate that this shift is happening. The Health Board should:

- a. Calculate a baseline position for its current investment and resource use in primary and community care.
- b. Review and report, at least annually, its investment in primary and community care, to assess progress since the baseline position and to monitor the extent to which it is succeeding in shifting resources towards primary and community care.

New ways of working:

R4. Whilst the Health Board is taking steps towards implementing some new ways of working, more progress is required to evaluate the effectiveness of these new models and to mainstream their funding. The Health Board should:

- a. Work with the clusters to agree a specific framework for evaluating new ways of working, to provide evidence of beneficial outcomes and inform decisions on whether to expand these models.
- b. Centrally collate evaluations of new ways of working and share the learning by publicising the key messages across all clusters.
- c. Subject to positive evaluation, begin to fund these new models from mainstream funding, rather than from the Primary Care Development Fund.
- d. Work with the public to promote successful new ways of working, particularly new alternative first points of contact in primary care that have the potential to reduce demand for GP appointments.

Primary care clusters:

R5. We found variation in the maturity of primary care clusters. The Health Board should:

- a. Review the relative maturity of clusters, to develop and implement a plan to strengthen its support for clusters where necessary.
- b. Review the membership of clusters and attendance at cluster meetings to assess whether there is a need to increase representation from local authorities, third sector, lay representatives and other stakeholder groups.
- c. Ensure all cluster leads attend the Confident Primary Care Leaders course.

Oversight of primary care:

R6. We found scope to improve the way in which primary care performance is monitored and reported at Board and committee level. The Health Board should:

- a. Ensure the contents of its Board and committee performance reports adequately cover primary care.
- b. Increase the frequency with which Board and committees receive performance reports regarding primary care.

4.3: CVUHB Intergrated Medium Term Plan Primary and Community Care:

CVUHB's Integrated Medium Term Plan (IMTP) 2019-2022 (see (CVUHB, 2019)) describes the regional approach to the delivery of primary and community care services in Cardiff & Vale, alongside wider health and care-related activities. The core priorities set out in this report are:

- Primary Care: sustainability and the further development of community services
- Unscheduled Care: delivering a resilient and high performing system.
- Planned Care: meeting standards
- Cancer Service: delivering the single cancer pathway and improved outcomes
- Achieving Financial Balance
- Mental Health: continue to transform and improve our services focusing on home first models (CVUHB, 2019).

The report goes into detail on points discussed and how they can be achieved. A significant part addresses 'R&D and Innovation' whereby it describes CVUHB ambitions when it comes to innovation. There has been an emphasis to develop their innovative capacities that are in line with policy agendas such as 'A Healthier Wales' and 'Innovation Wales Strategy'. Below is a spider diagram (Figure 5) showing the areas of growth with innovation occurring.



Figure 5: Innovation growth (CVUHB, 2019).

To achieve this innovation, certain areas will need to be addressed to maximise CVUHB potential to engage in these activities. They will be described below.

Partnership: Is critical to the delivery of these activities; Building targeted partnerships offer critical support; Continued collaboration with academia, such as the College of Biomedical and Life Science, Cardiff University and the Clinical Innovation Hub have supported the success of this strategy (CVUHB, 2019).

Engagement: with multi-national organisations including MSD, J&J, GE, Renishaw, Medtronic, Siemens, Invacare. Local partners support through the joint Medicentre. The UHB has also retained membership and strong relationship with MediWales. The UHB supported the planning process and re-purposing of the Life Science Hub (LSH), and the Chief Executive has joined the LSH board (CVUHB 2019).

Process: A key aspect to the health board's innovation system is the Innovation Multidisciplinary Team (iMDT). iMDT is in place to support health innovators and the health board in the development of ideas and Intellectual Property (IP). The iMDT also provides as a bridge between the Engineering department of Cardiff University and the Cardiff business School. They comprise of clinical entrepreneurs, an expert in CE Marking, Cedar and a commercial IP attorney. Significantly, any gaps identified, the groups can find the individual they need with their large networking capabilities. The iMDT has supported 73 projects (CVUHB, 2019).

Infrastructure: The development of the Cardiff Medicentre allows for ideas to flourish and is the home of the Cardiff Clinical Innovation Hub. This space allows support for the development of ideas through spinouts that are incubated, accelerated and graduated using a vast amount entrepreneurial experience. The centre is at 100% capacity with a growing list of prospective tenants (CVUHB 2019).

Resource: The success of Welsh European Funding Office (WEFO) Accelerate programme has enabled the Clinical innovation Hub, Cardiff University to recruit seven more experienced staff. With the project funding, this will act as a catalyst to support the health board's ability to commercialise ideas (CVUHB 2019)

Sharing Ideas: A significant part of innovation has been through shared learning and strengthening partnerships through celebrating success locally, regionally, nationally and internationally. This has been supported through increased collaboration between universities and the business community. Examples of this included two successful projects with South East Wales Academic Health Science Partnership (SEWAHSP); both with Welsh companies and Cardiff University. SEWAHSP has also shown close collaboration between neighbouring health boards across research, education and innovation. Furthermore, the 4th Cohort/2018 of the Bevan Exemplar has verified that joint working significantly improved the quantity and quality of applications and with 23 applications submitted by the health board, 16 were successful. Cardiff and Vale are working closely with the Deputy Director of the Bevan Commission to highlight previous successful exemplars that can inform health board projects (CVUHB 2019). Below table 3 gives some examples of successful projects (CVUHB, 2019).

The core priorities for 2019-22 are:

- Primary Care: sustainability and the further development of community services
- Unscheduled Care: delivering a resilient and high performing system
- Planned Care: meeting standards
- Cancer Service: delivering the single cancer pathway and improved outcomes.
- Achieving Financial Balance
- Mental Health: continue to transform and improve our services focusing on home first models (CVUHB, Intergrated Medium Term Plan 2019-2022, 2019).

Table 3: succesful outcomes of projetcs (CVUHB, 2019)

Action	Outcome	Measure
Dementia	3 co-produced projects associated with clinical/ health and/or wellbeing needs 2017 Whole system dementia innovation test bed developed	3 projects developed, awarded, delivered, and shared (completed) Madeline's Project Accelerated – linked to the Dementia Action Plan.
Integrated	Cardiff recognised as a centre of excellence for integrated diagnostics	Innovate UK - £19m bid – not successful Proposal developed for the Cardiff City Region deal 2019-21.
Stroke	Develop comprehensive research and innovation testbed	Support SHW Develop a dedicated comprehensive Stroke Innovation Maul 3x Value Based Innovation Projects by 2021.
Theatre Project	Develop an innovation operating theatre test bed.	Team developed • 2 x Projects scoped and delivery by 2021.

4.4: Primary and Community Care RII Activity:

To promote innovation and facilitate the delivery of the national primary care plan (Welsh Government, 2014), in 2015-2016 the Welsh Government established the national Primary Care Fund, which in 2016-2017, equated to investment of around £41 million (Wales Audit Office, 2019).

4.5 Primary Care Pacesetters Programme

Annually in Wales, £3.8 million of the £40 million Primary Care Fund is allocated to support the National Pacesetter Programme which was initiated in 2015. The Pacesetter Programme seeks to promote innovation and transformation across Primary Care settings by supporting Health Boards to test and evaluate "new and innovative ways of working to achieve the aims of the Primary Care Fund namely sustainability, improving access, and delivering more care in the community" (Primary Care One, 2021). Pacesetter projects are funded on a 2-3-year basis. To date, including the cohort due to start in April 2020, there have been a total of 53 different Pacesetter projects across Wales, which are broken down by year in Table 4.

Table 4: Pacesetter Programmes Pan Wales by Programme Year. (Source: Primary Care One, 2021).

Pacesetter Programme Year:	Number of Projects (Pan Wales):
2015	24*
2018	14
2020**	15

* Three projects were not allocated Pacesetter programme funding.

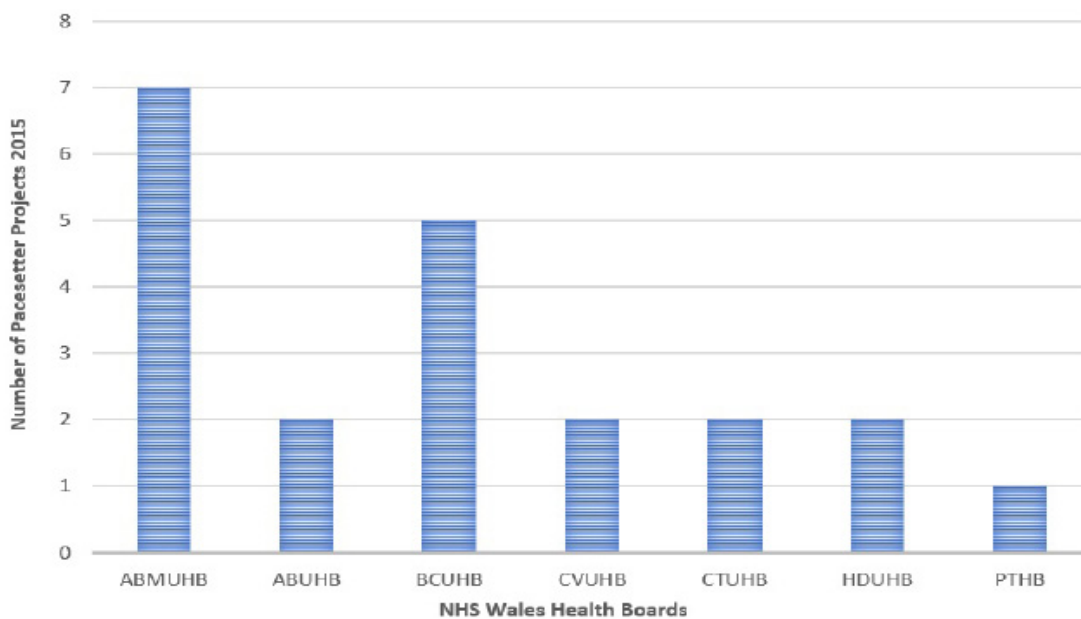
** Pacesetter Programme cohort due to start in April 2020.

4.5.1 CVUHB Pacesetter Projects 2015-2018 Cohort

In 2015, in total, twenty-four projects were identified as appropriate candidates for the pacesetter programme, although ultimately, three of these projects were not funded directly by the scheme (see University of Birmingham, 2018). Figure 2 provides a breakdown of projects funded by the scheme in the 2015-18 programme cycle (University of Birmingham, 2018). As is demonstrated in Figure 6, Abertawe Bro Morgannwg University Health Board (now Swansea Bay University Health Board following the realignment of NHS Wales Health Board boundaries) possessed the major share of Pacesetter Projects in the 2015-2018 programme cycle with seven projects.

This was followed by Betsi Cadwaladr University Health Board with five Pacesetter projects, and Aneurin Bevan University Health Board, Cardiff and Vale University Health Board, Cwm Taf University Health Board and Hywel Dda University Health Board, which all had two funded projects. Powys Teaching Health Board had one project within this cycle.

Figure 6: Pacesetter Programme 2015-18 Cohort Project Breakdown by NHS Wales Health Board



Regarding the two CVUHB pacesetter projects that spanned from 2015-2018, one project focussed on supporting the implementation of day treatment care pathways, and the other a pharmacist in practice-based Stoma Review clinic led by Spec. Stoma Nurse. Drawing on information gathered from Primary Care One (2021a), these projects are discussed below.

Support the implementation of day treatment care pathways

The Pacesetter project was set out from priorities identified by the cluster for a focused on unscheduled care to “develop a set of evidence-based pathways that will support patients more safely and closer to home” Reference Primary care cluster Primary Care One (2021a). The aims of the project focussed upon:

- Reducing secondary care bed days for ACS conditions
- Improving access to services closer to home
- Implementing proactive and evidence-based management in community settings

Pharmacist in practice-based Stoma Review clinic, led by Specialist Stoma Nurse

The second pacesetter project was set up “to establish practice-based Stoma Review Clinics in the community setting in conjunction with the Community Stoma Nurse”. Primary Case Cluster (2021b). The aims of this project focussed on improving patient knowledge of and use of any 'specified stoma appliance' by:

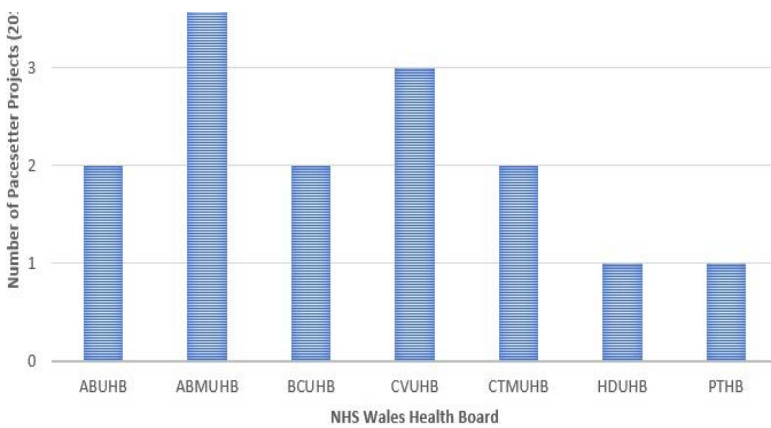
- Identifying how appliances are used by patients
- Identifying, discussing, and assisting in the resolution of poor or ineffective appliance use by providing advice and guidance on safe and appropriate storage, safe and proper disposal methods, and educating patients on medications that interfere with the function of the stoma



4.5.2 CVUHB Pacesetter Projects 2018-2020 Cohort

Between 2018-2020, there were a total of 15 Pacesetter projects funded across Wales (see Figure 10). In this cycle, three Pacesetter project was funded across the Cardiff & Vale Teaching Health Board region. As with the previous programme cycle, ABMU was again the leading health board in this domain, when considered by pacesetter project numbers, with four projects funded (see Figure 7). Information about the CVUHB project supported between 2018-2020 is detailed below, again drawing insight from Primary Care One (2021) and wider sources.

Figure 7: Breakdown of 2018-2020 Pacesetter Programme Projects by NHS Wales Health Board.



- A pharmacist led clinic will be piloted in a cluster to review patients on pain medication
- Links will be developed to enable the pharmacist to take a holistic view and refer patients where appropriate to other services e.g., addiction services, third sector support, community pharmacy, secondary care
- Relationships will be developed to ensure that cluster pharmacists, community pharmacy and secondary care pharmacy are also linked into this work so that a consistent approach and understanding is developed
- The practice will be engaged to agree to and develop practice policies to ensure a consistent approach to prescribing
- The work will be rolled out to other clusters as appropriate and as refined.
- Prescribing advisors (pharmacists) will be up skilled to expand their IP scope of practice into the area of pain, covering topics including:
 - o Therapeutics of pain
 - o Motivational interviewing
 - o Knowledge of and links with appropriate avenues for referral e.g., third sector opportunities, expert patient programme
 - o Expectation that scope will expand with experience (Primary Care One, 2021c).

Pain clinics utilising independent

The summary of the project is to trial and develop a pharmacist led clinic, in primary care, to review pain medication with the main aims of this are:

Collaborative Community Falls Pathway – To reduce the incidence of falls within Cardiff

“The key aim of the project is to test the approach used in Canterbury within the Cardiff and Vale area, working across partner organisations within Cardiff and Vale to develop and deliver a cohesive community response pathway/model to reduce the incidence of falls.” (Primary Care One, 2021).

Support the implementation of day treatment care pathways

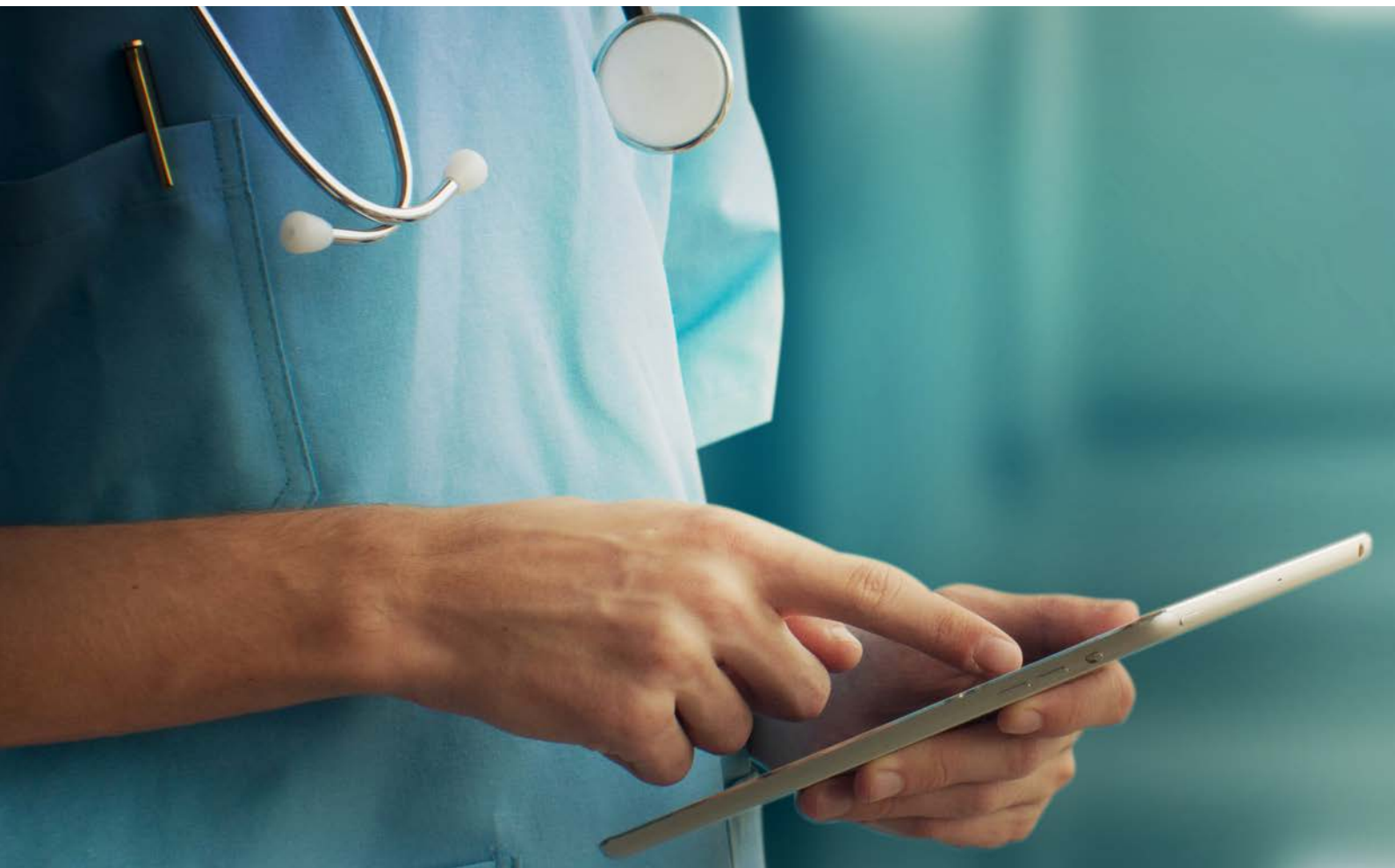
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- Identifying how appliances are used by patients
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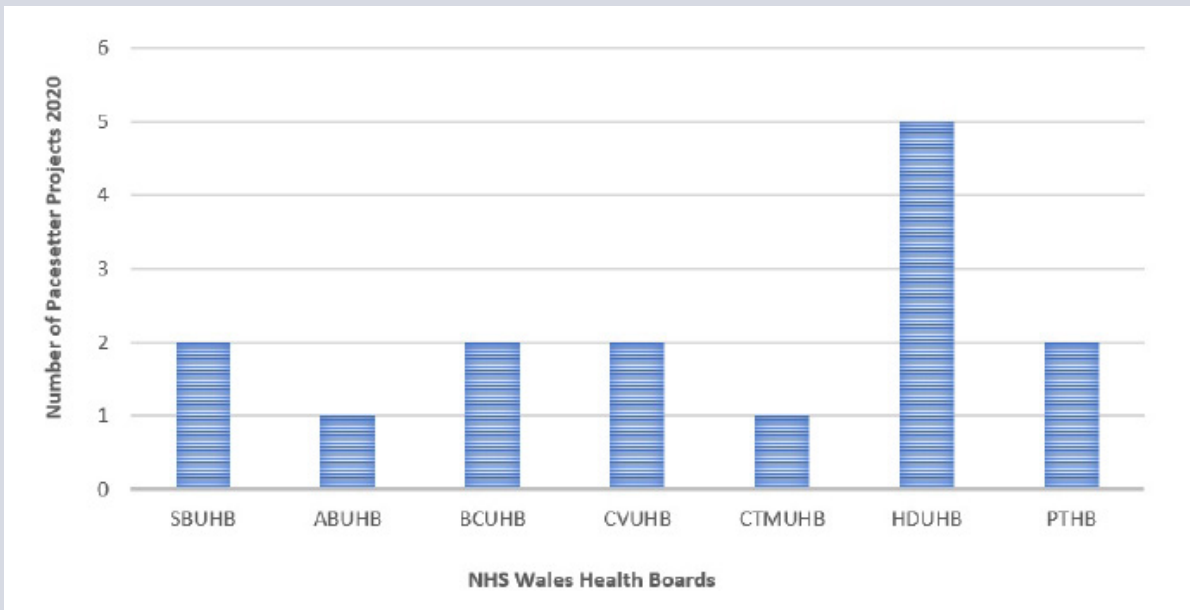


4.5.3 CVUHB Pacesetter Projects 2020-2022:

In the Pacesetter Programme cohort, which was due to commence in April 2020, there are a total of 15 Pacesetter Projects, with the breakdown by NHS Wales Health Board presented in Figure 8. In this programme cycle, PTHB has a total of 2 Pacesetter projects, with HDUHB representing the largest share of all Health Board projects across Wales with 5 projects.

Drawing upon information provided by Primary Care One (2020). The two Pacesetter projects from 2020-2022 will be discussed below, with reference to the available sources from Primary Care One (2020). The projects from CVUHB are Primary Care Academy and Embedding Quality Improvement in Primary Care.

Figure 8: Breakdown of 2020 Pacesetter Projects by Health Board (Data Source: Primary Care One, 2021)





PROJECT 1: Primary Care Academy

The pace setter project of the Primary Care academy is summarised as follows:

"The scheme aims to support qualified MDT professionals to transition to a primary care setting, through the transfer of existing knowledge, experience and skills (gained in a nonprimary care setting) through a robust training and mentorship programme for a period of a year within a GMS practice."

The main aims of the pace setter project include:

- Supporting general practice workforce development and GP sustainability
- Supporting specialty workforce development and resilience
- Developing joined up working between GP and Secondary care
- Improving skills in primary care
- Improving relationships between primary and secondary care
- Supporting GP resilience by offering more professionals variety (Primary Care One, 2020a).



PROJECT 2: Embedding Quality Improvement in Primary Care

The pacesetter project of embedding quality improvement in Primary Care is as follows:

The scheme will provide operational support to the GP CD Lead for Quality Improvement (currently being recruited to in Cardiff and Vale) to further embed quality improvement within Primary Care settings across Cardiff and Vale UHB.

The main aims are presented below:

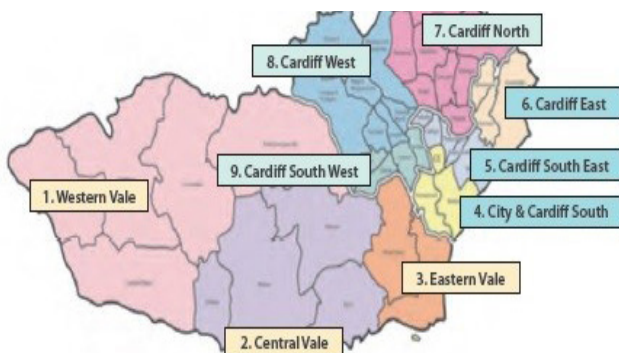
- Primary care contractor team members, clusters and community staff will receive appropriate Quality Improvement training Page 4 of 7
- Primary care contractor team members, clusters and community staff will be supported to take forward Quality Improvement programmes.
- Sharing outcomes from QI projects and how to embed QI in primary care settings

4.5.4 Conclusion to CVUHB Pacesetter Projects

Using insight drawn from the information presented above, it is clear CVUHB has shown consistent participation in the pacesetter projects from its inception, although there has been a slight drop off in pacesetter projects between 2020 and 2022.



Figure 9: Primary Care Clusters across Cardiff & Vale Teaching Health Board.



4.6 Primary Care Clusters and Related RII Activity

Primary health and care services are the first points of contact for individuals, accounting for approximately 90% of interaction between the public and NHS Wales. As such, they play a key role in improving and sustaining the health and wellbeing of the population. To promote more joined up working at a localised, regional and national level, while also supporting and encouraging transformation across Primary Care settings in Wales, Primary Care cluster-based approaches were introduced by the Welsh Government in 2014. These now 'sit at the heart' of the Primary Care Model for Wales (Strategic Programme for Primary Care, 2018).

The definition of a Primary Care Cluster provided by the Directors of Primary and Community Care in Wales (Primary Care One, 2020) is outlined below:

"A cluster brings together all local services involved in health and care across a geographical area, typically serving a population between 25,000 and 100,000. Working as a cluster ensures care is better co-ordinated to promote the wellbeing of individuals and communities."

In total across Wales, there are 64 Primary Care clusters, each serving local populations of between 30,000 – 100,000 people. Within the Cardiff & Vale RPB area (Cardiff & Vale University Health Board), there are a total of nine clusters, which include Western Vale, Central Vale, Eastern Vale, City & Cardiff South, Cardiff South East, Cardiff East, Cardiff North, Cardiff West, and Cardiff South West.

The following section of this report now provides an overview of wider RII activity reported by Primary Care Clusters across the Cardiff and Vale region, drawing upon information collated by Public Health Wales (2019). To support the reader, RII activities are initially categorised by Primary Care cluster and following this, projects are divided into core themes using Thematic Analysis approaches. Along with the cluster RII activity, an overview of cluster characteristics is also presented to give further context.

Cardiff City and South Primary Care Cluster: (Adapted from Public Health Wales, 2019)

Cluster Population:	63,414
Cluster Geography:	Urban location
Cluster Characteristics:	Cultural and ethnic vibrancy that brings challenges, variety in working classes, lower life expectancy, high prevalence of non-communicable conditions including diabetes
Cluster Practices:	Cardiff Bay Surgery, Bluetown Health Centre, Grangetown Health Centre, Saltmead Practice, Clare Road Medical Centre, Dr Anwar's Surgery

New Workforce Models

- Cluster development in Cardiff and Vale has introduced a pharmacist, frailty nurse and the Wellbeing 4U team (PHW, 2019).
- Employment of a cluster project support officer for increased communication between other clusters to occur for improved performance (PHW, 2019).

New Partnership Approaches

- Collaboration with Public Health Wales to improve childhood immunisation uptake (PHW, 2019).
- Working closely with UHB project management team to introduce first contact physiotherapy clinics to the cluster (PHW, 2019).

New Models of Service Delivery

- Clusters have been formed to identify patterns of morbidity and address inequalities in the region. (PHW, 2019).
- Clusters are proactively assessing the risks of diabetes in patients.
- Introduction of a community blood bone virus screening facility. (PHW, 2019).
- Providing literature in multiple languages that has promoted communication with specific patient groups (PHW, 2019).
- Specific signposting has been developed to encourage healthy living and lifestyle; this is seen as a long-term investment in mental and physical health of the cluster population (PHW, 2019).

New Technology

- Patients have been screened for BBVs. This has lessened the risk of liver disease in the region (PHW, 2019).

Cardiff East: (Adapted from Public Health Wales, 2019)

Cluster Population:	Approx. 57,000
Cluster Geography:	Urban area
Cluster Characteristics:	Ageing Population, Extreme Deprivation,
Cluster Practices:	rynderwen (and Minister Road) Surgery, Llanedeyrn Health Centre, Llanrumney Health Centre, Rumney Primary Care Centre, Willowbrook Surgery

New Workforce Models

- Mental health practitioners run clinics in every practice (PHW, 2019).
- Introduction of Contact Physiotherapy that has been delivered via a hub model (PHW, 2019).
- Cluster pharmacist available in every practice, who conduct polypharmacy and hypertension reviews (PHW, 2019).
- Carer champions in every practice (PHW, 2019).

New Models of Service Delivery

- Improved sustainability models to help practices struggling with sick leave, winter pressures etc. (PHW, 2019).
- Chronic Obstructive Pulmonary Disease (COPD) community pulmonary rehabilitation course running 4 times a year (PHW, 2019).
- Cluster development has seen increased pathways to be followed that include Heart failure pathway, Dementia care pathway, Atrial fibrillation (PHW, 2019).
- A focus of Advanced Care Planning will encourage patients to get decisions recorded

New Partnership Approaches

- Collaboration with Public Health Wales to improve childhood immunisation uptake (PHW, 2019).
- Working closely with UHB project management team to introduce first contact physiotherapy clinics to the cluster (PHW, 2019).

New Technology

- Introduction of QR codes in all practices. This supports patients with information, which generates 600-800 hits a month (PHW, 2019).

Cardiff North: (Adapted from Public Health Wales, 2019)

Cluster Population:	102,687
Cluster Geography:	Urban and rural mix
Cluster Characteristics:	Largest cluster in Wales.
Cluster Practices:	Birchgrove Surgery, Crwys Medical Centre, Cynod Medical Practice, Llanishen Court Surgery, North Cardiff Medical Centre, Roath House Surgery, St Isan Road Surgery, St Davids Medical Centre, The Penylan Surgery, Whitchurch Road Surgery

New Workforce Models

- Practice based pharmacists that provide all medication reviews, Anticoagulation reviews, deprescribing reviews, vaccinations, hypertensive monitoring, searches and devising protocols, polypharmacy care home reviews (PHW, 2019).
- Introduction of Physiotherapists for every practice, which offer appointments for acute musculoskeletal issues (PHW, 2019).
- Primary care nurses have been introduced to support older people (PHW, 2019)..

New Partnership Approaches

- Cardiff North Cluster incorporates 14 Dental Practices, 14 Optometrists, 19 Pharmacies, 3 District Nursing Teams and Health Centres in Rhwbina, Pentwyn and Llanishen (PHW, 2019).

New Models of Service Delivery

- Development of Stay Steady Clinics, which is Pacesetter funded. Reduces falls in higher risk patients (PHW, 2019).
- Local Development Plan (LDP) to support population growth of 13,000 (PHW, 2019).
- Mental health support offered in all practices (PHW, 2019).
- Development of distribution of repeat prescribing protocols (PHW, 2019).

New Technology

- Introduction of "shared drive" for storage of policies, procedures, letters and minutes for all clusters (PHW, 2019).

New Technology

- A cluster pharmacist has been awarded a Bevan Exemplar to test Alive Cor technology. This will help early detection of atrial fibrillation, which is now available in all cluster practices (PHW, 2019).

Cardiff South East: (Adapted from Public Health Wales, 2019)

Cluster Population:	63,414
Cluster Geography:	Urban location
Cluster Characteristics:	Cultural and ethnic vibrancy that brings challenges, variety in working classes, lower life expectancy, high prevalence of non-communicable conditions including diabetes
Cluster Practices:	Cardiff Bay Surgery, Bluetown Health Centre, Grangetown Health Centre, Saltmead Practice, Clare Road Medical Centre, Dr Anwar's Surgery

New Workforce Models

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- Introduction of a community blood bone virus screening facility. (PHW, 2019).
- Providing literature in multiple languages that has promoted communication with specific patient groups (PHW, 2019).
- Specific signposting has been developed to encourage healthy living and lifestyle; this is seen as a long-term investment in mental and physical health of the cluster population (PHW, 2019).

New Technology

- Patients have been screened for BBVs. This has lessened the risk of liver disease in the region (PHW, 2019).

Cardiff South West: (Adapted from Public Health Wales, 2019)

Cluster Population:	Approx. 66410
Cluster Geography:	Urban area
Cluster Characteristics:	High Deprivation, Ethnic Diversity, strong community links, innovative cluster.
Cluster Practices:	Ely Bridge Surgery, Kings Road Surgery, Meddygfa Lansdowne Surgery, The Taff Riverside Practice, Woodlands Medical Centre, Greenmount Surgery, Meddygfa Canna Surgery, Llandaff Fields Medical Practice, The Surgery St Davids Court, Westway Surgery.

New Research Projects

- The cluster has supported two fellows to develop innovative models of care working with child health and social prescribing (PHW, 2019).
- Bevan Exemplar investigated new communication methods to support recruitment and retention in Primary Care (PHW, 2019).
- Pilot studies looking into social prescribing models were presented at the first International Social Prescribing Research Conference (PHW, 2019).
- Further investigation will take place by RESPECT on social prescribing using time credits (PHW, 2019).

New Research Projects

- The cluster was also part of a DWP Research project alongside that of the University of Nottingham and the Royal College of Occupational Therapists. The project's goal was to examine the 'effectiveness of an OT vocational clinic in a Primary Care setting to support people to return to and stay in work and improve health and wellbeing'(PHW, 2019).

New Models of Service Delivery

- Cluster has improved uptake on Bowel screening, through local health promotion events (PHW, 2019).

New Partnership Approaches

- Collaborative work with Public Health Wales supported uptake in Bowel screenings (PHW, 2019).
- The promotion of physical exercise through 'Next Bike' on prescription (PHW, 2019).
- Increased partnership with patients

Cardiff West: (Adapted from Public Health Wales, 2019)

Cluster Population:	55,488
Cluster Geography:	Urban Area
Cluster Characteristics:	Low rate of elderly demographic, diverse workforce, fast pro-jected population growth.
Cluster Practices:	Whitchurch Village Practice, Llwyncelyn Practice, Bishops Road Medical Centre, Llandaff North Medical Centre, Danescourt Surgery, Radyr Medical Centre, Llandaff & Pentyrch Surgery, Fairwater Health Centre

New Partnership Approaches:

- Improved collaboration across the 8 practices, through standardised protocols (PHW, 2019).
- Full engagement of member in cluster meeting, through doing something once and sharing across all teams (PHW, 2019).
- Collaboration with Cardiff South and Wellbeing Co-ordinators (PHW, 2019).

New Models of Service Delivery

- NEXT bikes scheme to promote healthier lifestyles (PHW, 2019).
- Community Flu event won an award by getting 2000 patients vaccinated over 2 events in 2018 (PHW, 2019).
- ACE tier 0 mental health support (PHW, 2019).
- Musculoskeletal (MSK) gone live in the cluster (PHW, 2019).



New Workforce Models:

- Standardised staff training for all staff (PHW, 2019).
- The Cluster is promoting GP update sessions (PHW, 2019).

Central Vale: (Adapted from Public Health Wales, 2019)

Cluster Population:	64,175
Cluster Geography:	Urban and Rural area
Cluster Characteristics:	Area of Deprivation, larger increase in population predicted.
Cluster Practices:	Court Road Surgery, Vale Group Practice, The Practice of Health, The Waterfront Medical Centre, Highlight Park Medical Practice, Sully Surgery, West Quay Medical Centre

New Workforce Models:

- Funding to support GPs to embed staff and enable robust clinical reviews (PHW, 2019).
- Development and funding of pharmacists to improve medicine safety (PHW, 2019).

New Partnership Approaches:

- Leading the way for tier 0 service with MIND to support patients' mental health issues (PHW, 2019).
- Collaboration with pharmacists for improved working (PHW, 2019)

New Models of Service Delivery:

- Cluster leading primary mental health liaison service (PHW, 2019).
- MSK service was pioneered in the cluster that saw 4,113 patients between September 2016 – April 2019 (PHW, 2019).

Eastern Vale: (Adapted from Public Health Wales, 2019)

Cluster Population:	36,783
Cluster Geography:	Urban area
Cluster Characteristics:	Large elderly demographic, growing population, reduction in GP practices.
Cluster Practices:	Penarth Healthcare Partnership, Dinas Powys Medical Centre, Redlands Surgery, Albert Road Surgery.

New Models of Service Delivery

- Medicine management introduced in the cluster which aims to: Improve communication, aid patient safety and compliance, reduce wastage, safety audits, quality improvement, Antibiotic prescribing (PHW, 2019).
- Clear focus on elderly demographic which consists of making all staff trained and aware of dementia. Also, dementia friendly reading services through the library introduced (PHW, 2019).
- Increased preparations over the winter months, to reduce hospital admissions (PHW, 2019).

New Workforce Models

- Cluster Pharmacists to support and educate care home staff, medical reviews. Stop/start meds. Suitable preparations, reconciliation meds post discharge (PHW, 2019).
- Development of cluster nurses to carry out reviews, falls assessment, future care planning and admission avoidance (PHW, 2019).
- Specialty employed flu nurses (PHW, 2019).
- Educational 'cluster fayre' for all staff (PHW, 2019).

New Partnership Approaches

- Collaborative working with community Pharmacists (PHW, 2019).
- Cluster collaboration with third sector, armed forces, FACT and opticians (PHW, 2019).

New Technology:

- Introduction of Vision 360 to support cluster working (PHW, 2019).
- Improve IT for data collection (PHW, 2019).
- IT specialists employed across the cluster (PHW, 2019).
- QR pods introduced to aid patients and increased awareness of screening and local services (PHW, 2019).

Western Vale: (Adapted from Public Health Wales, 2019)

Cluster Population:	28,289
Cluster Geography:	Rural area
Cluster Characteristics:	Ageing Demographic, Large geographical area, High number of patients remaining at
Cluster Practices:	Cowbridge & Vale Medical Practice, Western Vale Family Practice, Eryl Group Practice.

New Workforce Models

- Increased communication between senior management teams (PHW, 2019).
- MDT events to support primary and secondary teams with dementia (PHW, 2019).

New Partnership Approaches

- Increased cluster partnerships through collaboration between all practices (PHW, 2019).
- Lessons learnt between clusters shared between practices for a more standardised service (PHW, 2019).

New Models of Service Delivery

- Cluster development of the Madeline project that secured £147,000. Vale working towards Dementia Friendly Status, which is being achieved through increased dementia diagnosis (PHW, 2019).
- Mental Health - Tier 0 MIND achieved. MHLS and MSK both live within the cluster (PHW, 2019).
- This cluster achieved the highest uptake in childhood and adult influenza vaccination (PHW, 2019).



4.7: The MasterMind Project:

The MasterMind project (Management of mental health disorders Through advanced technology and services – telehealth for the MIND) was a €14m European Union-funded project that ran from 2014 – 2017 (European Commission, 2017). The project aimed to improve patients access to high-quality mental health treatment for conditions such as depressions by using technology.

The MasterMind project implemented two technology-enabled mental health services across participating regions including Cardiff & Vale in Wales. Some regions implemented both services, whilst others implemented just one of the two. These services included:
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The MasterMind project implemented two technology-enabled mental health services across participating regions including Cardiff & Vale in Wales. Some regions implemented both services, whilst others implemented just one of the two. These services included:

Computerised Cognitive Behavioural Therapy (cCBT).

"cCBT can include services such as computerised treatment at home or in community locations, preparation before inpatient treatment, long-term monitoring and/or monitoring after discharge... cCBT for depression has a number of advantages which include low threshold access and proven effectiveness." (European Commission, 2017).

Collaborative Care Facilitated by Video Conferencing (ccVC).

"The collaborative care services in MasterMind aim to provide equal access to specialised knowledge for healthcare providers, increased level of competence for GPs and home care as well as increased quality of care through knowledge sharing and support from specialists. In some settings, the GP and psychiatrist will have video consultations discussing each individual patient to ensure knowledge sharing and specialist guidance for the GP. In other settings, the video conference will also allow for municipal home care services to be involved or for the patient to speak directly to the psychiatrist joint setting with the GP, or to receive follow-ups via video conference instead of face-to-face consultations." (European Commission, 2017).

The project aimed to evaluate the impact of these technology-enhanced services on a programme cohort of around 5,000 patients across the participating regions. The project also aimed to identify both the barriers and success factors related to the implementation of such services in varying political, technical and socio-economic contexts.

The final evaluation of the project (European Commission, 2017) reported high levels of patient satisfaction in relation to both ccVC and cCBT services, as well as positive perceptions of the service's integration. Patients reported high-quality treatment alongside treatment options aligning with their desires. The evaluation suggested that 'the majority of patients' depressive symptoms decreased throughout the project' with improved clinical outcomes reported, although this was not the case for all. Healthcare professionals expressed general satisfaction with the services and suggested that they would re-use these approaches, although they did suggest the approach was more effective for patients with mild-moderate symptoms. A similar approach to the MasterMind project might thus be worthy of consideration in relation to supporting health and care services deal with the effects of the COVID-19 pandemic on the population's mental health status

4.8. Wales School for Social Prescribing Research (WSSPR):

The Wales School for Social Prescribing Research (WSSPR) is a virtual pan-Wales body co-chaired by Professor Caroline Wallace (University of South Wales) and Dr Sally Rees (Wales Council for Voluntary Action), which is embedded within the working of the PRIME Centre Wales. The aim of the WSSPR is to develop a social prescribing evaluation methodology for Wales, building upon progress that has been made in this area by its sister network the Wales Social Prescribing Research Network (WSPRN). To achieve this ambition, the school has several ambitions, which are outlined in the following body of text, having been drawn from the WSSPR (2021).



SPRING: Social Prescribing in Mental Health Study.

- Use a translational research model to describe, order and organise a multi-phase programme of applied research and evaluation.
- Increase research awareness and engagement with citizens and stakeholders.
- Translate research findings into practice, policy and education.
- Build research capacity for social prescribing across sectors.

- SPRING is a mixed-methods waitlist trial that aims to evaluate a new social prescribing service delivered by Mind Cymru in four communities in Wales. The study aims to explore the impact of the social prescribing intervention on well-being, quality of life and loneliness using quantitative and qualitative methods (WSSPR, 2021).
- Partners: USW, Welsh Institute for Health and Social Care (WIHSC), Mind Cymru, PRIME Centre Wales, CTMUHB, BCUHB, PTUHB.

Both the WSSPR and the WSPRN are highly RII active across the broad spectrum of the Social Prescribing domain. Projects are categorised into one of three core domains, including Evaluation, Social Value and Education. Partners from across the Cardiff & Vale Regional Partnership Board area are engaged in a number of these projects, some of which are outlined below, with the information provided by WSSRR (WSSPR, 2021).

PROSPECT: Mental Health through Social Prescribing Project.

- PROSPECT is a mixed-methods waitlist trial that aims to evaluate a new social prescribing service delivered by British Red Cross in two communities in Wales. The study aims to explore the impact of the social prescribing intervention on patient well-being and quality of life using quantitative and qualitative methods (WSSPR, 2021).
- Partners: USW, WIHSC, British Red Cross, PRIME Centre Wales, ABUHB, HDUHB.

Social Prescribing Learning Needs:

Using consensus methods, researchers identified training needs that social prescribers felt were important and available or not available, and where these fit on a career timeline of a person delivering social prescribing.

Partners: University of South Wales, PRIME Centre Wales, Cwm Taf Morgannwg University Health Board, Betsi Cadwaladr University Health Board, Aneurin Bevan University Health Board, Wales Council for Voluntary Action, Wrexham Glyndŵr University.

Furthermore, the WSSPR has also authored or co-authored a few peer-reviewed academic publications alongside wider reports, some of which are detailed below in Table 4.

Table 4: Selection of Publications from WSSPR

Authors:	Publication or Report Title;
Elliot et al. (2020)	A participatory mixed-methods evaluation of a falls awareness programme.
Elliot et al. (2020)	Developing a tool to measure social well-being in the context of social prescribing. A group concept mapping study.
Jones et al. (2020)	Social Return on Investment Analysis of the Health Precinct Community Hub for Chronic Conditions.
Wallace & Elliot (2019)	Wales Social Prescribing Research Network 2018 - 2019 Brief Summary of Activity.
Jones et al. (2019)	Evaluating the impact of a joint social care and NHS initiative to promote social participation and patient activation for older people in North Wales.

4.9. The Wales Centre for Primary and Emergency Care Research (PRIME)

The Wales Centre for Primary and Emergency Care Research (PRIME Centre Wales) is a pan-Wales research centre co-led by Cardiff University, Swansea University, University of South Wales, and Bangor University. With a focus on Primary and Emergency Care, the PRIME centre is funded by Health and Care Research Wales and aims “to improve health and well-being through undertaking high-quality research on topics of national policy priority in primary and emergency care and ensuring that findings are translated into policy and practice” (PRIME Centre Wales, 2020). PRIME Centre Wales has eight main research themes, each of which are outlined in Table 5.



Table 5: PRIME Centre Wales Major Research Themes (source: PRIME Centre Wales, 2020)

Work Programme:	Work Programme Description:
Work Programme 1	Infections and Antimicrobial Disease
Work Programme 2	Emergency, Unscheduled and Pre-Hospital Care
Work Programme 3	Patient Safety
Work Programme 4	Care Closer to Communities
Work Programme 5	Person Centred Care
Work Programme 6	Supportive and Palliative Care
Work Programme 7	Screening, Prevention and Early Diagnosis
Work Programme 8	Oral Health and Primary Dental Health Care

4.10 Primary and Community Care Development and Innovation Hub (PC Hub)

On an All-Wales Primary and Community Care basis, in 2016, Public Health Wales established The Primary and Community Care Development and Innovation Hub (PC Hub). The PC Hub was established to 'coordinate support for health boards and clusters, at a national level, in the delivery of the national plan for primary and community care in Wales (2015-18) and facilitate coordinated delivery on a range of projects' (PHW, 2019).

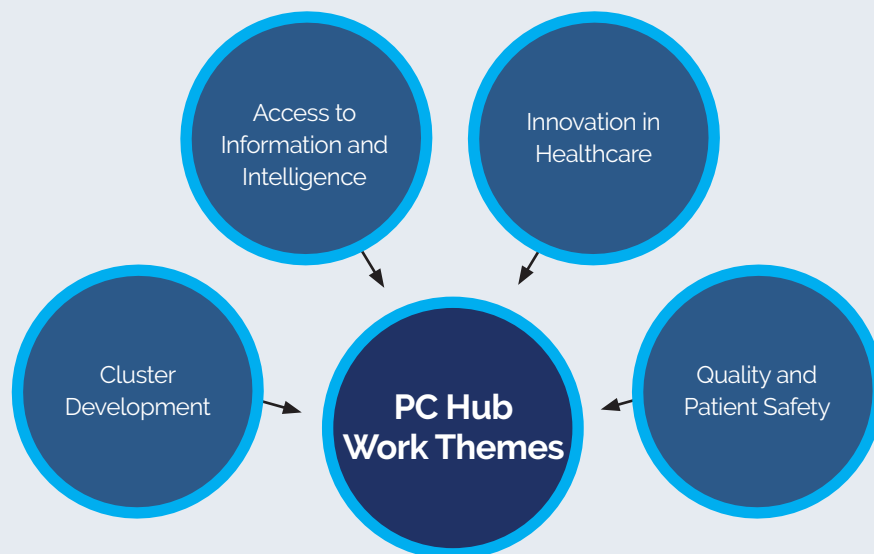
The PC Hub has three main functional objectives:

- Developing programmes to support cluster development
- Supporting the delivery of projects as part of overall agreed programmes
- Provision of a programme management infrastructure to ensure effective governance of work programmes, alignment of work programmes with strategic goals, assurance for delivery of agreed projects and interdependencies between projects are coordinated.

Additionally, the PC Hub has developed a number of resources to support cluster development, including the Primary Care Needs Assessment Tool, The Primary Care Health Intelligence Compendium as well as producing a Glossary of Terms. Alongside this, the PC Hub, in partnership with wider stakeholders, has developed a set of digital handbooks to support working within Primary Care clusters in Wales. The digital resources provide practical advice, ideas and signpost to additional resources for anyone new to a cluster leadership role, or who wants to become involved in cluster working' (Primary Care One, 2020).

Under the described work themes, the PC Hub has undertaken several activities to support Primary Care services and further promote cluster development. Such activity includes facilitating training and development programmes such as the Confident Primary Care Leaders Leadership Programme, Primary Care Cluster Lead Development Programme and the Confident Practice Managers Leadership Programme. The PC Hub also facilitates the Cluster Leadership Network Forum and has led several workshops and masterclasses relating to the topics of evaluation, communication and engagement, and project management. Figure 10 demonstrates the PC Hub work themes.

Figure 10: Four PC Hub Work Themes (PHW, 2019)



4.11: Primary and Community Care Infrastructure Projects in Cardiff & Vale:

Alongside the wide array of primary and community care related RII activity that has been described in the preceding section of this report, there is also several innovative infrastructure projects that are being developed across the region to support the delivery of Primary and Community Care services in Cardiff and Vale. Some examples of such infrastructure projects are briefly detailed in the following section of this report.

Dragon's Heart Hospital COVID-19 Response:

In response to the COVID-19 pandemic, CVUHB implemented Dragon's Heart Hospital to combat the growing demand for beds. The construction took 200,000 labour hours from 600 members of staff. The hospital was seen as a 'step-up, step-down' facility for patients at the end of their treatment of the virus through offering rehabilitation. Other facilities this hospital had, were mobile x-ray, CT scanners, a pharmacy and end-of-life pathway for care. This surge hospital was the only one in Wales to be equipped with oxygen tanks.



Maelfa Wellbeing Hub:

CVUHB have invested £14 million into a new Health and wellbeing hub, which is being built on the current Council Powerhouse Community Hub. with a broad range of services available such as education community rooms, advice area and wellbeing services. While taking advantage of the services that the adjoining Powerhouse Community Hub has to offer. One of the key ambitions of this hub is to provide a site that is sustainable and active travel, with public transport near the Hub. Also, there is secure staff and public cycling facilities on site. The whole area is suitable for push chairs, wheelchairs or with mobility issues.



Pentyrch Surgery:

The re-development of Pentyrch is set to be developed soon, due to the previous surgery being considered too small for the size of the population in the area. £15,000 is set to be invested towards a "community transport facility" to increase infrastructure to the region.



5.0: Other Cardiff & Vale Teaching Health Board RII Activity:

Secondary care services in Cardiff & Vale are provided by regional hospitals and the Welsh Ambulance Services Trust (WAST). Currently, across the region, there are ten major acute hospitals, University Hospital Wales, University Hospital Llandough, University Dental Hospital, Noah's Ark Children's Hospital for Wales, Barry Hospital, St Davids Hospital, Hafan y Coed Mental Health Unit, Cardiff Royal Infirmary, Rookwood Hospital, Lansdowne Hospital. These are further supported by many Community Hospitals and related Minor Injury Units (MIUs).

As with secondary care services throughout Wales, traditional ways of delivering care in the Cardiff & Vale region are changing, as policy and practice evolve to best meet the dynamic health and wellbeing needs of its population. Research, innovation, and improvement activities across secondary care settings in Cardiff & Vale are set to play a core role in supporting such change over coming years, alongside developing other aspects of



GIG
CYMRU
NHS
WALES

Bwrdd Iechyd Prifysgol
Caerdydd a'r Fro
Cardiff and Vale
University Health Board

5.1: Cardiff & Vale University Health Board Research Activity:

Aligning with Cardiff & Vale University Health Board's activity and structure described previously, CVUHB undertakes a range of research activities which is overseen by its centralised R&D department. From 2015 - 2021, CVUHB were involved in a total of 1034 research studies. Of these studies, 20% were related to Cancer (214 studies), which is significantly higher than the next common study topic (Children, 5.6% 59studies), demonstrating the regional focus within the described area. Table 6 overleaf provides a basic overview of CVUHB research study involvement, whilst Figures 11 provides a more comprehensive breakdown of CVUHB research study involvement. service providers such as new treatments and therapies. The following section of this report details Health and Social Care related RII activity across secondary care settings in the Cardiff & Vale University Health Board region.

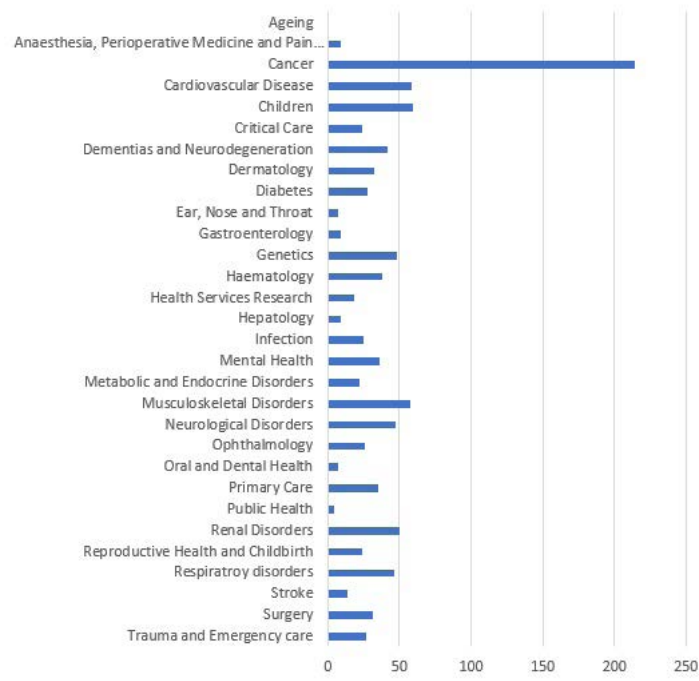


Figure 11: CVUHB Research Studies by Medical Specialism 2015/21 (Data Source: CVUHB via HCRW, 2022).

Table 6: Examples of Research Studies with CVUHB Involvement (Source: CVUHB via HCRW 2022).

Project Name:	Specialism:	Project Description:
A pilot randomised study to investigate the efficacy of PluroGel in healing venous and mixed aetiology leg ulcers	Dermatology	"This study will compare the effect of a new dressing, PluroGel, with Intrasite Gel dressing, when used with standard treatment on 40 patients with a venous or mixed venous arterial leg ulcer. PluroGel is a wound dressing that creates a moist environment at the wound surface and help to clean and debride (remove dead tissue) the wound." (HCRW, 2022).
The Efficacy and Safety of Intra-Arterial Administration of Rexmyelocel-T to treat Critical Limb Ischemia in Subjects with Diabetes Mellitus: Two Pivotal, Placebo-Controlled, Double-Blind, Parallel-Group, Adaptive Trials	Surgery	"The efficacy of intra-arterial administration of BM-MNCs to restore blood flow, treat ulcers, improve mobility and improve quality of life of diabetic patients with critical limb ischemia: A multicentre, randomized, double blind, and placebo-controlled trial." (HCRW, 2022).
A phase Ib study to assess the safety and tolerability of oral Ruxolitinib in combination with 5-azacitidine in patients with advanced phase myeloproliferative neoplasms (MPN), including myelodysplastic syndromes (MDS) or acute myeloid leukaemia (AML) arising from MPN.	Cancer	"To establish the maximum tolerated dose (MTD) and safety of Ruxolitinib in combination with 5-azacitidine" (HCRW, 2021).
A multicentre, double-blind, randomized, placebo controlled, parallel-group study to determine the efficacy and safety of Lucerastat oral monotherapy in adult subjects with Fabry disease.	Metabolic and Endocrine Disorders	"The purpose of the study is to test if Lucerastat, the new study drug, can reduce symptoms of Fabry disease such as pain and stomach symptoms when administered alone. The purpose is also to see if Lucerastat is safe for people with Fabry disease. Lucerastat is currently not "on the market" (not available to be prescribed to you) in any country. So far, Lucerastat has been tested in 86 healthy people (who do not have Fabry disease) and 10 patients with Fabry disease. The level of fatty substance in the blood was reduced in people with Fabry disease treated with Lucerastat for 12 weeks." (HCRW, 2021).
ARRIVE: Ambulance paramedics Responding to urgent patient Requests in general practice for home Visits - Evaluation development (Stage 1)	Primary Care	"Paramedics are being employed in primary care roles - working directly for general practices, or by arrangement with a local ambulance service. The main task the paramedics undertake is home visits for people unable to attend the general practice. Using paramedics rather than GPs to undertake such tasks may help address challenges in GP capacity, but the impacts for patients and health services are unknown. The research of ARRIVE Stage 1 aims to gain information about the service design and rationale of paramedics in primary care roles in Wales. We will speak with staff involved in the delivery of such services. Knowledge gained will be used to inform Stage 2 of the ARRIVE, which will examine the feasibility of an evaluation of paramedics in general practice. Phase 1 data collection will involve interviews with staff from health boards, ambulance services, and general practice, and a stakeholder workshop." (HCRW, 2021).



5.2: COVID-19 Research Projects:

The COVID-19 pandemic impacted upon everyone's lives, with lockdown regulations creating many barriers that forced organisations to rapidly change the delivery format of services. During this time, staff worked innovatively to find new ways of delivering services digitally, with the emergence of video consultations to enable remote appointments, the development of digital support for patients such as the Keeping Me Well digital rehabilitation resource, and the expedited roll out of home working capabilities.

As a health board, Cardiff and Vale of Glamorgan have sought to draw insight from the COVID-19 pandemic, aiming to use lessons learned to improve the delivery of service provision going forward. Specifically, the 'Learning and Legacy from COVID-19' report facilitated by Cardiff and Vale Regional Partnership Board and commissioned by the Research, Innovation and Improvement Coordination Hub (RIIC) provides a summative reflection on learning and practice stemming from consultations undertaken across the respective region. Here, the Cardiff and Vale of Glamorgan Integrated Health and Social Care Partnership undertook an evaluation to explore how the pandemic inspired more effective partnership working across the region, to 'keep people living the best lives they can in their homes and communities.'

The report highlights examples of innovative practice and new ways of working that emerged as the result of the COVID-19 pandemic, placing particular emphasis on the valuable contribution technology and digital innovation has made to the effectiveness of health service delivery across the Cardiff and Vale region. In this regard, the use of digital technology facilitated communication and networking between healthcare professionals, such that online ways of working provided staff efficiencies and greater opportunities for service providers to build relationships with other partner organisations.

Here, healthcare professionals felt trusted to make decisions they'd not previously had the authority to make, enabling them to work more quickly and effectively. Meanwhile, the move to online communication and virtual healthcare delivery enabled individuals and their families to continue accessing services, causing them to feel more informed and supported in relation to their health needs.

Now, a key focus of the organisation is to restore and improve access to services that have been impacted by the COVID-19 pandemic, transform clinical pathways and in doing so, enhance services for patients and communities through the ambitious Recovery and Redesign programme. The programme aims to identify and implement innovative approaches to health care to help reshape the way services deliver care for people in Cardiff and the Vale of Glamorgan, and beyond.

Future improvement may reside. In particular, the report notes the important and valuable contribution technology and digital innovation has made to the effectiveness of health service delivery across the Cardiff & Vale region which has improved communications and networking. Additionally, the report highlights changes in working practice because of the pandemic, including CVUHB staff working from home. Stakeholders from across CVUHB report several benefits of working from home including providing staff efficiencies and greater opportunities for service providers to build relationships with other partner organisations. However, the report also cites several challenges related to working from home that has emerged because of the pandemic. These include reduced social interaction and potential for loneliness and isolation.

5.3 All Wales NHS COVID-19 Innovation and Transformation Study:

Additionally, CVUHB staff members have also recently partaken in the NHS Wales COVID-19 Innovation and Transformation Study (Swansea University, 2021). The aim of the study was 'to capture key learning and share the novel and innovative practice that has emerged because of the COVID-19 pandemic across NHS Wales'. Emerging findings from the report identified seven key themes: highlighting next steps going forward. These detailed the importance of working together and having more agile use of resource, in addition to accelerated decision making, sustaining the pace of innovation and change, improving digital access and confidence and embracing new technology. Finally, staff wellbeing was highlighted as a priority. service providers such as new treatments and therapies. The following section of this report details Health and Social Care related RII activity across secondary care settings in the Cardiff & Vale University Health Board region.

5.4 Other COVID-19 Research Studies involving CVUHB:

Similarly to other health boards in Wales, CVUHB has undertaken several COVID-19 related research studies, some of which are outlined in Table 7 below. These research projects align with the publication approach taken by the health board and primarily focus on maternal health and community-based care.



Table 7: A list of COVID-19 related research projects within which CVUHB has participated.

Project Name:	Project Description:	Participating Health Boards:
UK Obstetric Surveillance System (UKOSS)	Maternal and Perinatal Outcomes of Pandemic Influenza in Pregnancy.	All Health Board in Wales
Neonatal Complications of Coronavirus Disease (COVID-19) Study	This is a national surveillance programme using the standard British Paediatric Surveillance Unit (BPSU) approach. This study will run alongside and be cross-linked with the maternal surveillance study run through the United Kingdom Obstetric Surveillance System (UKOSS; CPMS: 14162), which is already in progress.	All Health Boards in Wales
Platform Randomised trial of INterventions against COVID-19 In older peoPLE (PRINCIPLE)	The trial aims to give a rapid answer about the effectiveness of hydroxychloroquine in modifying the disease course of COVID-19.	All Health Boards in Wales
Co-VIDA: the impact of the COVID-19 outbreak on health workers	The Co-VIDA study is a nationwide online survey which is measuring the impact of the COVID outbreak on the mental health of NHS and non-NHS health workers. The study will allow us to understand the severity of this impact, the factors associated with a worse or resilience response; and importantly how the impact on mental health changes over time as the COVID crisis evolves.	All Health Boards in Wales
The effectiveness and cost-effectiveness of a group programme for men who are concerned about their abusive behaviour in relationships with women: A randomised controlled trial (REPROVIDE)	This study has been open to recruitment since October 2019 and forms part of an NIHR programme grant called 'Reaching Everyone: Programme of Research on Violence in Diverse Domestic Environments' (REPROVIDE). It has been repurposed in light of COVID-19 as the victim support and signposting services to partners and ex-partners, and the identification and monitoring of abusive men that are provided within the context of the study are vitally important services to continue.	All Health Boards in Wales

The following section of this report outlines several CVUHB research outputs in relation to its academic publication profile. This provides granularity at the level of Cardiff & Vale Teaching Health Board, while also allowing for comparison between the academic publication profiles of other NHS Wales Health Boards more broadly.

5.5: CVUHB Research Publications:

In terms of translating research findings into academic publications for wider dissemination, Cardiff and Vale University Health Board is associated with a total of 1637 academic publications (Scopus, 2022). As is demonstrated by Figure 12, since the year 2000, the number of academic publications associated with Cardiff and Vale University Health Board steadily increased with further increases seen after 2015. When compared to the other Health Board outputs in figure 13 Cardiff and Vale University Health Board are a clear stand out with a consistently higher output of associated documents. Publication output might also be considered a proxy indicator of research activity, and if so, this indicates the level of research activity taking place when compared to other Health Boards.

Figure 12. CVUHB Academic Publications by Year 2000-2021 (Data Source: Scopus, 2022).

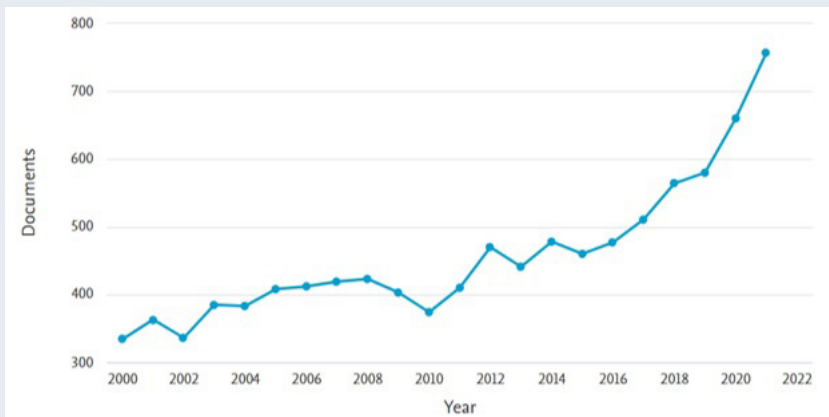


Figure 13: All Wales Health Boards Comparison of Academic Publications (Source: Scopus, 2022).

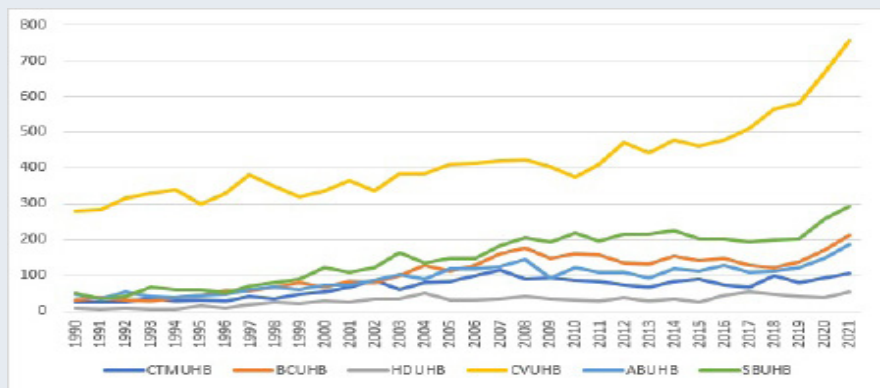


Table 8: Examples of Research Publications associated with Cardiff and Vale University Health Board (Source: Scopus, 2021).

Source title:	Authors::	Year:	Publication Title:
BMC Neurology	Van Vliet et al.,	2016	How integrated are neurology and palliative care services? Results of a multicentre mapping exercise
Journal of Medical Engineering and Technology	Hosking J, Gibson C	2016	Impact of the single point of access referral system to reduce waiting times and improve clinical outcomes in an assistive technology service
Anaesthesia	Jones et al.,	2016	Platelet count and transfusion requirements during moderate or severe postpartum haemorrhage
Journal of Anxiety Disorders	Karatzias et al.,	2016	An initial psychometric assessment of an ICD-11 based measure of PTSD and complex PTSD (ICD-TQ): Evidence of construct validity
Psychology, Health and Medicine	Barker et al.,	2017	'I've got to prioritise': being a parent with cystic fibrosis
European Urology	Johnston et al.,	2017	Mortality Among Men with Advanced Prostate Cancer Excluded from the ProtecT Trial
British Dental Journal	Drage et al.,	2018	Imaging patients with cancer of the oral cavity
Acta Psychiatrica Scandinavica	Cloitre et al.,	2018	The International Trauma Questionnaire: development of a self-report measure of ICD-11 PTSD and complex PTSD
British Journal of Haematology	Green et al.,	2019	Haematological management of major bleeding associated with direct oral anticoagulants – UK experience
Journal of the operational Research Society	Morgan et al.,	2019	Determining patient outcomes from patient letters: A comparison of text analysis approaches
Health Technology Assessment	Knight et al.,	2019	Intravenous co-amoxiclav to prevent infection after operative vaginal delivery: The ANODE RCT
Emergency Medicine Journal	Hepburn et al.,	2020	Burns and Scalds Assessment Template: Standardising clinical assessment of childhood burns in the emergency department
British Journal of Community Nursing	Mahoney K, Simmonds W	2020	Using a health improvement methodology to standardise leg ulcer management
Journal of Biomechanics	Williams et al.,	2020	The relationship between alignment, function and loading in total knee replacement: In-vivo analysis of a unique patient population

5.6: CVUHB Improvement Projects:

Shaping our Future Wellbeing Strategy for Cardiff & Vale:

The 'Shaping our Future Wellbeing' strategy is a report produced by CVUHB to develop a long-term strategy for the region by "caring for people, keeping people well" (CVUHB, 2015). CVUHB are responsible for serving approximately 475,000 individuals in the local community, employ 14,000 staff members and

they provide delivery of care with an annual spend of approximately £1.2 billion, every year. The vision set out from this strategy is to ensure that "a person's chance of leading a healthy life is the same, wherever they live and whoever they are" (CVUHB, 2015). Below is a map that outlines the strategy (CVUHB, 2015).

The CVUHB have identified that as a Health Board they have a responsibility for the health and wellbeing of the local population. However, they cannot directly provide all necessary support and instead must provide services directly as well as working with other stakeholders to ensure the remaining required services are available. From this the CVUHB have summarised their key challenges as:

- How to best join up care to reduce inequalities in health which arise because of inequalities in society; particularly how to manage risk factors and conditions which will have the biggest impact on the local population now and in the future
- How to ensure that the services provided now and those CVUHB expect to provide in the future are sustainable.



Strategy

Achieve joined up care based on 'home first', avoiding harm, waste and variation, empowering people and delivering outcomes that matter to them.

Empower the Person

- Help people in choosing healthy behaviours
- Encourage self-management of conditions

Home First

- Enable people to maintain or recover their health in or as close to home as possible

Outcomes that matter to People

- Create value by achieving the outcomes and experience that matter to people at an appropriate cost

Avoid harm, waste and variation

- Adopt an evidence-based practice, standardising as appropriate
- Fully utilise limited resources available, to support the delivery of care to the population of Cardiff & Vale
- Reduce avoidable harm
- Complete outcomes through the appropriate intervention (CVUHB, 2015)

Objectives

For the Population:

- Reduce health inequalities
- Deliver outcomes that matter to people; and all take responsibility for improving population health and wellbeing

Service Priorities:

- Offer services that deliver the standards for population health that citizens are entitled to expect

Culture:

- Be a great place to work and learn
- Work better together with partners to deliver care and support across care sectors, making the best use of assets offered by staff members and technology
- Excel at teaching, research, innovation and improvement and cultivate an environment in which innovation thrives

Sustainability:

- Create an unplanned (emergency) care system that provides the right care, in the right place, first time
- Have a planned care system wherein demand and capacity are balanced
- Reduce harm, waste and variation sustainably, making the best use of available resources (CVUHB, 2015).

Next Steps

To support the 'Shaping Our Future Wellbeing Strategy,' CVUHB updates and refines its three year Integrated Medium Term Policy (IMTP). The aim here is to embed its key strategic principles and framework on a regular basis. Additionally, CVUHB plans to maintain these priorities by working closely with key partners, while constantly reviewing governance so it may maintain the strategy aims. This includes service priorities, planned and unplanned care for the region (CVUHB, 2015).

Quality Improvement Project Transforming Service at West Quay Medical Centre:

One of the medical centres governed by CVUHB is The West Quay Medical Centre in Barry. This medical centre has undertaken a quality improvement project to reduce the number of patients not attending their appointments (DNAs) and to ensure that patients get to see the right health care practitioner.

At the centre, which covers 14,000 patients across Barry, a team of healthcare professionals have made significant headway in reducing the numbers of patients who did not attend (DNA) their appointments, working to free up additional appointments for patients while also making more effective use of health care practitioners' time. Figure 14 shows a summary of the project findings.

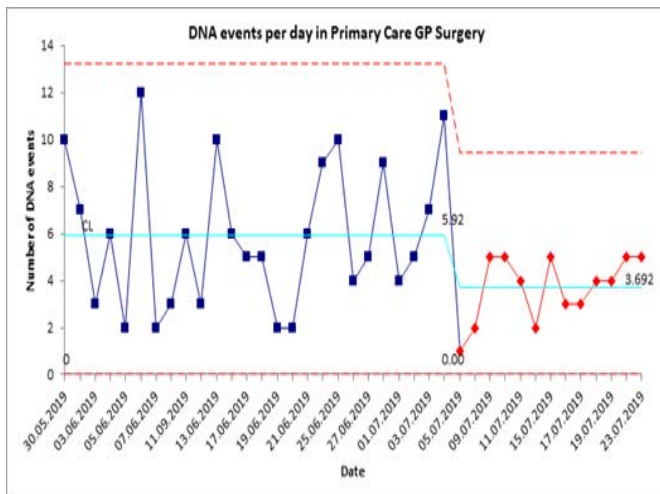
The three key areas for this change included:

- Re-framing the behaviour of always "seeing a GP" – thereby taking a prudent health care approach, in encouraging seeing the best health care practitioner for their specific needs.
- Redesigning the appointment system to give appropriate access to the skills of all the multi-disciplinary team.
- Eliminating unwarranted demand for appointments by minimising potential waste generated through DNAs, seeing the wrong health care practitioner and avoiding revolving door patients etc.

The team has also undertaken analysis of patient behaviour to identify the reasons for DNAs, and have implemented several small tests of change, including:

- Understanding why text message reminders were not always effective (which was sometimes caused by simple errors in contact information)
- Adding a voicemail cancel appointment option on automated phone message (which means that services users no longer had to wait in a telephone queue to speak to a receptionist)
- Using web and social media to promote the various options available for cancelling an appointment
- Changing the approach to DNA events – which includes encouraging service users (particularly those repeatedly cancelling appointments) and updating the DNA template letter
- Encouraging a collective responsibility approach to precious appointment resources (which involved #don't need it, can't use it, give it back for another patient)
- And finally, an option for cancellation via the West Quay Medical Centre website, with more administrative functionality increasing ease of use and available to patients 24/7

Figure 14: Total number of DNA events per day in Primary Care GP Surgery.



The quality improvement Lead at West Quay Medical Centre and Quality Improvement Faculty Lead at Health, Education and Improvement Wales (HEIW) has provided a commentary on the positive results of transforming the approach to DNAs and providing appropriate access for patients to the whole Multi-Disciplinary Team. Specifically, they noted the potential contributions of this approach in ensuring more appropriate and efficient allocation of resource, in addition to delivering much-improved services for patients at the centre too. Overall, the results of this service improvement demonstrate great capacity to yield beneficial results, though longer-term outcomes are yet to be realised.

5.7: Innovation: The Bevan Commission.

Innovation across Cardiff and Vale is in part supported by The Bevan Commission. The commission, based at Swansea University, is an independent health and care advisory body to the Welsh Government. Consisting of 25 internationally renowned experts from across Wales and beyond, the commission works to ensure that health and care services are sustainable and effectively meet the evolving health and care demands of the Welsh population.

Prudent Healthcare Agenda:

Drawing upon national and international evidence, the commission launched its Prudent Healthcare agenda in 2013. This agenda aims to ensure that "healthcare in Wales is conceived, managed and delivered in a cautious and wise way, characterised by forethought, vigilance and careful budgeting, which achieves tangible benefits and quality outcomes for patients" (Bevan Commission, 2013). Prudent Healthcare is guided by four key principles, outlined below:

- To achieve health and wellbeing with the public, patients, and professionals as equal partners through co-production.
- To care for those with the greatest health need first, making the most effective use of all skills and resources.
- To do only what is needed – no more, no less – and do no harm.
- To reduce inappropriate variation using evidence-based practices consistently and transparently.

5.8: The Bevan Commission Exemplars and Adopt and Spread

The Bevan Commission also places a significant focus of its work on innovation-related activities. To support this, the commission has three flagship innovation support programmes, which aim to catalyse and sustain transformation across each of the seven health boards and three related all Wales NHS trusts (Public Health Wales, Velindre NHS Trust and the Welsh Ambulance Services Trust) and the NHS Wales Informatics Service. Currently, its two focal programmes are the Bevan Exemplars Programme and its newest Adopt and Spread project.

The Bevan Exemplars Programme, established in 2015, is designed to support healthcare professionals across Wales to try out and test new innovative ideas that have the potential to support health and care service transformation. Since its onset, the programme has supported over 140 successful projects across a variety of health and care-related domains.

The Adopt and Spread programme was established in 2020 and the first programme cohort is currently progressing. In collaboration with healthcare organisations across Wales (adopters), the Bevan Commission is testing mechanisms for the adoption and wider spread of successful innovation projects, building upon the success of the Bevan Exemplars programme.

The following section of this report now provides examples of both Bevan Exemplar projects and Adopt Spread projects involving staff from Cardiff & Vale

5.8.1: CVUHB Bevan Commission Exemplar Project Case Studies:

Bevan Exemplar Case Study 1: The Pelvic Health Community Hub:

Background

Pelvic health services provide care for all patients who suffer with functional pelvic issues (including bladder and bowel incontinence, constipation, pain and prolapse). Pelvic health services cross-cover the surgical disciplines of colorectal surgery, urology and gynaecology and primary care. This overlap means care can be sometimes disjointed and inefficient. Following the Cumberlege report, there has been a national drive to create pelvic health "one stop shops" (Bevan Commission, 2021).

Project Aim

To achieve this, the project had several aims, including to maximise the availability of conservative treatments for pelvic health dysfunction; increase patient compliance of conservative treatments; expand our multi-disciplinary team skillset and working relationships; streamline the patient pathway; and reduce the need for surgery (Bevan Commission, 2021).

Outcomes

The project has produced a number of key outcomes during its operational lifetime, including completing its first clinic in June 2021; the development of a new PTNS service offered for colorectal patients; the finalisation of an app supporting the Referral Pathway and Faecal Incontinent Pathway with Patient Journey App; additional dietician support confirmed for two sessions a week; funding secured for additional staff, including a pelvic health physiotherapist, pelvic health coordinator and colorectal nurse specialist; and additional 'buy in' from community continence nursing staff (Bevan Commission, 2021).

Bevan Exemplar Case Study 2: Sharing best practice across the UK for health-based youth work:

Background

Health-based youth workers support the social and personal development of young people with a range of conditions across various healthcare settings and specialities. The variety of patient needs supported by a health-based youth worker make it a critical role for the effective, efficient, and prudent care of young patients. Over the last three years, the project lead has demonstrated the value of having a Youth Worker as part of the multidisciplinary team within Nephrology Services in South Wales and shown how it can be a crucial role in supporting young kidney patients.

Having grown the service based entirely on the needs of the young people who use it, the initiative is now seeing empowered young people who are happier, have better control over their health conditions, are more equipped to cope with adversity and are more active. Many have been able to return to work or training, have started new careers and are experiencing improved health outcomes (Bevan Commission, 2017).

Project Aims

The project originally aimed to design and test a model of best practice for health-based youth workers across Wales. After being encouraged and challenged by the Bevan Commission to think wider and consider the scalability of the idea, the project lead sought the opportunity to present the project at a national health-based youth work conference. From this, the idea developed into an online Health-Based Youth Work Hub, with the conference further shaping the initiative and guiding its development.

The aim then became to create a practical and usable online platform from which health-based youth workers may develop a community of support, wherein best practice may be shared, and further research opportunities may be developed. This platform aims to enable health-based youth workers to work together more effectively and fast track the development of a new and emerging professional role within healthcare (Bevan Commission, 2017).

Outcomes

To date the project has achieved multiple outcomes, including strengthened partnerships with health-based youth workers across the UK and the co-creation of an online hub designed with guidance from the health-based youth work community. Additional outcomes include the development of a template design for the online platform, and the exploration of funding opportunities to employ a web developer (Bevan Commission, 2017).

Table 9: Examples of Cardiff and Vale University Health Board Bevan Exemplar Projects 2016/2020 (Bevan Commission, 2020b).

Cohort:	Project Title/Description:
Cohort 1	Revolutionising the way we think about Blood Donation and Transfusion in Wales by optimising Patients Haemoglobin for Major Open-Heart Surgery.
Cohort 1	To demonstrate the use of Next Generation Sequencing (NGS) for the genetic analysis of solid tumour samples from cancer patients within the Welsh population
Cohort 1	3M SpotOn core temperature monitoring system
Cohort 1	Gallium 68 DOTA peptide PET/CT for the diagnosis and staging of neuroendocrine tumours
Cohort 2	Diabetes foot health engagement and empowerment to self-care
Cohort 3	A Cluster based GP Recruitment and Retention Toolkit
Cohort 3	A Health Based Youth Work Model for Wales
Cohort 4	Rapid microbial quality assurance (QA) of aseptically prepared products
Cohort 4	Medicines management support for recently discharged patients in the Cardiff West Cluster: a co-ordinated, needs-assessed, approach
Cohort 5	Needle in a Haystack: Finding the glaucoma patient that are going blind
Cohort 5	Let's talk About Porphyria: Better Conversations, Better Experience, Better Outcomes
Cohort 6	Get there together - a resource to support the people of Wales access their communities

5.8.2: CVUHB Bevan Commission Adopt and Spread Programme Projects

In relation to the Bevan Commissions Adopt and Spread programme that has now concluded, Cardiff and Vale University Health Board took part in three adoption programmes. The projects CVUHB adopted were Stance: Learning Self Care for Foot Health, Managing Irritable Bowel Syndrome (IBS) Using the Low Fodmap Diet and Be Here Be Clear, which are briefly described below, drawing on information from the Bevan Commission (2021).



PROJECT 1:

Stance: Learning Self Care for Foot Health

Diabetes foot health engagement and empowerment education in the community.

Adoption sites:

- Hywel Dda University Health Board
- Cardiff and Vale University Health Board (across two sites, one of which is now paused)
- Betsi Cadwaladr University Health Board



PROJECT 1:

Managing Irritable Bowel Syndrome (IBS) Using the Low Fodmap Diet

Working with staff health and wellbeing programmes to introduce sessions for people diagnosed with IBS.

Adoption sites

- Cardiff and Vale University Health Board
- Cwm Taf Morgannwg University Health Board
- Aneurin Bevan University Health Board
- Narrative Microbiology Authorisation (Public Health Wales)



PROJECT 3

Be Here, Be Clear.

A preventative evidence-informed intervention to work with families reinforces responsive interactions to support children to learn to talk.

Adoption Sites:

- Swansea Bay University Health Board
- Cardiff and Vale University Health Board
- Betsi Cadwaladr University Health Board
- Aneurin Bevan University Health Board (3 sites, 2 of which are new)
- Cwm Taf Morgannwg University Health Board (new)
- Powys Teaching Health Board (new then paused)

The following section of this report will now highlight a range of other innovative projects that are ongoing or have been recently concluded across the Cardiff and Vale University Health Board. This section aims to detail the diverse range of innovation projects currently ongoing across the health board.

5.9: CHUHB Innovation Project: A Community-first Approach to Diabetes Management

Approximately 5.6% of the population of Cardiff and the Vale has diabetes, and of these, approximately 9 out of 10 have been diagnosed with type 2 diabetes. Type 2 diabetes is a lifelong condition that can lead to serious health complications, such that treatment and management of both types of diabetes accounts for around 10% of the NHS budget in England and Wales. However, the prevalence of diabetes in the UK is expected to rise at an alarming rate, with previous findings to suggest that the prevalence rate has increased from 1.4million to 3.5million since 1996 alone. Given that management in this case involves taking artificially created insulin, the standard practice here has been to refer patients from their local GP to hospital outpatient appointments, which contributed to long waiting lists and frustrated healthcare users. In attempt to improve the patient experience and offer more prudent treatment, the specialist diabetes team at Cardiff and Vale University Health Board began to develop a community-first model of care to better support patients with type 2 diabetes.

The aim of this innovative community-first approach to diabetes type 2 management is to offer patients the opportunity to receive care closer to home, easing the pressure on hospital sites while also saving valuable time for both clinicians and patients alike. The first step in developing this community-first model of care was for specialist diabetes consultants in secondary care settings to develop strong working relationships with several GPs across the region, to share skills and knowledge. As a result of this knowledge-sharing, the team identified that many patients were being prescribed an expensive type of laboratory-created insulin and had been receiving this on prescription for a long time without review. Importantly, the more expensive insulin did not produce effective results as compared to those taking human insulin, with very few patients reporting clinical benefits from taking the more expensive laboratory-created product.

Transformation in action

In 2015, the diabetes team applied for funding from the Welsh Government's 'Invest to Save' scheme. They wanted to transform diabetes care based on what they'd learned from their time with GPs, starting with the appointment of two diabetes specialist nurses who would offer care in the community.

These nurses worked in partnership with primary care staff to:

- identify patients who were struggling to manage their diabetes
- support individuals to make the switch to human insulin, where appropriate
- provide remote and in-person guidance to patients to ease the pressure placed on hospital sites.

Since the new community-first model diabetes care and management has been implemented, records suggest that the team have been able to save approximately £324,000 thanks to cost-effective prescribing. Moreover, the additional resource and improved education has also resulted in meaningfully lower blood glucose levels in patients (with a mean reduction of 13.9mmol/mol), which means fewer complications in diabetes patients. The Consultant Physician and Diabetologist of Cardiff and Vale UHB who reported on the project outcomes highlighted that over the two and a half years that the project spanned from following its inception, not a single patient deteriorated in terms of their glucose control. This community-first diabetes care and management project is thus an exemplar of innovative healthcare provision which places the needs of the patient at the centre of its practice.

5.10: CVUHB Innovation Project: Sustainable Use of Nitrous Oxide

The 'Healthcare Without Harm' report showed that 5.6% of UK emissions are from healthcare, an area identified in the NHS Wales Decarbonisation plan is the reduction of emissions of anaesthetic gases. A regularly used anaesthetic gas is Nitrous Oxide, which has a far higher potential harm factor for global warming when compared to CO₂. The CVUHB have had multiple projects investigating and implementing innovations related to the sustainable use of Nitrous Oxide. A project was completed earlier in the year and presented at the Green Health Wales Conference, by Amarantha Fennell-Wells, which queried the supply of nitrous oxide vs. use resulting from the possibility of leaks or loss of this gas from the manifold supply. Through analysis of the volume of nitrous oxide purchased by the UHB against the recorded usage of nitrous oxide from machine and anaesthetists' logs, the infrastructure was found to be inefficient.

Taking these project findings forward, a group has been established to explore how nitrous oxide can be delivered via small cylinders and eliminate the use of the manifold system. The multi-disciplinary project group includes Estates, Anaesthetic Support, Pharmacy, Anaesthetists, ODPs, Nursing staff, Health & Safety and Shared Services.

Following attendance at the Spread & Scale Academy in October 2021 a plan was developed to undertake testing during November/December 2021, with the prototype cylinders being used in the Children's Hospital. Following the evaluation of the prototype it has been agreed to rollout the use of smaller cylinders to all theatre areas. The next steps of this innovation project include distributing the cylinders to all theatre areas as well as the decommissioning of two of the main manifolds at UHW and UHL (Personal comms CVUHB 2022)

Further innovation projects aiming to tackle Nitrous Oxide use and its environmental implications include a project that has recently started to identify all the areas using Entonox and then to review the three manifolds at UHW, as part of reducing the Health Board's emissions. Nitrous oxide leakage from the traditional piped manifold systems has been identified as a major source of global warming emissions from hospitals.

The Medclair Mobile Destruction Unit (MDU) is an innovative solution which collects residual nitrous oxide from exhaled air and subsequently destroys the gas. The system purifies more than 99% of nitrous oxide entering the unit which helps to facilitate a healthy work environment for healthcare professionals and a safer space for patients. These units will enhance staff wellbeing in terms of removing Entonox from the atmosphere and ensure we move towards environmental sustainability by achieving the aims NHS Wales Decarbonisation Plan.

Cardiff and Vale UHB are leasing three mobile destruction units and the plan is to pilot these in the maternity and midwife-led units at UHW and link in with other sites that are undertaking the evaluation of this kit in Manchester, Edinburgh and Newcastle. The clinical team will contact the other sites to ensure that there is a robust evaluation framework. The findings will be reported to Welsh Government and other UHBs, as UHW is the pilot site for Wales.

5.11: CVUHB Innovation Project: Eye Care Digitalisation

By recognising the risk faced by over 100,000 patients of irreversible sight loss who were waiting for a hospital eye appointment in Wales in 2019, the Cardiff & Vale University Health Board along with Welsh Government support, have worked together to bring High Street optometrists, clinicians, and the Welsh Government together to reduce the burden on hospitals. By doing so the relevant stakeholders were able to produce an innovative clinical model that taps into academic expertise, provides a thorough understanding of the life sciences ecosystem, and supplies the facilities needed by innovators and entrepreneurs to realise ideas.

The use of state-of-the-art imaging technology, dedicated software and electronic patient records allows patients to undergo tests at their local optometry practice. Images and results are uploaded for review by a consultant ophthalmologist, and high street optometrists were then able to assess the relief of pressure on ophthalmology services through the best use of community care. Transforming Eyecare Services Wales has supported novel pilot services to manage up to 9,000 designated patients.

The scheme has brought many benefits, including reduced waiting times, adoption of new technologies, increased capacity in secondary care to assess and manage eye care patients, new skills and competency training for independent optometrists, and closer links with secondary care which could lead to the provision of additional services by optometry enterprises. It has also brought Cardiff University expertise closer to eyecare-related health in a community setting and is leading to peer reviewed publications and new health economics insights in ophthalmic care.

5.12: South Wales Trauma Network:

The South Wales Trauma Network (SWTN) was first established in September 2020 and covers South Wales, Cardiff & Vale and South Powys, with £13.186m of Welsh Government funding provided to support its activity (Welsh Government, 2020). This innovative network consists of 'hospitals, emergency response services and rehabilitation services, which ensure patients with life-threatening and life-changing injuries receive the best possible treatment and care'. In terms of network infrastructure in Cardiff & Vale, University Hospital of Wales has established an adults' and children's major trauma centre. An adult and paediatric trauma unit has also been established at University Hospital of Wales



6.0: Social Care Across Cardiff and the Vale of Glamorgan:

The term social care is used to 'describe all forms of personal care and other practical assistance for children, young people and adults who need extra support' (Contact, 2020). In 2014, The Social Services and Wellbeing (Wales) Act received Royal Assent, which then came into force later in 2016. The Social Services and Wellbeing (Wales) Act 2014 'provides the legal framework for improving the well-being of people who need care and support, carers who need support, and for transforming social services in Wales' (Social Care Wales, 2020).

In Wales, local authorities have the statutory responsibility for the planning and commissioning of social care services as well as safeguarding vulnerable people in their communities. In Cardiff & Vale, this responsibility falls to Cardiff Council and Vale of Glamorgan Council. As a consequence of planning and commissioning responsibilities being devolved to each local authority, services and related delivery models vary across regions. This effectively permits each local authority to adopt different approaches to the provision of social care, and thus, a degree of freedom to try out and test new and innovative models of service delivery.

The following section of this report now details several case studies of social care related RII activities currently ongoing or which have recently concluded across Cardiff Council and Vale of Glamorgan Council. Furthermore, this also provides a brief overview of Transformation and Integrated Care Fund projects being undertaken in the Cardiff & Vale region. To begin with, however, an overview of the recent research priorities developed by Social Care Wales is presented to provide wider context and information.



6.1. Social Care Wales

In partnership with Health and Care Research Wales, Social Care Wales have recently developed ten research priorities that focus upon those over sixty-five years of age living in Wales (Social Care Wales, 2021). The priority areas, outlined below, were co-produced with members of the public and the social care workforce in Wales through a series of surveys and workshops/focus groups and have been drawn directly from Social Care Wales (2021).

1. Does early care planning and/or early or regular contact by social care services, help prevent problems and result in better experiences for older people than waiting until there is a crisis?
2. How can we reduce isolation and stress amongst carers of older people and prevent burnout?
3. How can social care and health services, including the voluntary sector, work together more effectively to meet the needs of older people?
4. How can social care for older people be tailored to the interests and needs of individuals, including better involvement in decisions about their own care?
5. How can social care best support older people with complex needs (e.g., people who need support from a range of health and social care services)?
6. How can social care for older people be funded in a sustainable way?
7. What barriers do older people experience in accessing services (e.g., access to information, waiting times, access to online technology, communication, costs)? How can access be improved?
8. How can terms and conditions, including wages, be improved for staff providing social care to older people? Will this attract more people to the profession?
9. How can social care for older people be kept at a consistently high quality?
10. How can home and community-based social care enable older people to socialise, reducing loneliness and isolation?

Building upon the Social Care Wales research priorities detailed above, the following section of this report now outlines a range of Social Care related RII activities being undertaken across the Cardiff & Vale region. This begins by outlining examples of Welsh Government Transformation Fund and Integrated Care Fund (ICF) supported projects that are ongoing or have been recently concluded across the Cardiff & Vale region. This then develops to detail examples of RII projects being pursued by Cardiff & Vale County Council.



6.2: The Welsh Government Transformation Fund:

The Welsh Government's Transformation Fund (2018-2020) was designed to help support the design of 'new models of health and social care, with the aim of speeding up their development and demonstrating their value' (Welsh Government, 2021). The early objective (2018 – 2020) of the Transformation Fund was to focus on the development of new models of health and care which related to areas including 'the seamless alignment of health and social care services; local primary and community-based health and social care delivery; and new integrated prevention services and activities' (Welsh Government, 2021). In response to the described opportunity, the fund encouraged Regional Partnership Boards from across Wales to submit proposals for project funding that aligned with the programme funding remit (Welsh Government, 2021). The Cardiff and Vale of Glamorgan Regional Partnership driven model that successfully received funding outlines the importance of bringing care closer to the community through the Me, My Home, My Community project, which is detailed below.

Me, My Home, My Community Project:

Developed by the Cardiff and Vale of Glamorgan Regional Partnership Board, Me, My Home, My Community aims to transform the delivery of healthcare and improve the health and wellbeing of individuals by facilitating seamless working between partners across the Cardiff and the Vale of Glamorgan. This project takes a progressive approach to improving population health by striving for a joined-up system of working between the community, third and independent sector partners, primary and community services. The vision here is to facilitate partnership working between all parts of the NHS, local authority services, charities, and the

voluntary sector, ensuring that individuals and families get the support they need closer to home. In this regard, emphasis is placed on supporting individual, family, and community resilience, while combatting the health consequences of loneliness, isolation, and disconnection. It is hoped that more integrated ways of working will hereby improve the health and well-being of individuals, while also reducing service demand and reliance on hospitals by minimising the need for secondary services.

Specifically, the aims of this project are to:

- Change the way organisations work together in hospitals. For example, it is envisioned that local authorities will work with the NHS to provide increased daily contact on the wards. Get Me Home Plus will see people being assessed in their own home after being discharged from hospital, rather than being assessed before being discharged. This will provide a better understanding of the support and adaptations needed in the individuals home, allowing people to return home more quickly after a stay in hospital. Wrap-around care at home will be provided by healthcare professionals, social services carers, and social workers.
- Develop a well-being website to link services across the community and allow health and social care professionals to securely share information about patients.
- Develop a well-being workforce. In addition to social prescribers and existing well-being officers, reception staff will be trained to provide information and connect individuals to volunteer carers within the community.
- Develop and recommend community-based care. These may include community gardening projects, walking groups 'men's sheds,' and 'talking cafés.'
- Identify individuals who are at risk, and actively support them to remain as independent as possible. This involves creating better connections between hospitals, GPs, and pharmacists to ensure everyone is informed of individual patients' needs when they are discharged from hospital, and patients have one primary point of contact.
- Implement multi-disciplinary teams, led by a GP, to develop and regularly review service

6.3: The Integrated Care Fund (ICF):



The Integrated Care Fund (ICF) funded by the Welsh Government was first established in 2014. The fund aims to support Welsh Regional Partnership Boards including Cardiff and Vale RPB to develop and test new and improved integrated ways of working for delivering high-quality health and care services across and between their respective regions (Welsh Government, 2021a). This includes projects relating to improved partnership working and co-operation, workforce and infrastructure.

Between 2019 and 2021, Regional Partnership Boards in Wales were required to use ICF funding to support projects across five priority areas, which were set out by the Welsh Government (see Welsh Government, 2021a). These priority areas are outlined below, with the Welsh Government requiring funding to be allocated evenly across these domains.

1. Older people with complex needs and long-term conditions, including dementia.
2. People with learning disabilities.
3. Children with complex needs due to disability or illness.
4. Carers, including young carers.
5. Children at risk of becoming looked after, in care or who are adopted.

Similarly, to other regions across Wales, the ICF project portfolio specific to Cardiff and Vales spans a broad range of areas related to Health and Social Care.



6.4: Integrated Care Fund (ICF) Projects in Cardiff and Vale:

The ICF strategy used by the Cardiff & Vale RPBs during the 2021/22 funding cycle sought to build upon progress made over previous funding years, using the £11.915m funding allocation that supported a total of 49 projects. Projects funded in the 2021/22 cycle covered a range of ambitions seeking to take a more proactive approach to Health and Care, including projects designed to improve care co-ordination between Health and Social Care, Third Sector and Housing organisations; optimise independent living opportunities for individuals; and projects designed to reduce unnecessary hospital admissions and/or delayed discharges. Specific projects which received funding in these regards included The Integrated Autism Service, The Welsh Community Care Information System (WCCIS), and The Social Value Network/Forum. More specific examples of Cardiff & Vale of Glamorgan ICF funded projects are outlined below. These projects have been categorised according to the themes described in section 6.2, which were developed following engagement and communication with various ICF stakeholders across the Cardiff & Vale of Glamorgan RPB (Cardiff & Vale of Glamorgan RPB, 2022).

- Independent living service (~£543,000): Providing a primary point of contact to various preventative and independent living services across Cardiff.
- Reducing loneliness and Isolation (~£40,000): Mapping current needs and service provision and working to support the development of the Ffrind I Mi initiative within the region.
- Therapeutic Intervention Services (~£377,000): Facilitating the provision of therapeutic support to children who are looked after or adopted, to prevent placement breakdown and enhance the local provision of specialist services.



- Enhanced Education Interface – Autism (~£71,000): Strengthening the regional development of ASD services within the education sector. Working to promote more inclusive approaches within the workforce relevant to supporting children with ASD, while supporting early assessment of need and the provision of targeted interventions.
- Dementia Friendly Region (~£78,000): Recruitment of a Dementia Friendly Communities Co-ordinator to drive the Dementia Friendly agenda forward.
- Early Help Plus (~£200,000): Service commissioned with Platform to support parent carers of children and young persons with emotional health and wellbeing needs. Ensuring that there are mental health workers available to support families, while working to embed front door arrangements within the local authority.
- Closer to Home/Support Planning (~£171,000): Provision of a pilot service available within the Vale of Glamorgan which works to build independence and community integration in adults with learning disabilities so that the need for statutory services may be reduced.
- Learning Disability Enablement (~£117,000): Delivery of a review function which aims to reduce case management requirements pertaining to adult learning disability services within the Cardiff region.

6.5: Regional Integration Fund (RIF)

The RIF reflects the intended evolution of the ICF and the Transformation fund for the period spanning 2022-2027. A total of £144.7 million has been pledged to further support the ICF projects in embedding models of care into core services while realising the potential of new projects which fit the outlined parameters. This new fund sets to bring together multiple streams of funding to better support community-based care and the health and well-being of individuals and their communities, focussing on supporting families to stay together safely while providing home from hospital services and accommodation-based solutions. Streamlining funding pathways in this way may also function to minimise

administrative burden while also striving to provide sustainability in planning and investment for new models of care by relying on partners to bring forward matched funds, thus encouraging a long-term commitment to more effective models of care. Transforming the outdated, siloed working embedded within health and social care structures and replacing them with new, more integrated models of care is considered the primary strategy for optimising the health and wellbeing of populations across Wales (Welsh Government, 2022).



6.6: Cardiff Council & Vale of Glamorgan Council RII Activities:

Along with involvement in several ICF projects identified in the previous section of this report, both Cardiff Council and the Vale of Glamorgan Council are active in the Health and Social Care RII arena. Both Councils are committed to improving the lives of individuals and communities and have worked collaboratively to identify and implement strategies to better serve the health and wellbeing needs of populations across Cardiff and the Vale of Glamorgan. Examples of collaborative or individual Council RII activities are detailed.

Learning Disabilities Report: What Matters to People

Cardiff Council and Vale of Glamorgan Council have worked collaboratively in partnership with Cardiff and Vale University Health Board to better understand the health and social care needs of individuals with learning disabilities, such that support services may be designed to deliver the outcomes that people want.

Drawing on insights gained from individuals with learning disabilities, families, carers and charity organisations, the respective councils have been working to find out what matters to people to ensure that services help people with learning difficulties to feel valued, autonomous, and included. In this regard, individuals with learning disabilities, their carers and family members highlighted the need to feel healthy and well, and the importance of having opportunities to engage in meaningful work and volunteering activities such that they may feel engaged in their communities. Moreover, stakeholders highlighted the importance of having access to understandable information relating to healthcare and services, the need to exert choice and control and feel included and listened to, and the desire to live as independently as possible and have choices in where they live. Finally, stakeholders emphasized the need for timely support and respite, and better teamwork between children and adult services, and enhanced co-production between health and

social services more broadly. Following on from this, Cardiff council and Vale of Glamorgan council worked with the support of The Learning Disability Partnership Group to devise a plan to meet these needs and make the necessary changes in service provision within five years. Targets and revisions to services hereby included partnering with organisations to facilitate independent living through means of assistive technology, drawing on the skills of Speech and Language Therapists to ensure information is accessible and easy to understand, and asking more service users to be involved in the checking of services.

These activities demonstrate the contributions of both Cardiff Council and Vale of Glamorgan Council in working to improve the health and wellbeing of individuals and communities across Cardiff and the Vale of Glamorgan. Importantly, the collective efforts of the respective Councils, Health Boards and Collaborative Partners have been used to inform further RII priorities for learning disability services in Cardiff and the Vale.

Bay Unit, Ty Dyfan:

Cardiff Council and Vale of Glamorgan Council worked alongside Cardiff & Vale University Health Board to secure funding to support a range of projects. Bay Unit at Ty Dyfan represents one of these project achieved through collaboration. The unit was opened in 2016 and enables people to be discharged earlier from hospital while still receiving care and support before returning home. The unit's success equates to c.£500k reduced expenditure on long term community care packages because of people being successfully re-abled.

Innovative Technology use:

The Vale of Glamorgan Council have ensured the uptake and use of technology as part of a combination of efforts which are implemented in their innovation and research strategies, throughout the council a range of examples exist. Such as, the council agreed a contractual arrangement with Boots to implement a digital medication administration system in our residential care homes which will assist in minimising risk of medication errors, enhance care quality and staff capacity, and will strengthen communication between care homes and pharmacies. A further example Technology use by the Vale of Glamorgan council is its embrace of digital solutions and technology which has enabled them to improve quality and efficiency of the care and support services they provide, for example completion of assessments and interventions, Day Services opportunities and career services, video conferencing, Flying Start sessions, the Insight App and See Me project.

Vale of Glamorgan Council Corporate Improvement Plan:

As part of its Corporate Improvement Plan 2020-25 (Vale of Glamorgan Council, 2022), Vale of Glamorgan County Council have set out how they will support people at home and in their community, the health and social care aspects of this approach include but are not limited to; Encouraging people to have an active and healthy lifestyle, provide opportunities for cycling or walking travel, provide seamless health and social care services through partnerships, provide care and support to children and families in need, provide person centred support to adults in need, ensure timely and appropriate mental health & emotional well-being support, undertake safe-guarding duties.

We strengthened support to all carers via the Carers Gateway and made financial contributions to help carers adversely affected by the pandemic. We also provided respite through provision of 1-3 hours of support and established a carers expert panel to ensure that the voices of carers are heard and shape the services they receive resulting in 97% of carers feeling involved in designing the care and support plan for the person that they care for.

6.7: Cardiff Council Corporate Plan: Capital Ambition

Each year the Council delivers around 700 services to over 365,000 residents in 154,000 households, helping to support local communities and improve the lives of Cardiff residents. As part of Cardiff's Corporate Plan (2021-24) 'Delivering Capital Ambition,' Cardiff Council have set out how they aim to support individuals and communities within and across the City of Cardiff. Commitments identified in the Capital Ambition include delivering new schools, continuing one of the UK's most ambitious Council house-building programmes, leading a low-carbon transition across the city, as well as supporting the creation of new jobs and prosperity through major projects. Each supports the Council's ambition to reduce the large and growing inequalities between communities, and ensures all citizens can contribute to, and benefit from, the city's success.

As an exemplar of their commitment to reduce inequalities and promote inclusion, Cardiff Council have sought to ensure that the views and priorities of all its residents are included. Cardiff Council is dedicated to supporting research and innovation and enlists the services of the Cardiff Research Centre (CRC) to facilitate this. This Research Centre delivers robust research, information and consultation services, providing advice and support on all aspects of research and facilitating the collection, analysis and interpretation of both quantitative and qualitative data. Cardiff Research Centre is part of the City of Cardiff Council's Policy, Partnerships and Community Engagement Service, which has supported the delivery of several surveys and research reports.

One example of this is a survey reporting on the views of youths which have been drawn upon to devise a strategy to build a more 'Child Friendly Cardiff.' Cardiff Council regularly consults with residents, but typically sees lower participation from children and young people. As such, the Child Friendly Cardiff survey was designed to capture children's views on a wide range of topics, including understanding their awareness of Children's Rights, satisfaction with council and other public services, and what issues matter to them. Over 6,000 children took part in the survey, and their responses were used to understand how the needs of children and youths across Cardiff could be better served by Cardiff Council. This demonstrates how Cardiff Council are working to ensure that children and young people are informed, given a voice and can help influence decisions about

6.8: The ENRICH Cymru Network:

The ENRICH Cymru Network was established in 2017 and is an all-Wales network that was created following stakeholder consultation instigated by the Wales School for Social Care Research (WSSCR) and the Centre for Ageing and Dementia Research (CADR). Findings of this consultation process suggested that a care home research network in Wales would be beneficial for care homes to both profit from known evidence and to contribute towards future research agendas, owing to their extensive practice-based knowledge. This also aligned with similar ENRICH network activity that had already been established in parts of England.

The aim of ENRICH Cymru is to facilitate the delivery and development of research in care home settings to improve the lives of residents and staff in Care Homes across Wales. Even in its short existence, ENRICH Cymru has demonstrated impact in a few different ways including most recently, Sw-n-y-Mor care centre (the first home to join ENRICH Cymru) has been involved with developing the HCRW funded Preliminary Exploration of the Role of Paramedics in Care Homes portfolio study (PERCH) in conjunction with the PRIME Centre Wales. In addition, numerous opportunities have arisen for homes to be involved in developing future research, and this has included participating in Social Care Innovation lab research development sessions. Another example is the opportunities offered to care home managers to review funding applications e.g. (SENIOR) using role substitution in care-homes to improve oral health (successfully funded by NIHR HS&DR £1.43M). The ENRICH Cymru network is a dual delivery and development model. Key features of the model in Wales are:



Member Based Network:

Care homes become members of the network. At the time of writing 22 homes are enrolled in the network with a total: 1,126 residents (2 homes registered on Level 1 and 20 homes registered on Level 2). The difference in levels pertains to a difference in commitment level: Level 1 indicates the home would like to receive updates and information about the latest research studies but are not able to participate in any current studies. Level 2 refers to a willingness to consider taking part in any suitable current research projects, as well as receive updates on the latest results. The level of involvement is regularly reviewed with the homes, with the opportunity to change levels whenever there is a change in capacity within the home. A total of 18 homes in the network have been 'research active' to date (engagement with 1+ study and/or research development). The geographical spread of the registered homes to date is as follows: 10 homes in South Wales; 12 homes in North Wales.

Promotion of Research Studies and Commercial Research:

The network in Wales promotes current and upcoming health and social care research studies and facilitates the exchange of research ideas and knowledge into practice. This includes private sector studies and commercial research alongside public sector initiatives. In the short time that ENRICH Cymru has been established, the network has successfully supported a Danish tech company to carry out development work with care homes in Wales to progress an innovative piece of blood glucose monitoring equipment to the final development phase.



Co-creation of Future Research:

Unique to Wales, the network has been focused on fostering the co-creation of future research, which is of the highest priority to the current issues in the Welsh Care Home sector to improve the quality of care and quality of life for those residing and working in care homes. This is to support the skills, knowledge, confidence, and motivation of those who are engaged in research and wish to be more engaged and to leverage opportunities to gain resources for social care research.

Collaboration with Welsh and International Collaborators:

The ENRICH Cymru network is a collaboration between the HCRW funded pan-Wales CADR and the Health and Care Research Wales Support & Delivery Centre and works closely with the national teams in promoting various initiatives and projects which are supported through the centres. The ENRICH Cymru network has formed a good collaborative relationship with PRIME Centre, for example, the progress made throughout the HCRW pathway to portfolio funded research development group has now resulted in a further funding application for a feasibility study into the proactive role of paramedics working in care homes across Wales. Subject to funding and growth of the ENRICH Cymru team, there are several opportunities to work nationally in the development of new projects to benefit the care home sector.

The network is closely affiliated with the larger national UK ENRICH regional networks in England & Scotland, with the added opportunity to share learning and co-design the network to make it fit for purpose in Wales. This close link also allows the sharing of studies including the Effective Healthcare Support to Care Homes, Manchester University. There is also a collaborative link with the HCRW Support and Delivery Centre.

7.0: Academia (Universities and Colleges):

Academic institutions (in this case, Higher Education Facilities) play a central role in both the creation of knowledge and its subsequent translation into tangible outputs that support both social and economic development. Alongside such research and innovation activities, academia also has a critical role to play in supporting the development of the future Health and Social Care workforce in Wales, alongside its wider knowledge and skills base.

Cardiff and Vale RPB demonstrate good academic intuition, including Cardiff University, and the University of South Wales. In 2020, Cardiff University was ranked as the 37th best university in the UK by the Guardian (Guardian, 2020), whilst The University of South Wales ranked 66th, climbing thirty-two positions from the previous year when it ranked 98th (Guardian, 2020).

As will be detailed in the following section, these universities provide a wealth of RII capacity, facilities, and expertise across the realms of Health and Social Care. This also includes a vast range of ongoing RII projects, programmes, and initiatives.

The following section of this report provides greater detail in relation to the academic institutions and related RII activities. To ensure this is structured in a clear and concise manner, a brief overview of the institution is initially provided before Health and Social care related RII and infrastructure projects are presented.

7.1: Cardiff University.

Cardiff University is a research-driven institution with significant strength and RII focus within the area of Health and Social Care. Cardiff University consists of three major academic colleges; the College of Arts, Humanities and Social Sciences; the College of Biomedical and Life Sciences; the College of Physical Sciences and Engineering. Each of the colleges host several academic schools. Of relevance to this report is the College of Biomedical and Life Sciences, which consists of seven major academic schools (below), which includes Wales' only dental school:

- Cardiff University School of Biosciences
- Cardiff University School of Dentistry
- Cardiff University School of Healthcare Sciences
- Cardiff University School of Medicine
- Cardiff University School of Optometry and Vision Sciences
- Cardiff University School of Pharmacy and Pharmaceutical Sciences
- Cardiff University School of Psychology

Other Cardiff University academic schools that might be of interest to stakeholders across the Health and Social Care domain include the School of Social Sciences; the School of Chemistry; the School of Computer Science and Informatics; and the School of Engineering.

Cardiff University School of Medicine has four major research divisions which include; Cancer and Genetics, Infection and Immunity, Population Medicine and Psychological Medicine and Clinical Neurosciences. Supporting this, the medical school is also home to several internationally renowned research groups and related centres of excellence, some of which are identified overleaf.

7.1.1: Cardiff University's Innovation Strategy:

Cardiff University's Innovation Strategy 2018/23 outlines an ambition to *"be known as the home of Innovation, with a thriving innovation culture and the aim to excel in connecting business, government and society with our academics and our students."* (Cardiff University, 2018). The strategy builds upon the Innovation Systems initiative first described in 2014 which *"brings together a new campus, centres of excellence, spaces for creativity and novel ways of working. It is driven by cutting edge research, technology transfer, business development and enterprise. Its projects will connect the university to the city-regions innovation ecosystem, forging new partnerships and attracting inward investment"* (Cardiff University, 2018).

To support this ambition, the University aims to foster economic growth and social progress by focussing on four key areas of development, including; creating a conducive environment to support innovation; working across sectors to drive productivity through research, development and innovation; fostering conditions that develop innovative and entrepreneurial academics; and developing workforce skills needed to 'energise' the economy over coming years (Cardiff University, 2018). The following section now details a few Health and Social Care related RII assets (centres and departments) based at Cardiff University Neurosciences. Supporting this, the medical school is also home to several internationally renowned research groups and related centres of excellence, some of which are identified overleaf.

7.1.2: Cardiff University RII Assets:

The Centre for Development, Evaluation, Complexity, and Implementation in Public Health Improvement (DECIPHer):

DECIPHer, a public health centre of excellence, consists of a group of multi-disciplinary experts brought together to tackle a diverse array of public health challenges, including amongst others: mental health and wellbeing; diet and nutrition; physical activity; and tobacco, alcohol, and substance misuse. The centre places particular emphasis on 'developing and evaluating multi-level system approaches that will have an impact on the health and wellbeing of children and young people' (DECIPHer, 2021). In addition, the centre has also developed a few Public Health networks, including the Public Health Improvement Research Network (PHIRN). Furthermore, DECIPHer also runs educational courses.

The National Centre for Mental Health (NCMH):

The NCMH based at Cardiff University is funded through Health and Care Research Wales and draws upon expertise from a range of partners including Cardiff, Swansea, and Bangor Universities to explore the causes of mental health issues. The MCMH aims 'to help improve diagnosis, treatment and support for the millions of people affected by mental ill-health every year, as well as tackle the stigma faced by many' (National Centre for Mental Health, 2021). Research undertaken by the NCMH centres upon three related thematic causes of mental health issues, including psychosocial research, biological research, and neuroimaging research.

Cardiff University Neuroscience and Mental Health Research Institute:

The Institute aims to translate scientific findings into greater understanding and better diagnosis of mental illness. The institute was established in 2010, with the ambition of addressing the major societal challenge of mental illness. The institute has three main research themes, which include: Neuroexcitation and Neuroplasticity; Neurodegeneration and Repair; and Neurodevelopment (Cardiff University, 2021a).

Cardiff Regional Experimental Arthritis Treatment and Evaluation Centre (CREATE):

The Cardiff Regional Experimental Arthritis Treatment and Evaluation Centre based within the School of Medicine, works alongside patients from CVUHB to develop treatment options to support patients with Rheumatoid and Psoriatic Arthritis. The aim of the centre focuses on the development of treatments and diagnostic tests to help patients with Rheumatoid and Psoriatic Arthritis achieve remission. This centre also works closely with the Biomechanics and Bioengineering Research Centre Versus Arthritis which is also based at Cardiff University (Cardiff University, 2021b).

Cardiff Health and Social Care Improvement Research:

Cardiff Health and Social Care Improvement Research is a research network in the university that transcends thirteen different schools at the institution to derive multi-disciplinary approaches and partnerships working to improve the quality of Health and Social Care (Cardiff University, 2021). Activity centres upon using multi-disciplinary expertise to target challenges related to six core themes across Health and Social Care, including safety, effectiveness, patient-centredness,

Cardiff University Brain Research Imaging Centre (CUBRIC):

CUBRIC draws together a multi-disciplinary array of expertise related to brain imaging, mapping, and stimulation to understand the underlying causes of neurological and psychiatric illness. Research at CUBRIC falls under eight themes; clinical neuroimaging; cognitive neuroscience; cognitive electrophysiology; functional magnetic resonance imaging; mapping the brains electrical activity; microstructural imaging; non-invasive brain stimulation methods; and sleep research (Cardiff University, 2021c)

The Wales Gene Park (WGP)

The Wales Gene Park is a Health and Care Research Wales funded Infrastructure Support Group, which is hosted by Cardiff University at the Division of Cancer and Genetics. The WGP's mission is to 'support and promote medical genetic and genomic research and its application to healthcare in priority areas identified by the Welsh Government to improve health and wealth in Wales and engage the public and health professionals to improve understanding of the opportunities and challenges that arise.' (Wales Gene Park, 2021).

Cardiff University Centre for Trials Research:

Cardiff University's Centre for Trials Research, aims to support population health and wellbeing by developing excellence in clinical trials and wider studies. The centre is a registered clinical trials unit with the UK Clinical Research Collaboration and consists of four main divisions: Cancer, Infections, Inflammation, and Immunity; Mind, Brain, and Immunity; and Population Health. The centre also has several research themes, which include Behaviour Change, Cancer, Children and Young People, Infections, Methods, and The Older Person. The centre has strong clinical trials expertise and supports staff working across Health and Social Care when developing research funding proposals (Cardiff University, 2021d).

Cardiff Institute for Tissue Engineering and Repair (CITER):

CITER is a world-renowned research centre, which focuses on research related to tissue repair, regeneration, and rehabilitation. The centre has a number of major research themes, which include Stem Cell Science; Tissue Engineering and Repair, and Disease Translation (Cardiff University 2021e).

The Dental Public Health Unit and The Welsh Oral Health Information Unit:

The Dental Public Health Unit based at Cardiff University conducts research that centres upon oral health improvement, with a wide range of related research activities. The unit has several research themes, which include Preventative Dental Technologies; Oral Health Improvement; Oral Health of Older People and Vulnerable Groups; Oral Health Guidelines; Oral Epidemiology; and Public Health aspects of antimicrobial use in Dentistry. Alongside this, Cardiff University is also home to the Welsh Oral Health Information Unit (WOHIU), which works alongside the Wales Dental Epidemiology Co-ordinator to *'plan and deliver the NHS dental survey programme for Wales'* (Cardiff University, 2021f). Projects WOHIU include the Designed to Smile programme.

The Marie Curie Palliative Care Research Centre Cardiff University (MCPCRC):

The MCPCRC undertakes research that centres upon improving 'the care and experience of patients in the advanced stages of their illness, and their carers' (Marie Curie, 2021). The centre has three main themes, including Patient Experience (including PPI research); Rehabilitation and Cachexia; and Thrombosis. (Marie Curie, 2021).

Wales Cancer Research Centre:

The Wales Cancer Research Centre, based at Cardiff University's Health Hospital Campus, is a national body co-hosted by organisations including Cardiff University, Swansea University and NHS Wales. The centre undertakes cancer research across four main work streams, which include Personalised Prevention; Enhanced Diagnosis; Improved Patient Outcomes; and Optimised Patient Experience (Wales Cancer Research Centre, 2021).

Wales' (Cardiff University, 2021f). Projects WOHIU include the Designed to Smile programme

7.1.3: Cardiff University Assets (Others):

Other notable research centres departments and programmes based at Cardiff University that might be of interest to those working in Health and Care are detailed below in Table 10.

Table 10: Other notable research centres departments and programmes based at Cardiff University.

Neuroscience and Mental Health Research Institute	Research at the NMHRI centres on major causes of mortality disability related to Psychiatric and Neurodegenerative conditions.
Musculoskeletal Biomechanics Research Facility	The MSKBRF focuses on research related to biomechanics and MSK health. Using advanced equipment and expertise, the facility undertakes cutting edge research, application, and translation activities.
Wales Centre for Evidence-Based Care	The Wales Centre for Evidence-Based Care aims to 'develop the science of implementation and promote evidence-based practice.'
Medicines Discovery Institute	The Medicines Discovery institute works to translate the findings of Biomedical research into new drugs and treatments.
European Cancer Stem Cell Research Institute	This centre focuses on developing an understanding of the impact that stem cells have across a range of cancers.
Sustainable Places Research Institute	A multi-disciplinary institute that focuses on global sustainability challenges including issues related to health and social policy.
Biomechanics and Bioengineering Research Centre Versus Arthritis	This research centre has four main research themes related to Arthritis, which include: Preclinical research, High Tibial Osteotomy, Total Knee Replacement (TKR), Optimisation of Knee Rehabilitation (KNEE REHAB).
Biomechanics and Bioengineering Research Centre Versus Arthritis	This research centre has four main research themes related to Arthritis, which include: Preclinical research, High Tibial Osteotomy, Total Knee Replacement (TKR), Optimisation of Knee Rehabilitation (KNEE REHAB).
World Health Organisation Collaborating Centre for Midwifery Development	This centre is a member of an international network that supports the development of evidence related to the development of midwifery practice and education.
Cardiff Experimental Cancer Medicine Centre (ECMC)	ECMC brings together translational research expertise across a wide range of cancer specialisms to deliver 'innovative, translationally rich biomarker-driven adaptive trials to a diverse range of cancer patients.'

Having described some of the major Health and Social care RII assets at Cardiff University, the following section now provides an overview and analysis of the institution's research activity. This begins by detailing the University's major research publication clusters related to 'Medicine', 'Nursing' and 'Health Professionals' drawing insight from SciVal (2021). Integrated within the described research

themes are elements of research related to Social Care, although as this domain is broad and relatively undefined, it has been difficult to group these into a single, overarching visualisation of performance.

7.1.4: Academia: Cardiff University Research Publication Clusters.

The research topic cluster map presented in Figure 12 depicts the Top 50 'medicine' related topic clusters associated with Cardiff University publications from 2011-2020 (SciVal, 2021). It is worth noting that SciVal records should only be used as a guide, as records might not be fully comprehensive. Cluster bubble size is proportional to the institution's publication output under each theme.

Although mainly illustrative, and again used to guide discussion, Figure 15 demonstrates the vast and diverse array of medical research being undertaken at Cardiff University. This also includes many 'Social Care' related topic areas such as a focus on the needs of people with intellectual disabilities and Autism. Figure 17 & 18 (pp. 89) provides a more detailed assessment of the 'medicine' related research topic clusters at Cardiff University (SciVal, 2021). This demonstrates strength and focus on a few areas including (amongst many others); Cancer; Immunotherapy; Schizophrenia and other Psychotic related conditions; Alzheimer's Disease,

Dementia and Other Neurological Conditions alongside other research areas related to Medical Education; Childhood Development; Autism and Glaucoma (see Figure 13). Although it is acknowledged that the assessment of institutional strength using research publications might be considered retrospective (due to the delays in translating research to publication), this provides an overview of research activity and focus and allows comparisons to be made across institutions.

Alongside the 'medicine' related research topic clusters identified in Figure 16 overleaf offers insight into 'nursing' and wider 'health professions' topic clusters at Cardiff University.



Figure 15: 'Medicine' Research Topic Cluster Map Cardiff University 2011-20 (Source: Adapted)



Figure 16. Research Topic Clusters 'Health Professions' (Left) and 'Nursing' (Right) based upon Publications Researchers at Cardiff University have Contributed to from 2011-2020 (Source: Adapted from SciVal, 2021a & SciVal, 2021b).

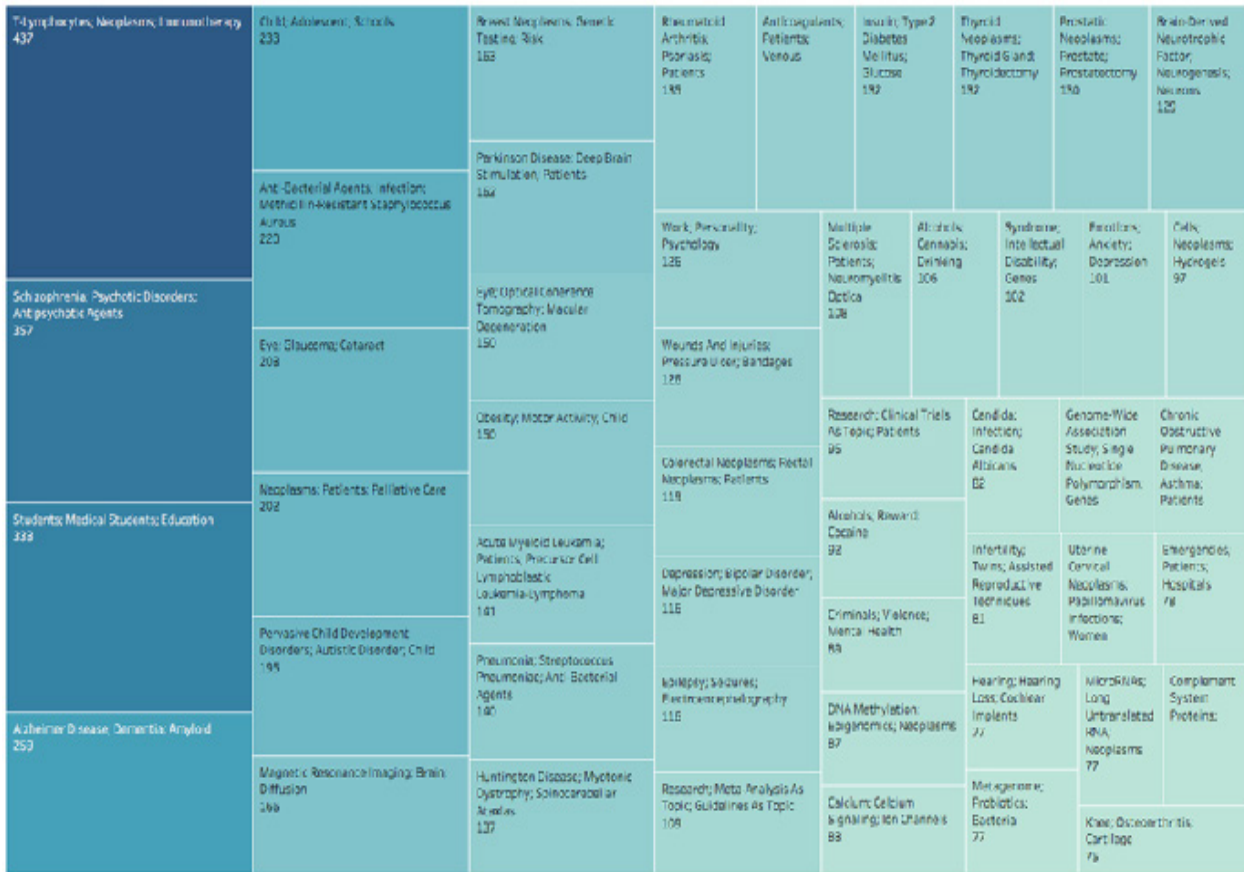


Figure 17: Cardiff University Top 50 Research Topic Clusters Medicine 2011 – 2020 (Data Source: SciVal, 2021).

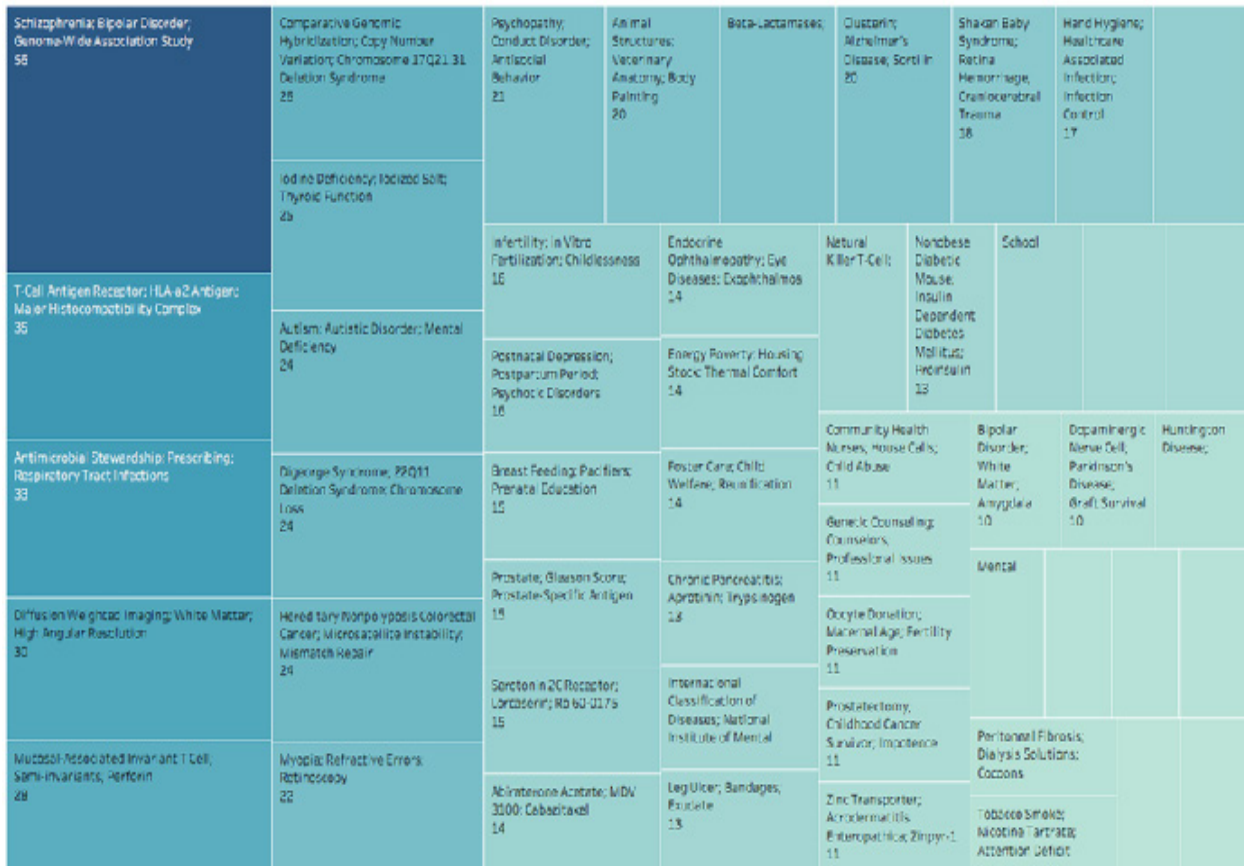


Figure 18: Cardiff University Top 50 Research Topics: Medicine 2017 – 2020 (Data Source: SciVal, 2021).

Figure 19 shows the average Field-Weighted Citation Impact (FWCI) of Cardiff University publications across an array of topic areas related to 'medicine' from 2010-2019 (SciVal, 2021c). FWCI figures are based upon worldwide article level metrics, which compare publication citation numbers against the expected rate for other publications of a similar age, type, and field. FWCI metrics can thus be used as a proxy-indicator of publication or research quality, although FWCI measures might disadvantage multi-disciplinary works.

As is demonstrated in Figure 19, where a unit of 1 represents the average or expected FWCI, Cardiff University publications exceed the expected FCWI across a broad range of selected medical research specialisms. This suggests high quality research output, particularly in areas associated with; Gastroenterology; Epidemiology; Dermatology; Reproductive Medicine; Cardiology and Cardiovascular Medicine; Infectious Disease; Microbiology; Psychiatry and Mental Health; Obstetrics and Gynaecology; and Paediatrics, Perinatology and Child

Health (SciVal, 2021c). In addition, although not included in Figure 17, areas related to Urology (FWCI: 5.02) and General Medicine (FWCI: 5.26) demonstrate strength at Cardiff University.

In fact, of the 48 medical specialisms captured under the theme of 'medicine' by SciVal (2021) Cardiff University publications only ranked below the expected FWCI of 1.0 between 2010-2019 in one area, which was; Critical Care and Intensive Care Medicine (SciVal, 2021c). However, other that were comparatively less strong included Emergency Medicine and Rehabilitation (FWCI: 1.05).

The following section of this report now provides an overview of funding application and awards associated with Cardiff University across the seven major UK Research and Innovation's (UKRI) research councils.

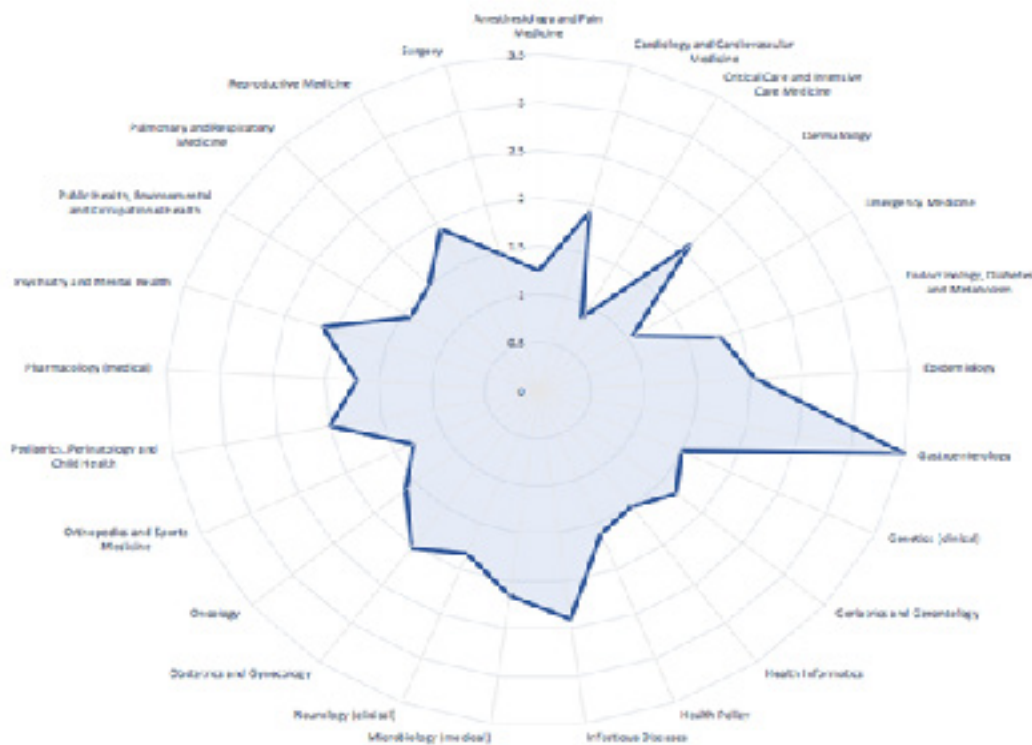


Figure 19: Average Field-Weighted Citation Impact (FWCI) of Cardiff University publications across an array of medical domains (SciVal, 2021c).

7.1.5: Cardiff University UKRI Research Council Grant

Comparing Welsh universities grant application funding data (UKRI, 2021), Cardiff University submitted the greatest number of Research and Innovation (R&I) grant applications to UK Research and Innovation's (UKRI) seven research councils between 2015/20 (Arts and Humanities Research Council (AHRC), Biotechnology and Biological Sciences Research Council (BBSRC), Economic and Social Research Council (ESRC), Engineering and Physical Sciences Research Council (EPSRC), Medical Research Council (MRC), Natural Environment Research Council (NERC) and Science and Technology Facilities Council (STFC).

In terms of application success, Cardiff University ranks second amongst all Welsh universities (where complete data sets were available) when comparing both award rates by number and award rate by value. However, it must be noted that Cardiff University submitted significantly more applications than other institutions, which might make direct comparisons less representative. Despite this, when considering success rate by number, determined by comparing the total number of applications with the

total number of applications awarded by UKRI research councils (2015-2020), Cardiff University achieved on average a 27.4% success rate, ranking only behind the University of South Wales. When examining award rate by value, in this case, determined by the amount applied for compared with the amount awarded (£K), Cardiff University again ranked second, this time behind Swansea University. A more detailed breakdown of UKRI R&I grant applications by Welsh universities (2015-2020) is provided in Tables 11 and 12 below, with graphical interpretations provided overleaf in Figure 20.

Table 11: UKRI Research Council Funding Award Comparison Across Universities in Wales by Number of Applications v Number of Awards (Source; UKRI, 2021).

Organisation	Year	Grant Category	Number of Applications	Number of Awards	Award Rate by Number (%)
University of South Wales	2015-20	Research and Innovation Grant	28	8	30.4
Cardiff University	2015-20	Research and Innovation Grant	919	251	27.4
Swansea University	2015-20	Research and Innovation Grant	326	79	24.2
Bangor University	2015-20	Research and Innovation Grant	189	40	21.2
Aberystwyth University	2015-20	Research and Innovation Grant	179	34	19
Cardiff Met. University	2015-20	Research and Innovation Grant	11	1	6.6

Table 12: UKRI Research Council Funding Award Comparison Across Universities in Wales by Amount Applied For (£K) v Amount Awarded (£K) (Source; UKRI, 2021).

Organisation	Year	Grant Category	Amount Applied For (£K)	Amount Awarded (£K)	Award Rate by Value (%)
Swansea University	2015-20	Research and Innovation Grant	224318	94136	35.6
Cardiff University	2015-20	Research and Innovation Grant	502067	158276	31
University of South Wales	2015-20	Research and Innovation Grant	13716	1775	27.6
Bangor University	2015-20	Research and Innovation Grant	80906	14578	19
Aberystwyth University	2015-20	Research and Innovation Grant	89622	12082	14.2
Cardiff Met. University	2015-20	Research and Innovation Grant	2927	59	7

Figure 20: UKRI funding award success 2015-20 comparison across six welsh universities (those who had complete datasets) (data source: UKRI, 2021)

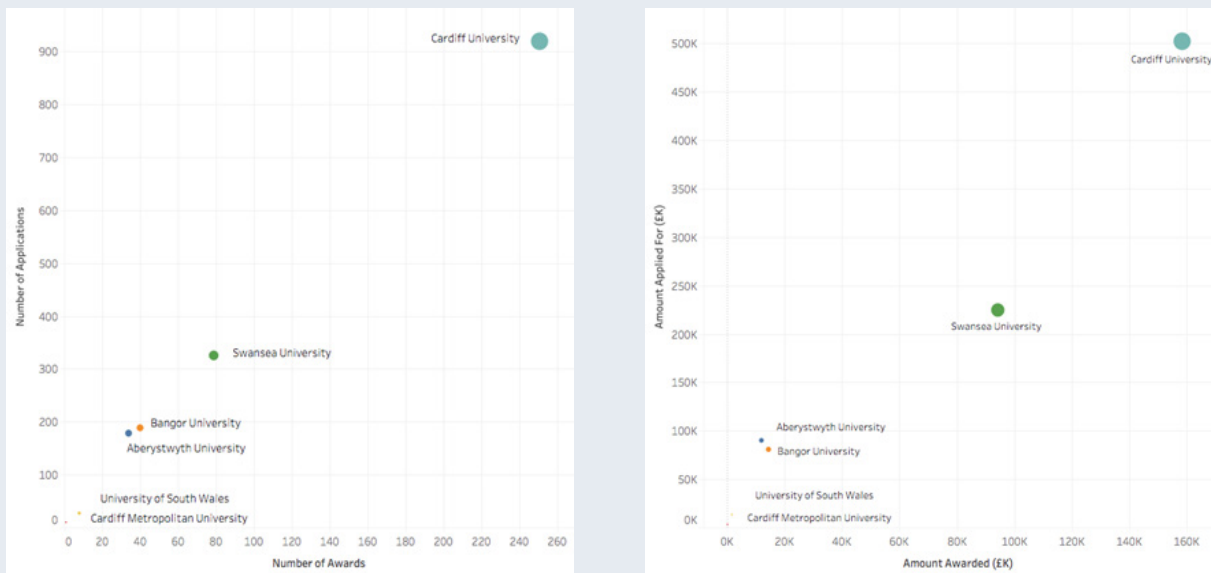
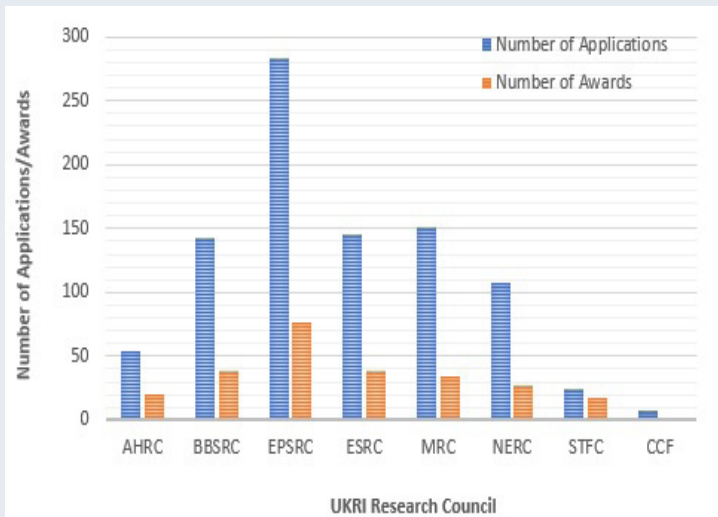


Table 13: Cardiff University Research and Innovation Award Breakdown 2015/20.

UKRI Council	Number of Applications	Number of Awards	Award Rate by Number (%)
AHRC	54	20	36
BBSRC	143	38	26
EPSRC	284	76	27
ESRC	146	38	25
MRC	151	34	22
NERC	108	27	24
STFC	25	17	74
Cross-Council Funds (CCF)	8	1	7

Table 13 (above) provides a detailed breakdown of UKRI applications and awards associated with Cardiff University (2015-2020) by each of the UKRI research councils. This demonstrates greatest success for Cardiff University relating to applications to the Science and Technology Facilities Council (STFC), with a success rate of 74%, although the number of applications to the STFC were relatively low compared with other research councils. This aligns with the strong scientific infrastructure base that has been developed at the University. Aside from Cross Council Funding (CCF), applications to the Medical Research Council had the lowest success rate (7%) that is equal to that of Cardiff Met (7%), which offers an area for potential growth. Figure 21 provides an overview of Cardiff University research and innovation awarded.

Figure 21: Cardiff University Research and Innovation Award Breakdown 2015/20.



Most funding applications to UKRI research councils from Cardiff University focussed upon the Engineering and Physical Sciences Research Council (EPSRC). This represented 44% of applications, with a comparatively high success rate of 31%. The EPSRC funding portfolio covers a range of sectors and specialisms, including research and innovation projects related to the development of new health and care technologies. EPSRCs remit is to 'provide a platform for future UK prosperity by contributing to a healthy, connected, resilient, productive nation' (EPSRC, 2021).

Table 14 overleaf details a few Cardiff University's successful UKRI awards since 2015. This highlights UKRI awards from across a range of research councils for a range of topic areas and projects.

Table 14: Examples of Successful Cardiff University Research and Innovation and Fellowship Award Applications between the period 2016-2020 (UKRI, 2021)

FY	UKRI Council	Grant Category	Project Title	Value (£k)
2016-17	BBSRC	Research and Innovation Grant	'Ensuring quality maternal care in an adverse environment'	505
2017-18	BBSRC	Research and Innovation Grant	'The Development of Eye Tissues via Human Induced Pluripotent Stem (iPS) Cells'	734
2019-20	BBSRC	Research and Innovation Grant	'How knowledge affects behaviour in a model system'	398
2015-16	EPSRC	Research and Innovation Grant	'Osteoarthritis Technology Network Plus (OATech+): a multidisciplinary approach to the prevention and treatment of osteoarthritis'	968
2016-17	EPSRC	Research and Innovation Grant	'A lab-on-a-chip for characterising and sorting cancer cells'	101
2017-18	EPSRC	Research and Innovation Grant	'Physiologically inspired simulation of sensorineural hearing loss'	298
2018-19	EPSRC	Research and Innovation Grant	'A cheap and low-profile wearable device for early detection of osteoarthritis'	325
2019-20	EPSRC	Research and Innovation Grant	'Exploiting bacterial virulence to trigger antimicrobial release from orthopaedic implants'	264
2017-18	ESRC	Research and Innovation Grant	'Does local authority care make a difference to the lives of vulnerable children? Longitudinal analyses of a retrospective electronic cohort'	155
2018-19	ESRC	Fellowship	'Looked-after children in Wales: An analysis of the backgrounds of children entering public care'	94
2018-19	ESRC	Fellowship	'Let's have a walk in a virtual world: using Virtual Reality technologies to study the visual guidance of walking'	93
2019-20	ESRC	Research and Innovation Grant	'Housing matters: A comparative study of the relationship between housing and poverty in Europe'	200
2016-17	MRC	Fellowship	'Investigating the inter-relationship between diabetes and children's educational achievement.'	395
2016-17	MRC	Fellowship	'Understanding the role of DNA repair in Huntington's Disease pathogenesis: towards new therapeutic targets'	310
2017-18	MRC	Research and Innovation Grant	'Early-onset depression: characterising development and identifying risks'	764
2017-18	MRC	Research and Innovation Grant	'Adaptation of evidence-informed complex population health interventions for implementation and/or re-evaluation in new contexts: New guidance'	320
2019-20	MRC	Research and Innovation Grant	'Targeting ERK signalling to ameliorate intellectual disability and autism spectrum disorder associated with chromosomal rearrangements at 16p11.2'	1205

7.1.6: Cardiff University Infrastructure Project: Innovation Camp

Cardiff University is also investing significantly in its infrastructure to support innovation activity through its state-of-the-art Innovation Campus. The £300m Innovation Campus development is located at Maindy Park and began in 2018, with two buildings already complete, including the Hayden Ellis building which integrates experts across Schizophrenia, Alzheimer's and Stem Cell research areas, alongside the Cardiff University Brain Research Imaging Centre (CUBRIC), a European centre for brain-related research. Planned future developments of the Cardiff University Innovation Campus also include two further developments designed to support and drive innovation across the region.

The first is SPARK, a social science research park (see brochure) with a mission *"to develop innovative solutions to societal problems through collaborative research activity"* (Cardiff University, 2020). SPARK aims to bring *"together interdisciplinary research groups to address issues that affect us all, from the causes of unemployment to ways of making us healthier and safer. Pooling expertise under one roof will allow us to work in new ways as we develop and explore answers to these problems"* (Cardiff University, 2020).

In addition, SPARK will also play host to the Cardiff Innovations Centre, which *"will be a home to people and facilities that help turn great ideas into growth across Wales and beyond. Comprising 17,500 sq. ft of dedicated space spread across 4 floors, Cardiff Innovations @sbarc will be equipped with lettable office space from 226sq.ft to 1163 sq. Ft, formal and informal meeting areas, high-end conference facilities, 4240sq.ft of wet lab space and joint*

exhibition and presentation areas including conference space for up to 200 people" (Cardiff University, 2020).

Additionally, the Innovation Campus will also host the Translational Research Hub (TRH). *"The Translational Research Hub (TRH) will foster partnerships with national and international enterprises to promote academic-to-business, and business-to-business relationships and fuel economic growth in Wales and beyond..... High-tech lab space will support excellent research alongside facilities designed for industrial collaboration, helping to overcome traditional barriers between academia and commercial application."* (Cardiff University, 2020a). The Translational Research Hub will also house the Institute for Compound Semi-Conductors and Cardiff University's Catalysis Institute. More information about the Innovation Campus can be found on the Cardiff University website.

The infrastructure described above will also complement existing facilities at the University, including the Cardiff Medicentre. Cardiff Medicentre is an incubation facility for Medtech and Biotech start-ups based at the Health Campus at The University Hospital of Wales (UHW) in Cardiff. The Medicentre is a joint initiative between Cardiff University and CVUHB, which supports businesses by providing incubation space as well as a 'knowledgeable and vibrant' business support team. The centre has had demonstrable success in supporting the acceleration of companies into national and international Life Science ecosystems and related markets.



7.1.7: The Clinical Innovation Partnership:

The Clinical Innovation Partnership is an agreement between Cardiff University and CVUHB which aims to drive better patient health and care whilst also supporting economic growth (Cardiff University, 2021g). The partnership aims to “accelerate the translation of clinical innovation into improvements in health and clinical services” (Cardiff University, 2021g) and its mission is to create “a step-change in accelerating the translation of clinical innovation into improvements in health and clinical services” (Cardiff University, 2017). The partnership has been formalised through a clinical innovation strategy and brings together expertise from both partners to tackle a range of health-related challenges including:

- The development of new health products to improve patient health outcomes.
- Precision Medicine and related diagnostics.
- Dementia.

This partnership has demonstrated a positive impact, which is outlined by a few case studies, which can be found on the related website.

7.1.8: CEDAR Health Technology Research Centre:

CEDAR Health Technology Research Centre is led in partnership by Cardiff University and Cardiff and Vale University Health Board. Based within Cardiff Mediacentre (see pp. 98), CEDAR primarily focuses on research and evaluation activities related to medical devices, medical diagnostics, and interventional procedures, although also supports service improvement and service redesign initiatives (CEDAR, 2021). The centre possesses a wide array of expertise, including amongst others; clinical trial management, health economics, analysis, and statistics, as well as the ability to measure and apply Patient Recorded Outcome Measures (PROMS). Working with partners from across the NHS, academia, industry, public and third sectors, CEDAR is involved in four project types, namely, clinical trials, evidence reviews, evaluation, and value in health projects (CEDAR, 2021). Selected examples of such projects are detailed below, drawing insight from CEDARs website.

Table 15: Examples of CEDAR projects (CEDAR, 2021).

Project Type:	Project Title (with link to more information on the CEDAR website):
Clinical Trial:	• Hughes Abdominal Repair Trial (HART)
Clinical	• PREADAPT-Sepsis Trial
Evaluation	• PROMISE (Pressure Ulcers in Community Settings)
Evaluation	• ICEBERG Transformation Programme (Mental Health Services)
Evidence Review:	• NICE Medical Technologies Guidance (Med Tech Evaluation)
Evidence Review:	• Welsh Health Specialised Services Committee Policies
Value in Health:	• Value in Health (ViH) Programme Analytics and Evaluation

7.1.9: Cardiff University Health and Social Care RII Projects:



PROJECT 1:

Intensive Learning Academy (ILA).

The vision is for Wales to be a world leader and global authority in the 'spread and scale' of improvement, innovation and transformational change within health and social care. The All-Wales Intensive Learning Academy for Innovation in Health and Social Care (ILA: IHSC) will become a beacon for the identification, implementation and evaluation of the science and practice of innovation, transformation, scale and spread in Wales and beyond. It will build and sustain successive generations of leaders in Wales, who through the ILA, will have gained the capabilities, experience and relationships to nurture innovation then spread and scale at pace. The ILA will deliver the benefit of a step-change in innovation and transformation practice delivered through an alumnus of leaders and practitioners across the health and social care system. This will sit alongside a significantly enhanced absorptive capacity and practice realised through broader learning opportunities, delivered through a practice-based model of learning. The ILA will:

- Work in collaboration with partners to deliver world-class learning, research and teaching base that will equip leaders with the confidence, skills, and capability to realise innovation in health, care, and wellbeing.
- Enable Wales to retain and develop engaged and ambitious health and social care leaders that are adept in the knowledge and science of innovation practice needed to deliver the A Healthier Wales vision.
- Establish the mechanism to develop a combined offer between the partners that will support the ongoing development of 'boundaryless learning' in response to current and future innovation challenges and opportunities.



PROJECT 2:

Clinical Innovation Accelerator (CIA)

The Clinical Innovation Accelerator (CIA) at Cardiff University, part of the Accelerate programme (see pp. 128), is based on the Health Park Campus at the University Hospital of Wales, Cardiff. CIA has strong connections with regional partners across Health and Care and aims to 'accelerate the translation of clinical innovation' (Life Sciences Hub Wales, 2021).

The CIA based at Cardiff University is involved in a wide-reaching portfolio of Health and Social Care related innovation projects, along with public, private and third sector partners. Examples of such projects include:

- Precision medicine-based diagnosis of post-surgical complications in patients undergoing abdominal surgery.
- Personalised virtual surgery for optimised knee arthritis treatment
- And ensuring VR devices are fit for deployment in Health and Care settings during and post the Covid-19 outbreak.



PROJECT 3:

Applying expertise in viral genomics and bioinformatics to the COVID-19 pandemic response (provided directly by Cardiff University).

Next-generation sequencing (NGS) is widely used in research for rapid and cost-effective sequencing of pathogen genomes. The large-scale expansion of NGS for public health surveillance and routine clinical practice was, until recently, inhibited by a lack of robust and customisable data analysis pipelines. Cardiff University research was instrumental, within a consortium of leading UK universities, in establishing the bespoke MRC-funded Cloud Infrastructure for Microbial Bioinformatics (CLIMB; £5M). CLIMB is a high-performance computing facility customised for microbial data banking and analysis and collaborative sharing of NGS genomic data. Cardiff University researchers, with Public Health Wales, have used CLIMB to integrate NGS and high-end biocomputing analysis for investigation of pathogen evolution and transmission in local and global outbreaks. The team have used their bioinformatics expertise to improve the accuracy and speed of viral genome mapping; improve methods for identifying human DNA in microbial datasets [2]; and lead international efforts to track the spread of Sars-CoV-2 variants. This has led to the implementation of new and improved clinical services within PHW's Pathogen Genomics Unit, including

- A new ISO-accredited HIV service, reducing patient waiting times from around 6 weeks to 7 days, and delivering more detailed, sensitive, and cost-effective sequencing of RNA samples.
- An improved and more rapid influenza surveillance service was submitted to international surveillance systems within 7 days and facilitating geographic mapping of outbreak transmissions. The new analysis pipeline has allowed the highest level of influenza genome sequencing within the UK in recent years.
- Rapid sequencing of all Welsh Sars-CoV-2 samples from the start of the first UK-wide COVID-19 pandemic lockdown (March 2020), ensuring that Wales played a leading role in global Sars-CoV-2 sequencing. By December 2020, Wales had carried out more sequencing than any other nation except England and the USA.
- Tracking the spread of Sars-CoV-2 variants to inform government decision-making on the pandemic response. For example, the Cardiff team's collaborative research on the Sars-CoV-2 spike protein D614G mutation informed Government decisions (via SAGE) regarding the ongoing lifting of lockdown restrictions during June/July 2020 the ongoing lifting of lockdown restrictions during June/July 2020.



PROJECT 4:

A new model of shared decision-making influencing healthcare policy and practice (provided directly by Cardiff University).

Shared decision making (SDM) helps patients to make choices about their treatment alongside their clinician. Although widely accepted as the gold standard approach to making healthcare decisions, SDM is still not widely used in practice. Building on a strong history of developing effective patient decision aids, Cardiff University researchers have identified the key barriers to the implementation of SDM, and have developed a new model and training programme to facilitate the use of SDM in clinical settings

The Cardiff University model and training programme has been used in Health Boards across Wales, leading to changes in practice. One example of this is in the Musculoskeletal Physiotherapy Service at Aneurin Bevan University Health Board, where implementation of shared decision making has transformed how the service engages with its patients, improving attendance at clinics and increasing patient satisfaction. The Cardiff University model and training programme are also underpinning changes to dental services in Wales to enable a more patient-centred approach to decisions about treatment.

Cardiff University research and expertise in shared decision making has influenced the framing of recent NICE guidelines on shared decision making as well as the current health literacy plan for Scotland. Members of the Cardiff research team are also leading or members of working groups that are helping to define and set the international standards for patient decision aids.



PROJECT 5:

The Human Gene Mutation Database (HGMD): a major international resource for personalised genomics and disease diagnosis (provided by Cardiff University).

The Human Gene Mutation Database (HGMD) is the sector-leading database of human inherited disease-causing gene variations. The HGMD was developed in Cardiff as the first and only fully curated, annotated collection of nuclear genes. The HGMD also facilitated the development of the computational tool MutPred at Cardiff, which predicts subsequent changes in protein sequences and was found independently to be one of the best performing methods available for the prediction of mutation pathogenicity. Additionally, HGMD data formats have been adapted to integrate with next-generation sequencing (NGS), further enhancing application in clinical settings. Now distributed via a partnership with Qiagen GmbH, HGMD provides wide-ranging commercial benefits (with >600 HGMD Professional subscribers), as well as personalised genomic and clinical diagnostic benefits to the ~150,000 registered non-commercial users (via the free-of-charge public version). Examples of public clients include Genomics England, which use HGMD Professional to deliver the 100,000 genomes project. Diversification of Qiagen's customer base has included the provision of HGMD within China for the first time.



PROJECT 6:

Global adoption of the Dermatology Life Quality Index (DLQI) in clinical practice (provided directly by Cardiff University).

Skin conditions, such as eczema, psoriasis, and atopic dermatitis, affect around 60% of the adult population in the UK at some point in their lifetime (British Skin Foundation), and these can severely impact quality-of-life, as well as patient wellbeing. To support enhanced consideration of patient disability and wellbeing, the Dermatology Life Quality Index (DLQI) was developed by researchers at Cardiff. This simple-to-use questionnaire focuses on patients' perception of the impact of skin diseases on aspects of their health-related quality of life over the previous week. Between 2002 and 2004, the DLQI was further developed by research undertaken in almost 2,000 patients, with the publication of validated score bandings designed to enhance its use with patients, specifically with a score above 10 reflecting a major impact of disease on quality of life. This breakthrough meant that the DLQI could be used to enhance the appropriateness of clinical decisions, audit dermatology services, assess drugs and inform resource allocation.

Prior to Cardiff's development of the DLQI, including the generation of validated score bands for enhanced clinical use, there was no simple, and standardised quality-of-life measure for the clinical assessment of dermatological conditions. The 2005 publication of new, simple, quality-of-life assessment bandings accelerated DLQI's use in clinical settings, including increased use of the DLQI by the pharmaceutical industry as part of drug development studies. The inclusion of the DLQI in critical national and international guidelines, as well as the successful move towards a digital format, further extended the reach of the tool. These developments mean that the Cardiff-developed DLQI is now a vital clinical assessment tool as well as a commercially valuable one. Since its original inclusion in NICE guidelines for a range of dermatological conditions, DLQI is part of 15 new NICE Technology Appraisals for dermatological treatments and has been included in clinical practice guidelines in a further 31 countries worldwide. It has been licensed extensively for use in commercial and non-commercial clinical studies, the former generating more than £3.5M of revenue during the past 7 years.



PROJECT 7:

New clinical guidelines and specialist mental health services for women at risk of postpartum psychosis (provided directly by Cardiff University).

Postpartum psychosis is a severe psychiatric disorder that affects over 1,400 women in the UK each year. It is characterised by the sudden onset and rapid deterioration of symptoms and can lead to severe illness and even suicide. Cardiff researchers identified the prevalence and risk of postpartum psychosis - showing that women affected by mood disorders, those with bipolar type I disorder, were at particular risk of postpartum psychotic episodes. The team further quantified the individual risk factors for postpartum psychosis, such as the importance of family history and prior experience of postpartum psychosis during pregnancy.

The research helped to inform NICE guidelines for clinicians on antenatal and postnatal mental health. Following the publication of the NICE guidelines, the Cardiff team worked with a coalition of 100 voluntary maternal mental health organisations and provided evidence that supported a campaign to improve the number and geographical coverage of specialist perinatal mental health services. The campaign led to the allocation of £365M for perinatal mental health services. This led to a threefold increase in the number of Care Commissioning Groups in England delivering services that met the recommendations of the NICE guidelines and help for 30,000 women who previously could not access this specialist treatment. The funding has also enabled the recruitment of more specialist clinical staff, and the Cardiff team has worked with representative bodies such as the Royal College of Psychiatrists to develop and deliver training to support this new wave of specialist clinical staff.

The work has resulted in a transformation in standards of care and is allowing women at risk from postpartum psychosis to receive more effective monitoring and individualised clinical management, which in turn has enabled greater choice around having a family.



Table 16: Examples of Other Recent Cardiff University Research Awards (Source: Cardiff University, 2021g)

Research/Study Title:	Funding Duration:
Early positive approaches to support for families of young children with intellectual disability: Feasibility study (E-PAtS)	(01/01/2018 - 30/04/2020)
Community-based point of care (PoC) white cell count testing to improve pathways for cancer patients with sepsis whilst receiving chemotherapy: A pilot study - ADVANCE	(01/01/2018 - 01/10/2020)
Establishing a UK wide development and collaboration network for early career researchers in cell and gene therapy	(01/01/2018 - 31/12/2018)
Smoking cessation decision aid	(08/01/2018 - 31/03/2018)
WCRC/WCN programme of support to the cancer delivery plan research outcomes	(24/01/2018 - 31/03/2021)
Life-style exercise and activity package for people living with progressive Multiple Sclerosis	(01/02/2018 - 31/07/2021)
Virtual reality aid for ultrasound-guided needling	(01/02/2018 - 30/09/2019)
Framing the trajectories of decision-making in the context of predictive and prenatal genetic and genomic tests	(01/02/2018 - 31/01/2021)
PLUS, study - Pharmacy referral for Lung cancer Symptoms: A feasibility study to assess the role of pharmacists in lung cancer diagnosis compared to current pathways	(28/02/2018 - 30/08/2020)
Psychosocial stress during pregnancy ('prenatal stress' PNS)	(01/03/2018 - 31/08/2018)
Take-home naloxone Intervention Multi centre Emergency setting feasibility trial (TIME)	(01/03/2018 - 31/08/2020)
A clinical effectiveness investigation (incorporation a prognostic algorithm) to improve management of antibiotics for children presenting to primary care with acute cough and respiratory tract infection (CHICO)	(01/03/2018 - 30/11/2020)
The development and implementation of polygenic risk algorithms for stratifying individuals for future cognitive decline due to Alzheimer's disease in non-symptomatic and early cognitive impaired subjects	(01/03/2018 - 29/02/2020)
Green-Blue space exposure changes and impact on individual-level wellbeing and mental health: A population-wide record-linked natural experiment	(01/03/2018 - 28/02/2021)
MyTHICAL- Mental Health Informatics in Children Adolescents and young adults: How do my feelings become numbers?	(31/03/2018 - 30/03/2020)
e-Bug peer education research project	(01/04/2018 - 30/09/2018)
RESET Sleep: Regulating exercise substance use and eating through sleep	(01/05/2018 - 31/12/2018)
Social and economic consequences of health: evidence from causal inference methods and longitudinal intergenerational data	(01/05/2018 - 28/02/2021)
Development of a brief decision aid to present the benefits and risks of aspirin as a preventive strategy for bowel cancer for members of the public who are eligible for screening	(01/05/2018 - 01/05/2021)
Developing a short animation on what it means to have ADHD	(01/05/2018 - 31/10/2019)

7.2: University of South Wales.

The University of South Wales (USW) is a research-driven institution with various strengths and RII focus within the area of Health and Social Care.

The University of South Wales is made up of core faculties; the Faculty of Business and Society; the Faculty of Computing, Engineering and Science; the Faculty of Creative Industries; and the Faculty of Life Science and Education. Of particular importance to Health and Social Care RII related activity is the Faculty of Life Science and Education, which consists of four sub-units, outlined below:

- The School of Psychology, Early Years and Therapeutic Studies.
- The School of Education, Early Years and Social Work.
- The School of Health, Sport and Professional Practice.
- The School of Care Sciences.

Other departments at the University of South Wales that might be of interest to stakeholders across the Health and Social Care domain include the Department of Applied Sciences; the Department of Engineering; the Department of Computing and Mathematics. The departments detailed above are also home to a few research centres and groups, which are described in greater detail overleaf (pp. 104).

7.2.1: University of South Wales' Innovation Strategy:

In its Research and Innovation Strategy (USW, 2021), The University of South Wales outlines its ambitions to achieve excellence across research and innovation through delivering:

- 'Internationally reputable, high impact research in accelerated development areas: sustainable environment - crime, security & justice - health & well-being - creative.'
- 'Applied research and innovation that provides a measurable benefit to society and the economy.'
- 'Strong, mutually beneficial strategic partnerships that address global challenges, encourage knowledge exchange and inspire innovation and entrepreneurship.' (USW, 2021).

The following section now details Health and Social Care related RII assets (research centres and departments) that are based at the University of South Wales which could support the institution to achieve its R&I ambitions across health and care domains outlined above.

7.2.2: University of South Wales RII Assets.

The Welsh Institute of Health and Social Care (WIHSC):

WIHSC was established in 1995, and exists to 'bridge gaps between academia, policy and practice' (USW, 2021a). The aim of WIHSC is to play a critical role in developing, informing, and positively impacting the implementation of evidenced-based approaches to the provision of health and care services spanning public, private and voluntary sectors in Wales. It is a leading policy research institute that is underpinned by five focal research areas, including Prevention of escalating need; Integration of health and care; Co-produced care and outcomes; New models of Care; Value-Based care across the whole pathway (USW, 2021a). WIHSC is involved in a number of Health and Social Care related RII projects some of which are included in the 'projects' (pp. 114).

Sport, Health and Exercise Science Research Group:

The Sport, Health and Exercise Science Research Group aims to support, and drive applied and impactful research across four main areas of study; Neurovascular Research Laboratory; Sport Psychology; Managing High Performance and Injury in Elite Sport and Sports Coaching and Development. The group has several ongoing research projects related to sport, exercise and health including the effects of concussion from sports, high-intensity interval training on rehabilitation and the impact of respiratory fitness on post-op survival. The unit also has a wealth of related facilities including resources to perform biochemical analysis, assess vascular function and body composition as well as understand exercise physiology (USW, 2021b).

Unit for Development in Intellectual and Developmental Disabilities:

The aim of the Unit for Development in Intellectual and Developmental Disabilities centres upon enhancing the quality of lives and services provided for those with intellectual disabilities, their relatives, and carers. The unit undertakes a range of research in this area, with current or recent research projects including developing a 'health communication tool' to support people living with learning disabilities in Wales; mapping research related to learning disabilities in Wales; and examining the role of the learning disability nurse in supporting this population segment, along with their families (USW, 2021c).

Lifespan Health and Wellbeing Research Group:

This research group consists of a multi-disciplinary array of professionals and researchers across health and social care related domains of nursing, health psychology and human geography. The group has two major health-related research areas, which include Prevention and Intervention, and the interface between policy and practice. Research themes under the described areas include addiction, promoting life-long health, spirituality, genomics, intellectual and development disabilities whilst also working with the Welsh Institute for Health and Social Care (WIHSC) and the WSSPR. The group is involved in a vast array of research projects across the identified research themes, which include projects such as coping with caregiving; enhancing spiritual care for patients and their carers in NHS Wales and identifying factors that predict substance misuse relapse (USW, 2021d).



Genomics Policy Research Group:

The Genomics Policy Research Group studies the implications of Genetics and Genomics. The group has a three-fold aim which is to 'make a significant contribution to professional preparation, public education, and ultimately to improvements in care through the use of genomics' (USW, 2021e). The group pursues a variety of projects across genetics, genomics, and the health workforce, particularly in relation to deficits in genomics literacy. Projects completed by the group include, amongst others; 'exploring genetics and genomics within nurse leaders' and evaluating 'BHF's cardiac genetics nurse initiative' (USW, 2021e).

The Centre for Social Policy:

The Centre for Social Policy at the University of South Wales possesses strength in the analysis of social and public policy domains. The centre places emphasis on its role in 'generating knowledge and evidence to inform policy formation and implementation' (USW, 2021f). Furthermore, the centre actively plays a role in the education of public service stakeholders and possesses strength in areas particularly related to; wellbeing; citizen involvement and participation; governance and scrutiny; and equality and outcomes assessment (USW, 2021f).

The Centre of Excellence in Mobile and Emerging Technologies (CEMET):

CEMET, situated within the Faculty of Computing, Engineering and Science, supports Welsh SMEs by developing funded collaborative R&D projects. The CEMET project, which is part-funded by the European Regional Development Fund (ERDF) through the Welsh Government, supports a wide range of technology-related projects, providing expertise and advice throughout the innovation lifecycle. CEMET projects related to Health and Social Care are described in further depth in the USW 'projects' section of this report (pp. 114) (CEMET, 2021).

Research Capacity Building Collaboration Wales (RCBC Wales):

RCBC Wales is a research capacity building programme based at USW. The programme is funded by the Welsh Government through HCRW and is a collaboration between six nursing and allied health professionals' departments across Wales, which supports health professionals across the domains of nursing, midwifery, pharmacy, clinical science, and the allied health professions to engage in research. The programme awards a range of research fellowships ranging from first into research to PhDs and post-doctoral study and supports participants through workshops on topics such as research methods and leadership. To date, the programme has awarded 102 research fellowships, resulting in 373 fellows' publications, with 43 fellows securing additional grant funding (RCBC Wales, 2021).

Wales School for Social Prescribing Research (WSSPR):

Furthermore, as cited on page 50 of this report, Prof. Carolyn Wallace of the University of South Wales also co-chairs the Wales School for Social Prescribing Research (WSSPR). WSSPR is a pan-Wales virtual school for Social Prescribing which aims to build upon work previously undertaken by the Wales Social Prescribing Research Network (WSPRN). WSSPR has a wide range of R&I projects ongoing and recently completed related to Social Prescribing and supports three communities of practice in north, west and south-east Wales. This report will now provide an overview of USW Health and Social Care research activity (WSSPR, 2021).

The Clinical Simulation Centre:

The Clinical Simulation Centre based at the University of Wales was created to mimic 'an acute care NHS environment' offering a real-life clinical setting for the training of Nursing and Midwifery students, as well as wider health professionals including anaesthetists, doctors, paramedics and the Territorial Army Medical Service (USW, 2021g). Throughout the Covid-19 pandemic, the Clinical Simulation Centre has also been used to train NHS staff to care for patients who are critically ill with the disease (USW, 2021g). The Clinical Simulation Centre contains a broad range of facilities, some of which include; an Intensive Care Unit simulation, Nursing Bays, Paediatric Unit, Clinical Skills Room, Emergency Department and Ambulance Simulator and a Community Flat (USW, 2021g).

Other notable research centres and departments based at the University of South Wales that might be of interest are detailed below in Table 17.

Table 17: Other notable research centres and departments and

Research Centre or Department:	Centre Description:
Applied Sciences Research Group	The Applied Sciences Research Group is a multidisciplinary team of scientists spanning domains including biological, chemical, ecological, natural, and forensic sciences (USW, 2021i).
Computer Science and Artificial Intelligence Paradigms (CSAIP)	CSAIP applies elements of Computer Science to help solve complex problems across a variety of different disciplines including biomedical sciences, engineering, and medicine (USW, 2021j).
Wireless and Optoelectronics Research and Innovation Centre	WORIC undertakes RII activities related to photonics, optoelectronics, optomechanics and telecommunication. Application of this work spans multiple sectors including health and wellbeing (USW, 2021h)
Sustainable Environment Research Centre (SERC)	SERC 'undertakes national and world-leading research into waste treatment and the sustainable production of energy from waste and grown biomass' (USW, 2021k).

7.2.3: University of South Wales Research Publication Clusters:

The research topic cluster map presented in Figure 22 depicts the top 50 'medicine' related topic clusters associated with the University of South Wales publications from 2011-2020 (SciVal, 2021d). Cluster bubble size is proportional to the institution's publication output related to each theme.

Although mainly illustrative, Figure 22 demonstrates the diverse array of 'medicine' related research being undertaken at the University of South Wales. This also includes many more 'Social Care' related topics and wider subject areas such as Psychology, Wellbeing and Happiness and Violence, Women and Children. Figures 24 and 25 (pp.109) provide a more detailed assessment of the 'medicine' related research publication topic clusters at the University of South Wales.

This demonstrates strength and focus on a few areas including amongst others; Exercise, Muscles, Athletes; Pervasive Child Development Disorders and Autistic Disorder; Thermography; Obesity and Motor Activity in Children; Brain Injuries and Wounds; and Breast Neoplasms and Genetic Testing. Although it is acknowledged that the assessment of institutional strength using research publications might be considered retrospective due to the delays in translating research to publication, this provides an overview of regional research activity and focus and allows standardised comparisons to be made across institutions.

Alongside the 'medicine' related research topic clusters identified in Figure 22, Figure 23 overleaf also offer insight into 'nursing' and wider 'health professions' topic clusters at USW.



Figure 22: 'Medicine' Research Topic Cluster Map
University of South Wales 2010-19 (Source: Adapted from SciVal, 2021d)

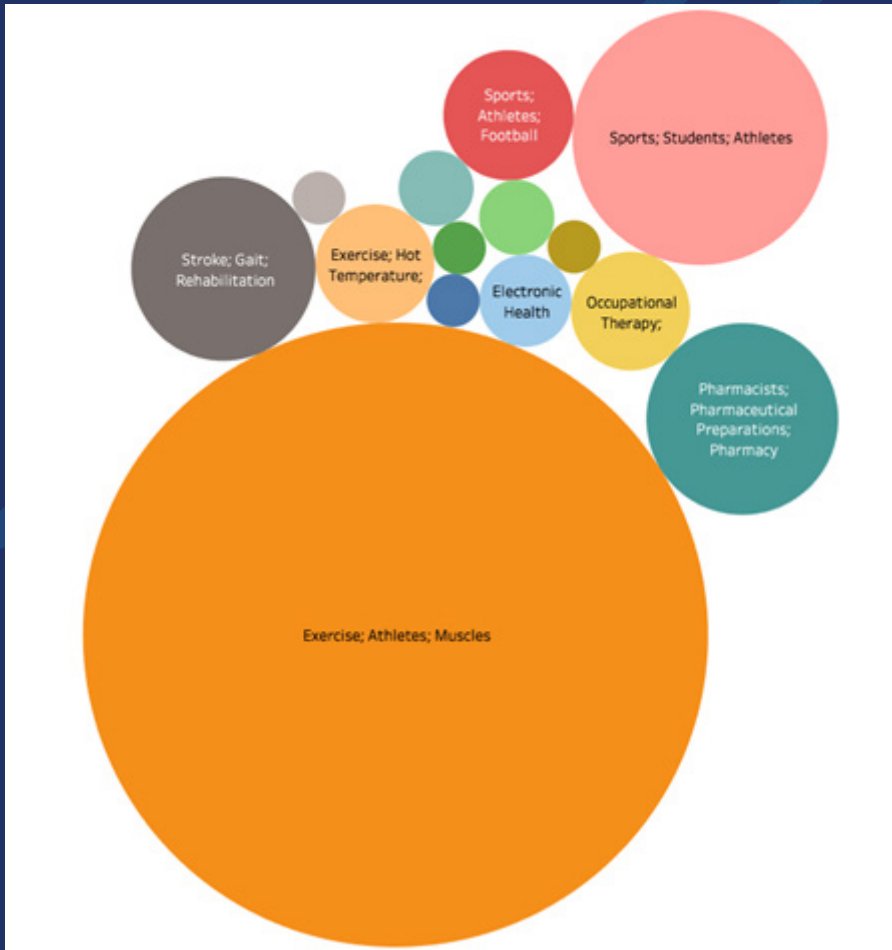


Figure 23 : Research Topic Clusters 'Health Professions' (Left) and 'Nursing' (Right) based upon Publications Researchers at the University of South Wales have Contributed to from 2010-2019 (Source: Adapted from SciVal, 2021e & SciVal, 2021f)

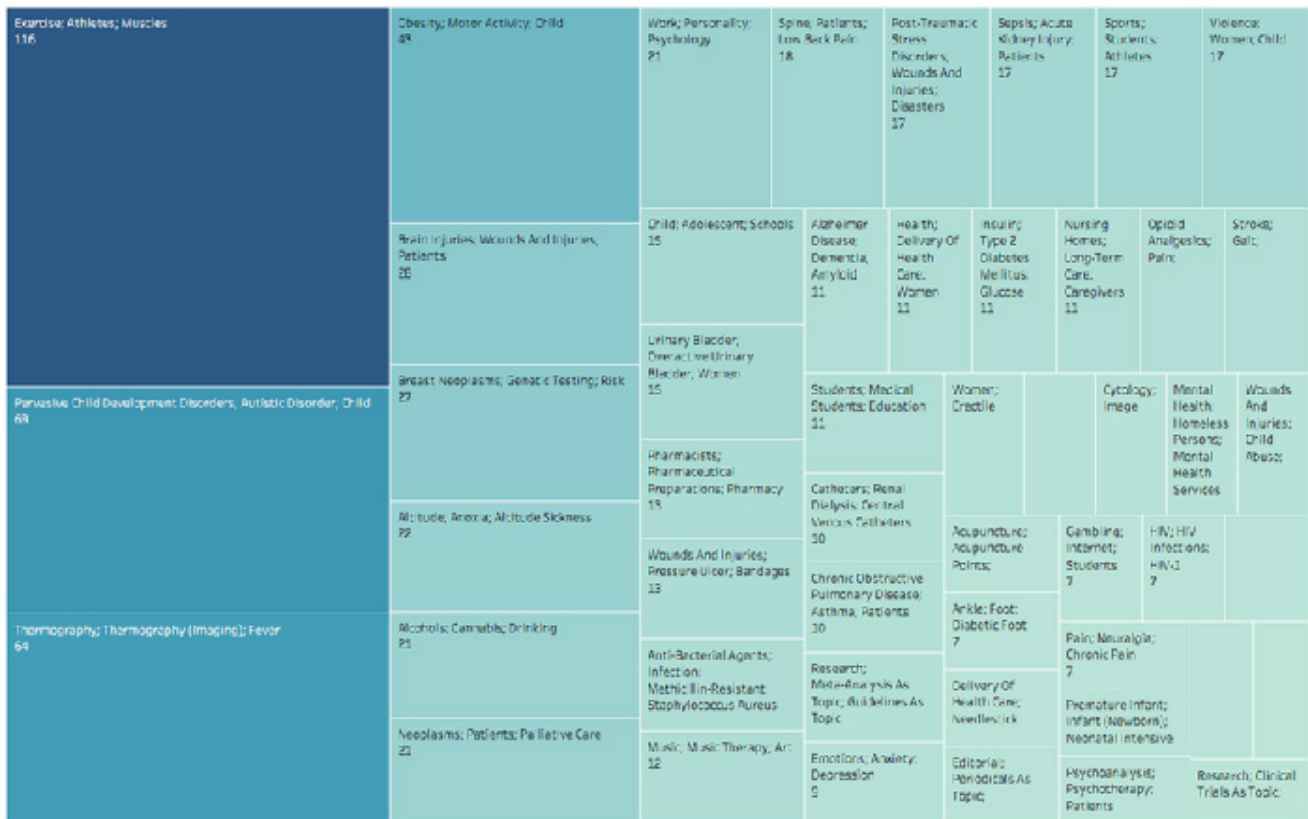


Figure 24: University of South Wales Top 50 Research Clusters 'Medicine' based on publication output 2011-2020 (Data Source: SciVal, 2021d).

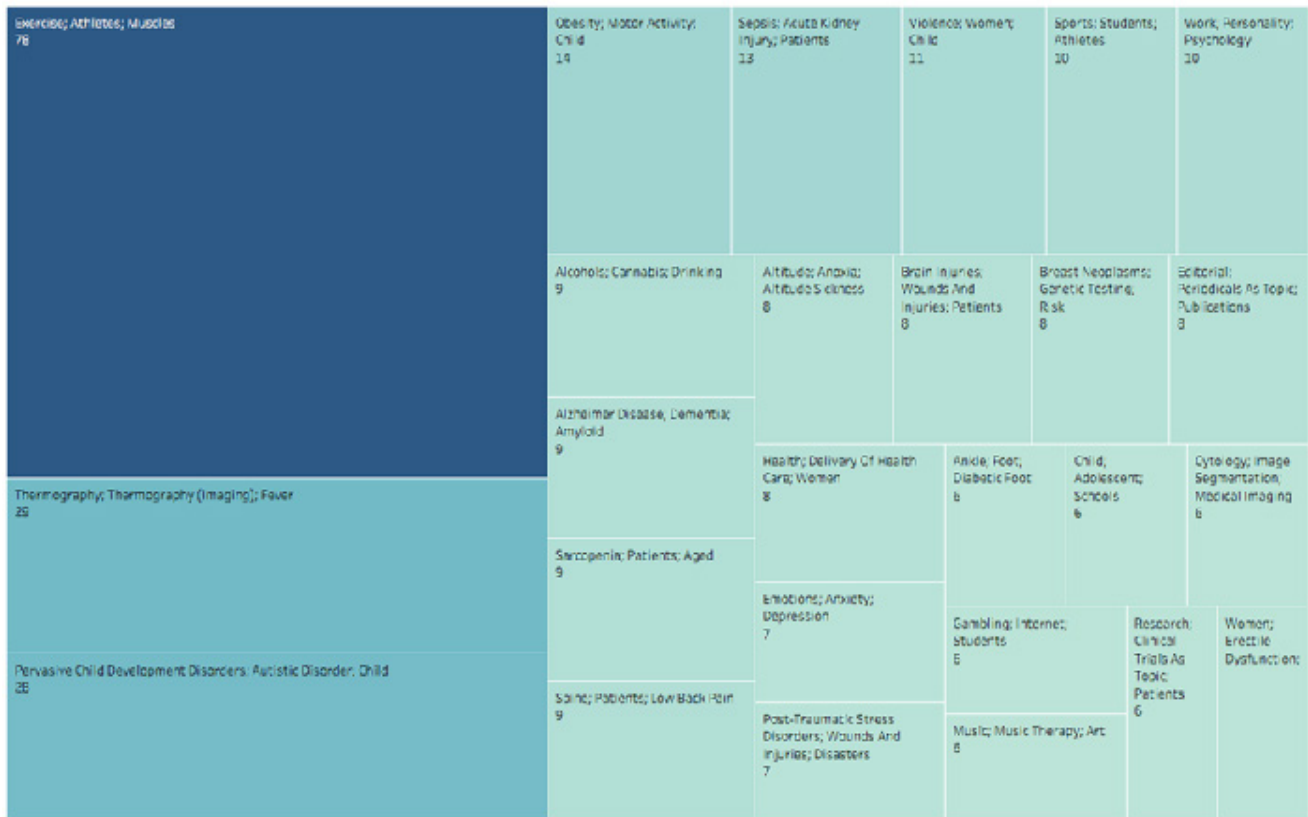


Figure 25: University of South Wales Top 50 Research Clusters 'Medicine' 2017-2020 (Data Source: SciVal, 2021d).

Figure 26 shows the average Field-Weighted Citation Impact (FWCI) of the University of South Wales publications across an array of topic areas related to 'medicine' from 2010-2019 (SciVal, 2021g). As again noted on page 93, FWCI figures are based upon worldwide article level metrics which compare publication citation numbers against the expected rate for other publications of a similar age, type, and field. FWCI metrics can thus be used as a proxy-indicator of publication or research quality.

As is demonstrated in Figure 26, where a unit of 1 represents the average or expected FWCI, University of South Wales publications exceed the expected FCWI across several selected medical research specialisms (where 10 or more publications had been published), however, in the case of other areas, performance is less strong. This suggests high quality research output, particularly in areas associated with; General Medicine; Orthopaedics and Sports Medicine; Physiology; Complementary and Alternative Medicine; Cardiology

and Cardiovascular Medicine; Neurology; Internal Medicine; and Paediatrics, Perinatology and Child Health (SciVal, 2021g).

However, University of South Wales publications (where 10 or more publications were published) ranked below the expected FWCI of 1.0 between 2010-2019 in areas including; Psychiatry and Mental Health; Pathology and Forensic Medicine; Health Informatics, Endocrinology, Diabetes and Metabolism, and Oncology (SciVal, 2021g).

The following section of this report now provides an overview of funding application and awards associated with the University of South Wales across the seven major UK Research and Innovation's (UKRI) research councils.



Figure 26: Average Field-Weighted Citation Impact (FWCI) of USW publications across an array of medical domains (SciVal, 2021g).

7.2.4: USW UKRI Research Council Grant Funding:

Again, comparing Welsh universities grant application funding data (UKRI, 2021), USW submitted a total of 28 Research and Innovation (R&I) grant applications to UK Research and Innovation's (UKRI) seven research councils between 2015/20 (Arts and Humanities Research Council (AHRC), Biotechnology and Biological Sciences Research Council (BBSRC), Economic and Social Research Council (ESRC), Engineering and Physical Sciences Research Council (EPSRC), Medical Research Council (MRC), Natural Environment Research Council (NERC) and Science and Technology Facilities Council (STFC)).

In terms of UKRI grant funding performance, USW ranks first amongst all Welsh universities (where complete data sets were available) when considering UKRI grant application success rate (30.4%) determined by comparing the total number of applications with the total number of applications awarded by all seven UKRI research councils (2015-2020). However, it must be noted that the University of South Wales submitted significantly fewer applications than many other institutions in Wales, which might make direct comparisons less representative.

When examining award rate by value, in this case, determined by the amount applied for compared with the amount awarded (£K), USW ranked third (27.6%), this time behind Swansea and Cardiff Universities, however, it is again worth noting that both Bangor and Aberystwyth Universities demonstrate much greater overall research income from UKRI councils than USW. A more detailed breakdown of UKRI R&I grant applications by Welsh universities (2015-2020) is provided in Tables 18 and 19 below, with graphical interpretations offered overleaf (pp. 112).

Table 18: UKRI Research Council Funding Award Comparison Across Universities in Wales by Number of Applications v Number of Awards (Source: UKRI, 2021).

Organisation	Year	Grant Category	Number of Applications	Number of Awards	Award Rate by Number (%)
University of South Wales	2015-20	Research and Innovation Grant	28	8	30.4
Cardiff University	2015-20	Research and Innovation Grant	919	251	27.4
Swansea University	2015-20	Research and Innovation Grant	326	79	24.2
Bangor University	2015-20	Research and Innovation Grant	189	40	21.2
Aberystwyth University	2015-20	Research and Innovation Grant	179	34	19
Cardiff Met. University	2015-20	Research and Innovation Grant	11	1	6.6

Table 19: UKRI Research Council Funding Award Comparison Across Universities in Wales by Amount Applied For (£K) v Amount Awarded (£K) (Source; UKRI, 2021).

Organisation	Year	Grant Category	Amount Applied For (£K)	Amount Awarded (£K)	Award Rate by Value (%)
Swansea University	2015-20	Research and Innovation Grant	224318	94136	35.6
Cardiff University	2015-20	Research and Innovation Grant	502067	158276	31
University of South Wales	2015-20	Research and Innovation Grant	13716	1775	27.6
Bangor University	2015-20	Research and Innovation Grant	80906	14578	19
Aberystwyth University	2015-20	Research and Innovation Grant	89622	12082	14.2
Cardiff Met. University	2015-20	Research and Innovation Grant	2927	59	7

Figure 27: UKRI funding award success 2015-20 comparison across six welsh universities (those who had complete datasets) (data source: UKRI, 2021)

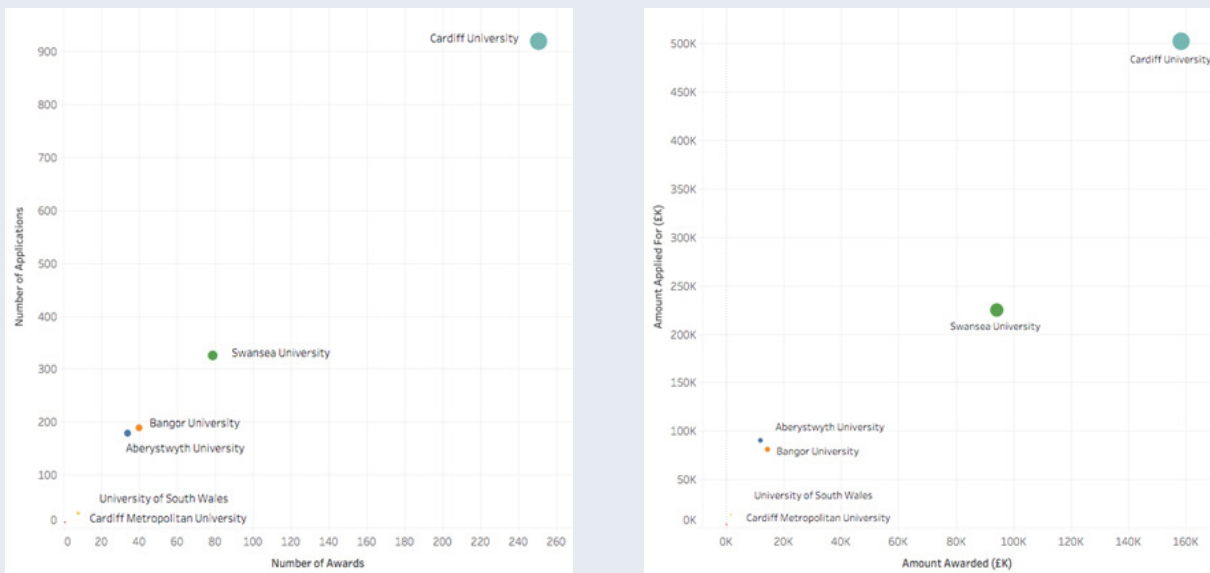


Table 20: Cardiff University Research and Innovation Award Breakdown 2015/20.

UKRI Council	Number of Applications	Number of Awards	Award Rate by Number (%)
AHRC	3	2	67
BBSRC	8	3	31
EPSRC	10	3	45
ESRC	2	0	0
MRC	2	0	0
NERC	3	0	0

Table 20 above provides a detailed breakdown of UKRI applications and awards associated with the University of South Wales (2015-2020) by each of the UKRI research councils. This demonstrates greatest success for USW relating to applications to the Arts and Humanities Research Council (AHRC), with a success rate of 67%, although there were only three applications made to the AHRC, which is relatively low compared to the number of applications made to other research councils (Table 20).

USW made the greatest number of applications (n=10) to the Engineering and Physical Sciences Research Council (EPSRC) demonstrating a 45% success rate, whilst this was followed by applications to the Biotechnology and Biological Sciences Research Council (BBSRC) to which 8 applications were made from 2015-2020, with a 31% success rate. USW also made 3 applications to the Natural Environment Research Council (NERC), 2 applications to the Medical Research Council (MRC), and 2 Economic and Social Research Council (ESRC), although none of these were successful. Figure 28 provides an overview of research and innovation awarded.

The following section of this report now describes several examples of Health and Social Care RII projects or initiatives ongoing or recently concluded at the University of South Wales.

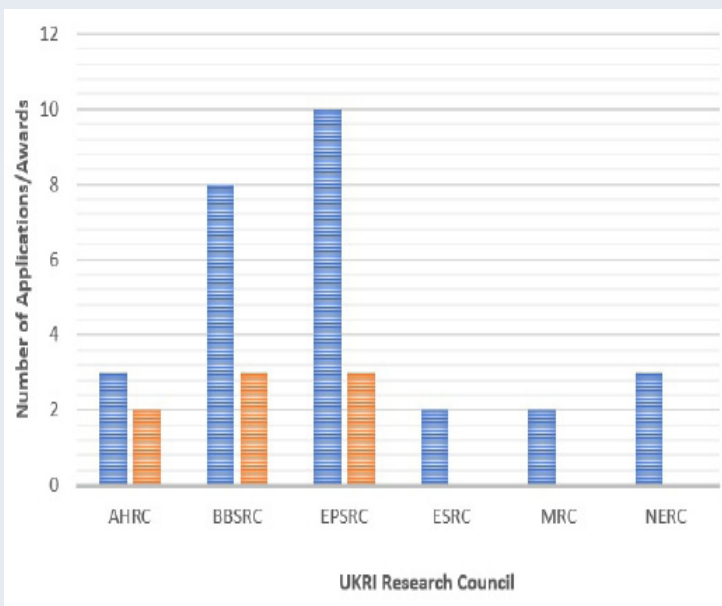
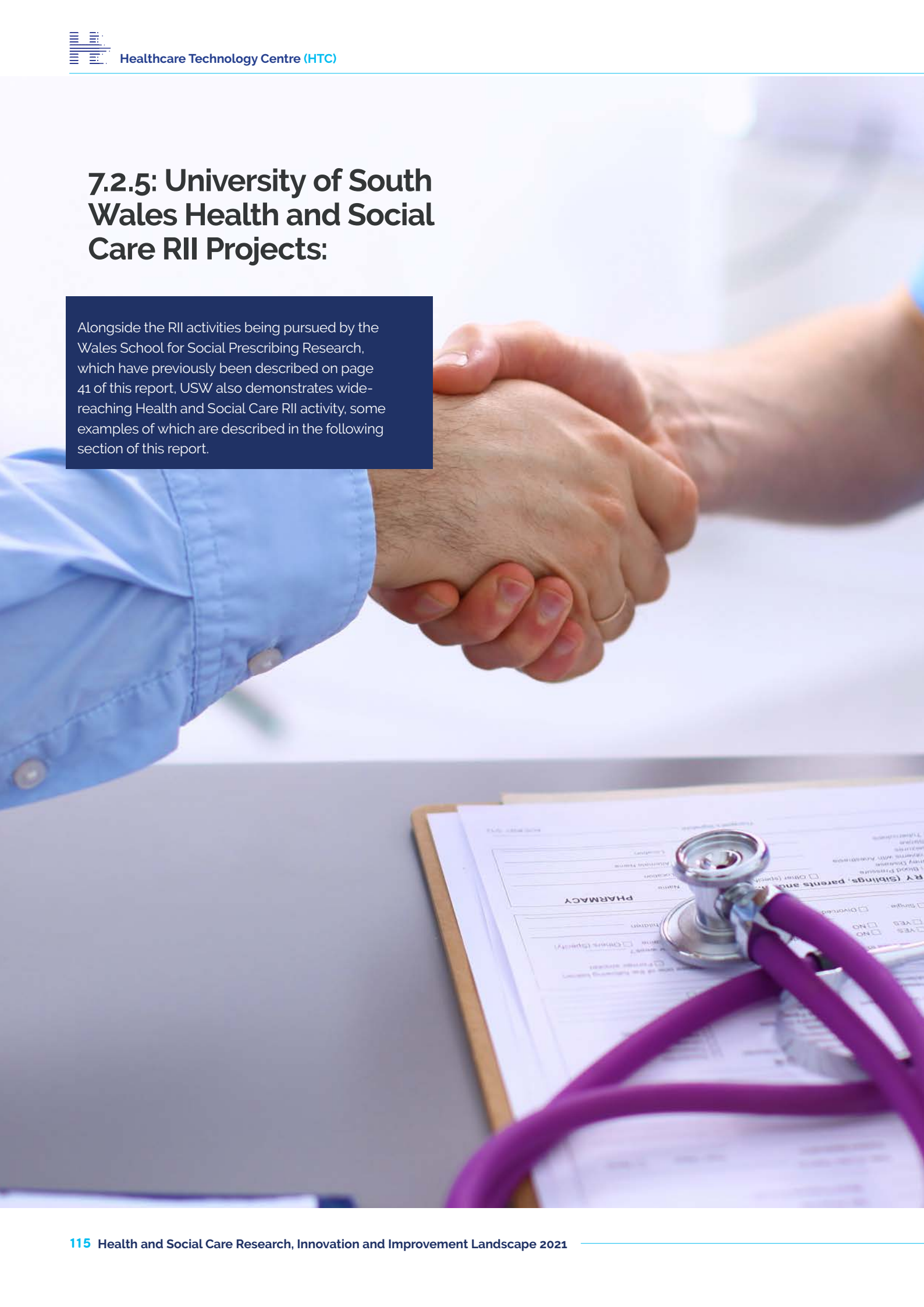


Figure 28: USW UKRI Research and Innovation Award Breakdown 2015/20.



7.2.5: University of South Wales Health and Social Care RII Projects:

Alongside the RII activities being pursued by the Wales School for Social Prescribing Research, which have previously been described on page 41 of this report, USW also demonstrates wide-reaching Health and Social Care RII activity, some examples of which are described in the following section of this report.





PROJECT 1:

New Models of Care: NDN Pilot Programmes.

USW alongside partners from the PRIME Centre (see pp. 43) and WIHSC (see pp. 106) have recently been involved in the evaluation of the Neighbourhood District Nursing (NDN) pilot programmes across Cwm Taf Morgannwg University Health Board, Powys Teaching Health Board and Aneurin Bevan University Health Board. The NDN programmes piloted the application of the 'Buurtzorg approach to Neighbourhood District Nursing' across the rural, valley and urban locations in Wales and were funded by the Welsh Government in 2017 (Wallace et al., 2020). This model of care supports 'home-based nursing care' delivered by Primary Care teams consisting of Registered Nurses, Health Care support workers and administrative staff (Wallace et al., 2020). The outcome of the evaluation undertaken by USW and partners (see Wallace et al., 2020), although acknowledging limitations relating to a lack of evidence, suggested that the NDN model did have the potential to support positive improvements to the health and care of people in the pilot regions (Wallace et al., 2020).



PROJECT 2:

Anti-Microbial Resistance and UTI Diagnostic Testing.

Microbiologists at USW have also developed a point of care (POC) diagnostic test for diagnosing people suffering from Urinary Tract Infections (UTI's) much more rapidly than traditional means. Current best practice for the diagnosis of UTIs, a cause of significant mortality every year along with wide-scale use of antibiotics, involves analysis of urine samples where results can take between 24 and 72 hours to be obtained (USW, 2021). The POC device developed by microbiologists at USW uses 'molecular assay, optoelectronics and machine-learning algorithms' to assess whether a patient has a UTI within under 20 minutes (USW, 2021). It is thought that the development of this technology could have significant effects on clinical practice, both in terms of patient health outcomes and reducing unnecessary prescribing of antibiotics, which in turn could reduce the effects of antibiotic resistance (USW, 2021). Furthermore, such technology might also be applied to support the diagnosis and treatment of other infections (USW, 2021).



PROJECT 3:

The effect of COVID-19 on People with Learning Difficulties (LD's).

Researchers from USW are also part of a UK wide study trying to gain a greater understanding of the effect of coronavirus on the lives of those living with learning disabilities. The study, funded by UKRI, is being undertaken in partnership with a number of other institutions including Cardiff University, Learning Disability Wales, The All Wales Forum of Parents and Carers and All Wales People First. The study, which is now in phase three of its activity, aims to interview around 200 people with LD's in Wales, whilst it will also involve both paid and unpaid carers (Learning Disability Wales, 2021). Researchers will probe participant views on a wide arrange of factors related to the Health, Wellbeing, Social Life, Services, and other issues that may be influenced by the effects of the Covid-19 pandemic. The ultimate aim of the study is to share the information gathered with policy and decision-makers, service designers and people with LD's themselves, to ensure changes to the lives of people with LD's are communicated and appropriate interventions are developed (Learning Disability Wales, 2021).



PROJECT 4:

Sports, Exercise, Concussion and Dementia.

Teams at USW are also working on several projects which relate to sports, exercise, and the impact this has on the brain and its wellbeing. One such area of study relates to how repetitive concussion through sports such as rugby and football is related to ageing of the brain and players future vulnerability to neurodegenerative diseases such as Dementia. This includes the implementation 'of a functionally integrated translational model which sought to determine the metabolic, cerebral-haemodynamic and clinical implications of prior recurrent concussion across the lifespan of rugby union players' (USW, 2021m). Alongside this, researchers at USW are also exploring the effects that the heading of a football has on the development and ageing of brains (USW, 2021m).



PROJECT 5:

WORIC Covid-19 Pulse Oximeter.

Researchers at the Wireless and Optoelectronics Research and Innovation Centre (WORIC) based at the University of South Wales have also developed a novel Pulse Oximeter that monitors blood oxygen levels to support the Covid-19 effort, as such devices were of low availability as the pandemic grew. In partnership with the Welsh Government, Panasonic UK, Industry Wales and Hywel Dda University Health Board, the technology allows both blood oxygen levels and lung performance to be monitored by clinicians (USW, 2021n). The device is also applicable in community settings, which supports remote monitoring of patients with Covid-19 and other respiratory challenges. The project was funded through an £83,000 Covid-19 Research, Development and Innovation support call from the Welsh Government and will be manufactured in Wales to support ongoing Covid-19 challenges (USW, 2021n).



PROJECT 6:

Project 6: Health and Social Care Policy.

The Centre for Social Policy Research at USW is also involved in a wide array of RII projects relating to and informing Health and Social Care policy in Wales and beyond. Examples of relevant projects being or recently undertaken by the Centre for Social Policy Research include work relating to; the wellbeing and inclusion of ethnic minority groups, immigration, the role of creative-arts practices in informing health and wellbeing related policy agendas; and the Wellbeing of Future Generations Act in Wales and how this influences values and integration between Health and Local Governments (see USW, 2021o).



PROJECT 7:

Research Capacity Building Collaboration (RCBC) Wales.

Research Capacity Building Collaboration (RCBC) Wales is a Welsh Government supported the initiative, funded through HCRW, which aims to develop research capacity amongst nursing, allied health professionals and pharmacists in Wales (RCBC Wales, 2021). Based at the University of South Wales, RCBC is a collaboration across six Welsh university nursing and allied health departments, including the University of South Wales; Cardiff University; Cardiff Metropolitan University; Swansea University; Bangor University and Wrexham Glyndwr University. The programme is also supported by NHS Wales Health Boards and Tenovus Cancer Care (RCBC Wales, 2021).

The programme supports nurses, allied health professionals and pharmacists to engage in research by providing opportunities for such segments of the healthcare workforce to apply for and secure research fellowships across the spectrum of the research trajectory (RCBC Wales, 2021). These include First into Research (FiRs) Fellowships, PhD fellowships, post-Doctoral fellowships, and a range of other rewards (RCBC Wales, 2021). The programme also supports participants to build their research confidence and capabilities by providing workshops and mentorship programmes related to research methods and research leadership (RCBC Wales, 2021). To date (June 2021), RCBC Wales has awarded 115 research fellowships, supporting 373 fellow publications, securing 43 fellow related grants, with fellows having presented at a total of 595 conferences (RCBC Wales, 2021).

Fellows' projects are wide-reaching across several subject areas, some of which are outlined below in Table 21, drawing information from RCBC Wales (2021).

Table 21 Selected Examples of RCBC Fellow Projects (RCBC Wales, 2021).

Academic Institution:	Prof. Discipline:	Fellowship Type:	Research Project Title:
Swansea University (2021)	Paramedicine	PhD	What is the impact of a global pandemic on the health and wellbeing of ambulance service staff?
Cardiff University (2021)	Nursing	PhD	Caring for people with dementia at EoL: EoL clinical decision-making process of healthcare professionals within primary care
Cardiff University (2021)	Pharmacy	FiRs	Horizon scanning to support patient access to medicines in NHS Wales: a qualitative study
Cardiff University (2021)	Physiotherapy	FiRs	Co-design and acceptability of a physical activity intervention for people with osteoarthritis
USW (2021)	Podiatry	FiRs	Early access to virtual resources for the self-management of Plantar Fasciitis: Proof of concept and feasibility study
USW (2021)	Nursing	FiRs	To look at the views of patients switching to a virtual epilepsy service during the COVID 19 pandemic
USW (2019)	Pharmacy	FiRs	Analysing antidepressant prescription duration in Welsh GP practices to monitor depression management and address the lack of Welsh specific data



PROJECT 8:

Centre of Excellence in Mobile and Emerging Technologies.

The Centre of Excellence in Mobile and Emerging Technologies (CEMET) is an R&D support programme based at USW, which helps businesses to develop technological innovation projects. CEMET is supported by ERDF Funding through the Welsh Government and supports a range of projects related to Health and Care, examples of which are detailed in the short case studies presented below.

Four Minutes Ltd: This project with Four Minutes Ltd. focussed on creating a CPR training programme that incorporated multiple virtual scenarios to ensure that training provided the most realistic experience of CPR possible, whilst also making CPR training fun, interactive and improving knowledge retention. The project utilises an 'HTC Vive Virtual Reality Solution' whilst also integrating other 'mixed reality sensors' to allow training participants to 'interact with a real-life CPR training manikin' in a virtual world (CEMET, 2021a). More information can be found on the CEMET website.

Vision Games Lab: This project, developed with Vision Game Labs Ltd., a small med-tech company, aimed to improve the process of assessing children's vision, which can often be challenging due to a lack of concentration in the subject. To achieve this, the project looked to gamify the eye testing process, with the game testing a range of measures, including visual acuity, contrast sensitivity and colour sensitivity (CEMET, 2021b). Such tests allow early recognition of visual challenges, with the

Tendertec: Tendertec developed a safety monitoring system to support older people living independently at home by detecting falls events using an array of sensors (CEMET, 2021c). This alerts families and caregivers automatically when falls happen. The project with CEMET centred upon visualising the data captured by the system more effectively of the digital app. More information about this project can be found on the CEMET website (CEMET, 2021c).

Lubas Medical: Lubas Medical are a medical training company supporting the education of medical staff in high-level sporting settings (CEMET, 2021d). Lubas Medical's project with CEMET sought to understand how the use of emerging technologies could support the expansion of their current training programmes (CEMET, 2021d). Following consultation between partners, the project developed a Virtual Reality based tool to enhance training activities, whereby teams of professionals work together in virtual settings to experience and learn about possible patient scenarios where treatment is required (CEMET, 2021d).

Antiverse: In partnership with CEMET, Antiverse is developing a novel technology that uses Artificial Intelligence (AI) approaches to produce an 'antibody drug discovery platform to predict antibody-antigen binding and provide and antibody-drug candidates' (CEMET 2021e). This aims to transform what is currently a very much costly trial and error process into a much more effective way of isolating drug candidates by using neural networks complimentary amino acid sequences for antibody binding (CEMET 2021e).

Table 22: Selected Examples of research output from the University of South Wales, 2020 – 2021 (University of South Wales, 2021).

Year	Research Output Title:	Author
2021	Systematic review of economic evaluations of children's social care interventions	El-banna et al. (2021)
2021	Assessing the Impact of Minimum Pricing for Alcohol on the Wider Population of Drinkers - Baseline	Buhociu et al. (2021)
2021	Using machine learning tools to investigate factors associated with trends in 'no-shows' in outpatient appointments	Incze et al. (2021)
2021	The Metanarrative of Learning Disability: Vulnerability, Unworthiness, and Requiring Control	Barden & Walden (2021)
2020	European social work – a compendium / What is the future of social work?	Kessl et al., 2020
2020	A participatory mixed-methods evaluation of a Falls Awareness Programme	Elliot et al. (2020)
2020	Can Social Prescribing Benefit Health and Well-being in the Community?	Kenkre, J. (2020)
2020	Evaluation of the Neighbourhood District Nursing Pilots in Wales	Wallace et al. (2020)
2020	Managing malnutrition in COPD: A review	Keogh & Williams (2020)
2020	Developing a tool to measure social well-being in the context of social prescribing: A group concept mapping study report	Elliot et al. (2020)
2020	Awareness among health visitors of the association between postnatal depression and intimate partner abuse	Spargo & Davies (2020)
2020	The need for gambling disorder clinics in Wales	Dymond et al. (2020)
2020	Nurses have a pivotal role to play as team members in the provision of rural healthcare	Kenkre & Wynne-Jones (2020)
2020	Adverse social relationships in childhood: Are there links with depression, obsessive-compulsive disorder, and suicidality in adulthood?	Angelakis & Gooding (2020)
2020	The Singing Unit: A pilot study investigating the efficacy of a music therapy singing intervention in a local neonatal unit to support parent/infant bonding and reduce parental anxiety	Coombes & Al-Muzaffar (2020)
2020	Public involvement and engagement in primary and emergency care research: the story from PRIME Centre Wales	Evans et al. (2020)
2020	Spiritual support in end-stage heart failure: a randomised controlled feasibility study.	Miles et al. (2020)
2020	Communicating about death and dying with adults with intellectual disabilities who are terminally ill or bereaved: A UK-wide survey of intellectual disability support staff	Tuffrey-Wijne et al. (2020)
2020	'When you have the adrenalin pumping, it kind of flushes out any negative emotions': A qualitative exploration of the benefits of playing football for people with mental health issues	Llewellyn, Cousins & Tyson (2020)

8.0: The Third (Voluntary) Sector in Cardiff & Vale:

The third sector often referred to as 'the 'charity and voluntary sector', 'not-for-profit sector', 'community sector' or 'civic sector', aims to create social rather than material wealth' (Prospects, 2020). The designated third sector coordinating body that supports and develops voluntary services in the Cardiff & Vale region are the Cardiff Third Sector Council (C3SC) & Glamorgan Voluntary Services (GVS) who work together closely in the CVUHB region.

Due to the scope of this report, not all third sector organisations in Cardiff & Vale can be included in this main document, it is acknowledged that regional third sector assets in Cardiff & Vale make a considerable contribution to Health and Social Care services. They also possess considerable knowledge and understanding in relation to local communities and their ongoing needs, which could be more effectively harnessed to support Health and Social Care RII activity across Cardiff & Vale, particularly through their strong relationships with multiple population segments. This is true across both large and smaller organisations in the region.

Research findings suggest that there is around 1250 registered third sector organisations located within in Cardiff & Vale region (Charities Commission), with many of these related to the Health, Wellbeing or Social Care domains. These organisations, although not necessarily undertaking RII related activities, in theory, could be important assets in such a sense.

Health, Wellbeing and Social Care related third sector assets in the Cardiff & Vale region provide a wide portfolio of services, ranging from mental health support, services to support people with disabilities, patient support groups, advocacy groups, housing support bodies and research and funding organisations. Third sector organisations that appear particularly active in the region include British Isles Association of Urological Pathologists, Heart Research Wales, Blood Bikes Wales, Mind in Vale of Glamorgan amongst others. The organisations identified also demonstrate collaborative partnerships across Health and Social Care delivery services such as working with regional local authorities and primary care. The following section of this report provides a few examples of third sector organisations and related health and social care projects.



8.1: Cardiff Third Sector Council (C3SC)

C3SC is the third sector council for is set up to support and develop Cardiff's third sector. Also, C3SC provides a medium to keep people informed with all that is going on in the third sector. The key aims that C3SC set out to support are:



- Setting up a community Group
- One-to-one Specialist Support
- Funding and Sustainability
- Training and Networking
- Trustees and Governance



Members



Funding Supported



Networks & Events



Total Enquiries



Training Participants



Volunteers Supported

C3SC provides support to a total of 1,441 members with £2,472,391.92 of funding to support third sector organisations and C3SC specific projects and partnerships. Some examples of the projects C3SC have been a part of are described below:

Can Do Project:

Can Do project is a programme developed by C3SC develop the skills for individuals between 16-35 with a disability or long-term health condition. In response to the lockdowns at the start of 2021, Can Do moved to digital platforms by keeping people connected and engaged (C3SC, 2022).

Tackling Loneliness and Isolation Project and Fund:

Community groups play a vital role in reducing the effects of loneliness and isolation. The project provided essential support by identifying high risk groups for isolation and loneliness by offering them bespoke support to re-establish themselves into the community. This is also supported with a barriers fund for groups that wish to restart or support their current service and activity (C3SC, 2022).

YL Project Hope:

Led by young people for young people. Tackling loneliness & isolation in young people by empowering and providing space for young people to meet online (C3SC, 2022).



8.2: Glamorgan Voluntary Services (GVS)

GVS is the other third sector organisation that is situated within Cardiff & Vale region. GVS is an independent charity, with the support of members and the community organisations that are active in the Vale of Glamorgan. GVS provides services to support the needs of voluntary groups, while championing best practice throughout the organisations to achieve the aims and objectives that they have set out.

- Empowering People.
- Inspiring Excellence.
- Strengthening Communities.

GVS supports voluntary groups by providing channels of engagement, information, advice and guidance for all aspects of volunteering for both the volunteer and the recruiting organisations. Below are some examples of projects GVS have been a part of, which is in line to the health and social care agenda

Friendly AdvantAGE Project:

Friendly AdvantAGE Project provided a range of services to reduce loneliness, isolation and to improve the wellbeing of older people in Cardiff and the Vale of Glamorgan. This was a lottery funded project, with the support of consortium of services that have experience supporting older people (GVS, 2021). The aims of this project were to support 900 beneficiaries over the four-year project, with the aspiration of the project being fully self-sustainable due to 50% of volunteers being 50+. The services that this project provided include:

- Short/long term befriending
- One to one support
- Help to increase confidence
- Connect people with each other and local groups
- Increase social networks

Co-Creating Healthy Change

Co-Creating Healthy Change was funded under Community Voices by Big Lottery. A portfolio of 10 projects worked across Cardiff and Vale of Glamorgan so people were able to influence decisions about their health and well-being services. While co-creating change in health and social care public service delivery (GVS, 2021).

This project was managed by Cardiff Third Sector Council and GVS, which operated between 2013-2017 to develop people's skills, and enable them to influence decisions on the delivery of health and well-being services (GVS, 2021).



8.3 Other Notable Third Sector Activities in Cardiff & Vale:

Along with the CVC's described above, are a network of third sector organisations to support in the Health & Social sectors. This next section highlights some of the key organisations that focuses on health care, social care and wellbeing services, while being in an innovative capacity.

Heart Research Wales

Heart Research Wales was formed in 1979 by a team of cardiac doctors at the University Hospital of Wales. Due to the unique set up of the organisation and low overheads, means that over 80% of the funding goes directly to support the projects. The three key aims of Heart Research Wales are:

Research: 'The Cardiff Embolic Risk Factor Study' (CERFS). Historically, after a heart valve replacement, the rate of life threatening blood clot is increased 2-4% per year. CERFS was implemented to find what risk factors were the most significant in the formation of blood cells. The research concluded that certain factors contributed to increased risk of blood clots are Chlamydia Pneumoniae, hypertension, diabetes, and pro-clotting disorders. They also found increased blood clots when patients received a specific blood clot called "Silzone".

Patients: Heart Research Wales is proud to have "Every penny raised in Wales stays in Wales". Aims are set out to support Welsh patients and carers that are affected by heart, lungs and cardiovascular system diseases.

Education: This has been seen as a critical goal for Heart Research Wales by supporting training needs of Welsh healthcare professionals to help their treatment of patients.



Inter Burns Ltd.

Inter Burns is a third sector organisation that is research driven charity to improve the ability to treat people with advanced burns. This was started in 2006 with links between the UK and India to treat patients with burns. With global reach achieved across countries such as Asia, Africa and the Middle East. The charity supports patients through objectives that are:

- Operational Standards – this sets out realistic levels that burn units can achieve
- Delivery Assessment Tool (DAT) – Sets out processes for staff support with an annual self-assessment to understand gaps and prioritise improvements
- Training programmes – provided in Basic Burn Care (BBC), Essential Burn Care (EBC) and Advanced Burn Care (ABC)



Blood Bike Wales

Blood Bike Wales was started in 2011 to support the transport of blood to patients in critical need. This is done by offering a free courier service for the NHS. With a total of 470 volunteers and 264 riders in support of Blood Bike Wales have provided 27,388 deliveries of blood in Wales.



MIND in Vale of Glamorgan

MIND in the Vale of Glamorgan is a mental health charity who are affiliated to Mind National. They work with individuals who are experiencing mental health problems, by providing support with information so people can make informed choices are aware of their rights. Aims set out by Mind are.

- To provide a service that is accessible to all, while making to adaptable to the persons specific problem. Necessary planning and delivery will be carried out for everyone
- To challenge the discrimination occurring against people who are alienated from society
- To assist people by achieving their goals and ambitions

Various courses are provided with Mind Glamorgan who are partners with Cardiff and Vale College, Adult Education and Primary Mental Health Support Services, the courses that are offered include:

- Mental health awareness training
- Anger management
- Re-thinking anxiety
- Primary Mental Health Support Services (PMHSS) – ACT-ion for living
- PMHSS Courses – Stress Control
- PMHSS Courses – Understanding



9.0: Other Welsh RII Support Programmes and Initiatives:

Wales also possesses a wealth of capacity in terms of its healthcare related RII support programmes and infrastructure. The programmes, which are described in further detail below, possess the capacity to provide a comprehensive pipeline of support throughout all stages of the research, development, and innovation process. This includes training and skills development opportunities, R&D support, and intellectual property advice, alongside opportunities to try out and test technologies in live contexts. Many of these programmes also work with wider international partners, which offers the potential to gain access to new markets as well as exploit existing programmes networks, although the programmes often primarily focus on the health domain and require academic or industrial partners.

9.1. Accelerate: UWTSO, Swansea University, Cardiff University, Life Sciences Hub Wales

Accelerate is a £24 million project co-funded by the European Regional Development Fund (ERDF), the Welsh Government's Health and Social Services Group, Welsh Universities, Life Sciences Hub Wales (LSHW) and regional health boards. The programme is driving cutting-edge research and translating innovative ideas into new products, processes and services with a focus on improving the health, wealth and wellbeing of those living in Wales.

The Accelerate programme is delivered by four key partners, each with different skills, capabilities and resources that can cumulatively add value to research, development and innovation projects. These include The Life Sciences Hub Wales, Cardiff University (Cardiff Innovation Accelerator), Swansea University (Healthcare Technology Centre) and The University of Wales Trinity St David (Assistive Technologies Innovation Centre). The programme works with businesses, academics and NHS staff to advance the development of a diverse range of new technologies throughout Wales.



9.2. AGOR-IP: Swansea University

AgorIP is a project which dedicates its time to helping Wales to prosper. Part-funded by the European Regional Development Fund (ERDF) through the Welsh Government, the project seeks to bridge the gap between innovation and the marketplace, helping inventors, the NHS, academics and businesses to take their innovations to the marketplace.

The AgorIP team can offer intellectual property searches, market research, building storyboards, creating prototypes or demo video development, as well as graphic design. The team can help clients work with business or commercial mentors and can support them to raise investment to get to the marketplace or secure a licensing deal and, as the name suggests, AgorIP can assist in protecting IP. In return for assistance, AGOR-IP asks for a commitment to helping Wales too, be that through securing private investment, creating jobs to benefit the Welsh economy, creating new products to bring to market and to firm or collaborating with other schemes and businesses.

9.3. BUCANIER: Swansea University, Pembrokeshire CC, Carmarthenshire CC and Irish Partners

BUCANIER (Building Clusters and Networks in Innovation Enterprise and Research) is an initiative on the EU Ireland-Wales Programme that aims to support cross-border collaboration in South Cardiff & Vale and the Eastern Republic of Ireland. The initiative builds on the success of INSPIRE (Initiating Pathways for Innovators, Researchers and Entrepreneurs) and adopts the innovation process developed during this predecessor project. Working in partnership with local government, universities and sector fora, BUCANIER aims to increase the intensity of knowledge transfer operations to enhance levels of innovation and collaboration in SMEs, building upon existing regional strengths in Life Sciences, Agri-Food and Renewable energy. To support this, the scheme provides mentorship, consultancy services and educational masterclasses.

9.4. CALIN: Swansea University, Cardiff University, Bangor University, University College Dublin, National University of Ireland Galway and Tyndall National Institute

The Celtic Advanced Life Science Innovation Network (CALIN), supported by the European Regional Development Fund through the Ireland Wales Cooperation Programme, addresses increasing demand within the rapidly expanding Life Sciences sector for enhanced, effective collaboration across industry, academia, healthcare, and government. CALIN has united a critical mass of research centres of excellence in Ireland and Wales to serve the SME community in the cross-border programme area.

The six higher education institutes; Swansea University, Cardiff University, Bangor University, University College Dublin, National University of Ireland Galway and Tyndall National Institute, are enhancing the value of the Life Science business sector through innovative R&D and have created a cross-border network that is facilitating synergistic relationships between Life Science sector stakeholders, SMEs and the wider research base. As well as knowledge sharing, these relationships are promoting a reciprocal strengthening of the sector through cross-border collaborations.

9.5. PATROLS: Swansea University and International Partners

PATROLS (Physiologically Anchored Tools for Realistic nanomaterial hazard assessment) is an international project combining teams of academics, industrial scientists, government officials and risk assessors to deliver advanced and realistic tools and methods for nanomaterial safety assessment. PATROLS will provide an innovative and effective set of laboratory techniques and computational tools to predict potential human and environmental hazards resulting more reliably from engineered nanomaterial (ENM) exposures. These tools will minimise the necessity of animal testing and will support the future categorisation of ENMs to support safety frameworks.

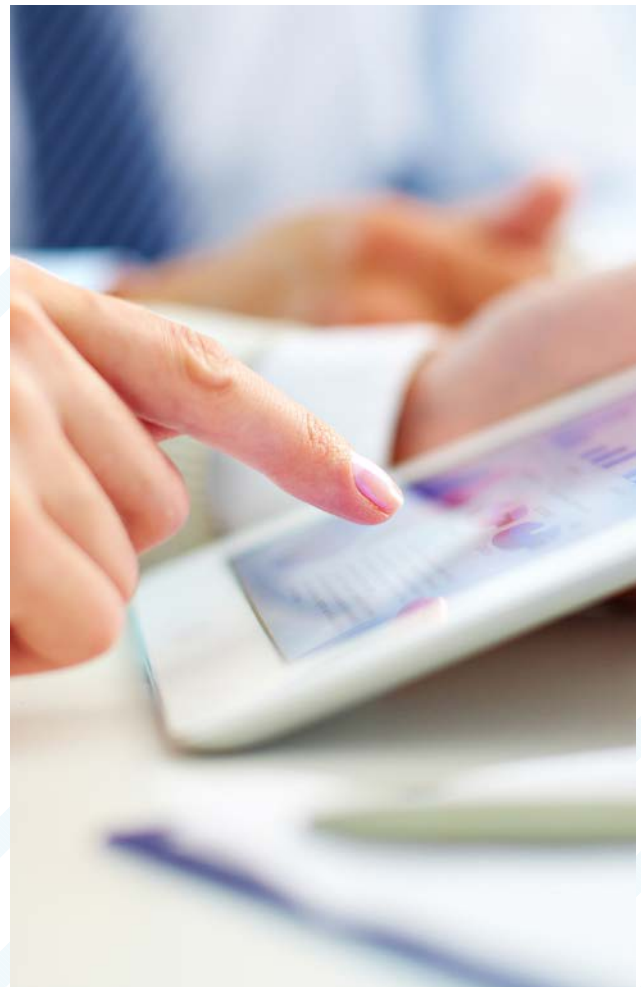
10.0: Survey and Interviews

As outlined in section two, a survey questionnaire was distributed to regional stakeholders working across the Health and Social Care RII ecosystem in the Cardiff & Vale health board. To add qualitative depth to these insights and gain a better understanding of key barriers and enablers highlighted by survey respondents, all stakeholders who engaged in the research surveys were provided with the opportunity to elaborate on key issues via semi-structured interviews. Key stakeholders were also presented with the opportunity to engage in the research interviews without having first completed the research survey. A total of 10 stakeholders contributed their insights, with respondents spanning Health, Social Care (Local Authorities), Academia and the Third Sector organisations.

The purpose of the survey and interview questions was to examine regional Health and Social Care related stakeholders RII activity and explore their perspectives on the key areas outlined below:

- Health and Social Care RII project involvement.
- Barriers related to Health and Social Care RII in Cardiff & Vale.
- Cultures of Health and Social Care RII in Cardiff & Vale.
- Priority areas of RII across Health and Social Care in Cardiff & Vale.
- The role of the RIC Hub in Cardiff & Vale.
- The effect of COVID-19 on Health and Social Care RII in Cardiff & Vale.

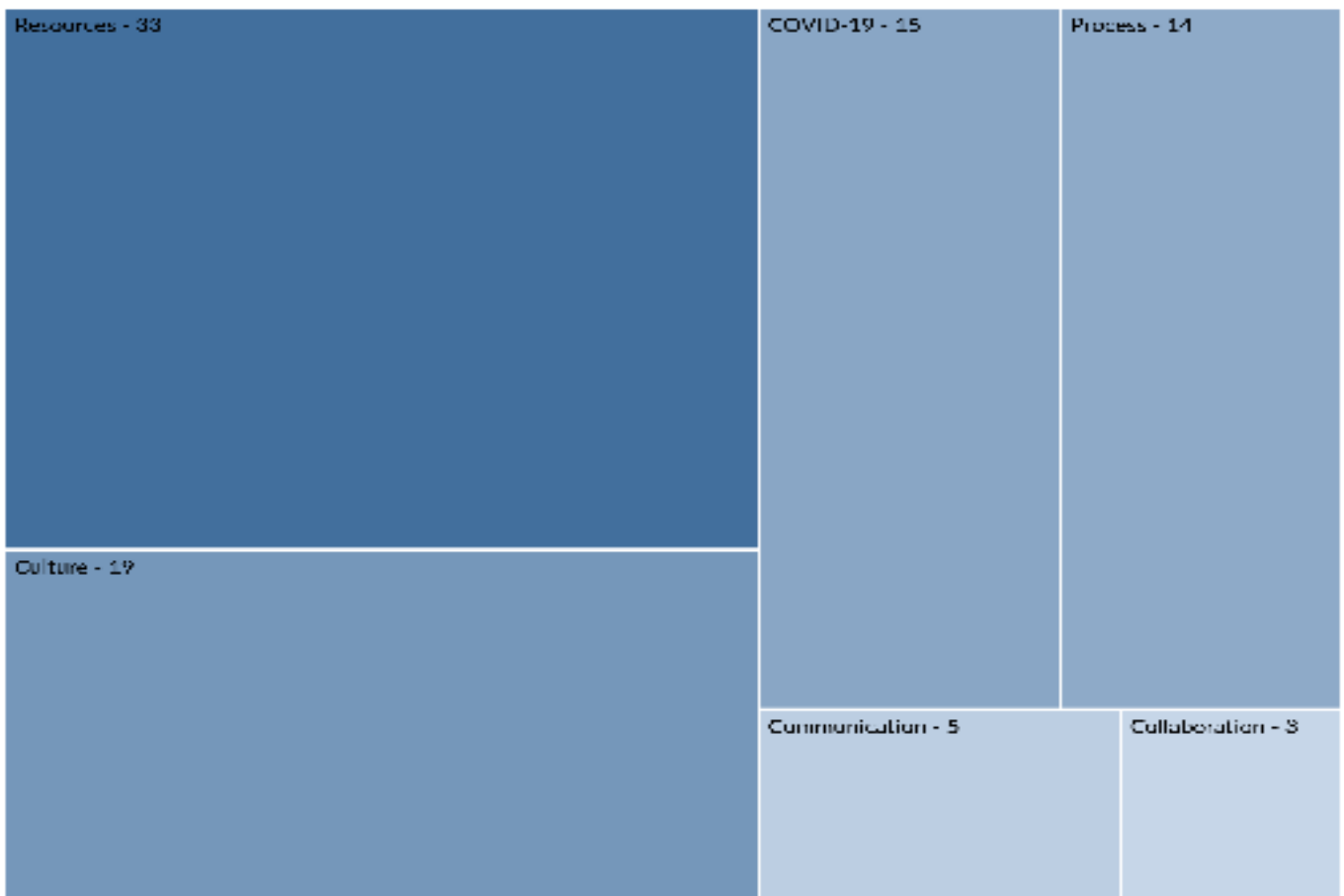
The following section of this report details the key findings. This begins by drawing on participants' insights to identify barriers and enablers to achieving Health and Social Care RII activities in Cardiff & Vale. Subsequently, areas of Health and Social Care to which regional partners perceive as requiring added regional focus and prioritisation are described. Finally, will identify pathways through which RIC Hub activity may be channelled to add the most value to the regional health and care RII ecosystem.



10.1: Barriers to Health and Social Care RII in Cardiff & Vale

Several barriers to health and social care related RII were identified by stakeholders during the primary data collection. 76 references were identified from the analysis of the surveys and semi-structured interviews, which is shown in figure 29 below are Resources, Culture, COVID-19, Process, Communication, and collaboration. These key themes will be discussed in this section.

Figure 29: Breakdown of 'Barriers' to RII activity noted by research participants





Resources

Resources were the most referenced barrier to impact RII activities within Cardiff and Vale with 29 mentions. A significant part of the lack of resources was around workload issues and staff to facilitate RII activities where a participant was quoted;

"So just having the manpower hours, the man hours to do things has been a bit of a challenge".

This was often associated with the staff redeployment and growing waiting lists that demands the attention of practitioners where a stakeholder was quoted; 'we had an infinitely growing waiting list and we had to find some way of dealing with it'. Although this has been impacted by COVID-19, there was an understanding that this has been an issue previously;

"I would say probably resourcing time from the NHS has been a barrier and particularly with covid"

Also, finance was a key area that needs increased attention to support RII activities, whereby development of processes and strategies to provide financial support are critical to the RII activities success.

"I think there is strong support from the government, you know, and unfortunately a lot of things boil down to money and it and it boils down to senior management support".



Culture

Culture received 18 references from stakeholders and was critical to impact RII activities. Often citing the lack of integration of innovation within the NHS, whereby a lack of key posts with an innovation focus, while there is a suggestion of confusion about the differences in research, innovation and improvement;

"People don't really understand it. A lot of our colleagues don't distinguish innovation from improvement or research".

There has been mention of an unwillingness to change where a participant said, 'And there was some resistance because it was new, but obviously once they can see the benefit, they all completely bought in'. While often the structures in place do not allow for products and services to change quickly where a stakeholder was quoted;

"I would say it doesn't persuade against. I would say that the culture isn't where we would like it to be, where it's sort of top of mind or front of mind for everybody".



Process

With 13 references, process was a critical theme highlighted by participants. With mention to issue around finding the right individual to support in the RII activity, where a participant was quoted;

"Finding the right people sometimes has been (an Issue)".

Also, reference was made to the issue surrounding setting up clinical trials, where they were quoted;

"I'm not saying that it can't be improved as a process because it is very long winded and bureaucratic to get formal clinical trial set up, but it does work. There's a lot of expertise, there's a lot of knowledge and there's a lot that's done there".

While another stakeholder raised issues around the data systems that are in place;

"Multiple systems, as you say, they're going towards that national database, but we had a four-month delay".

Collaboration

With 3 references, collaboration was one of the fewest issues discussed across Cardiff and Vale.

"I would say that the centralised support and knowledge isn't mature and established in some of those areas. So I'd say R&D for example, that's something you've got health and care research Wales to support that activity".

COVID-19

COVID-19 has become a significant factor to affect RII activities in recent times. Although, it has been seen as a barrier to impact these activities in Cardiff and Vale with 15 references made around the subject. Often COVID-19 has been linked to effecting staffing shortages, through illness and redeployment.

"So a lot of our hospital resources was sucked up to try and support sick individuals".

Also, COVID-19 and working from home has brought negatives, regarding isolation of individuals. This could have long term impact on mental health.

"It can be quite isolating to work this way and so the site visits have been a welcome relief, I think, for me and for building up a team as well".

Communication

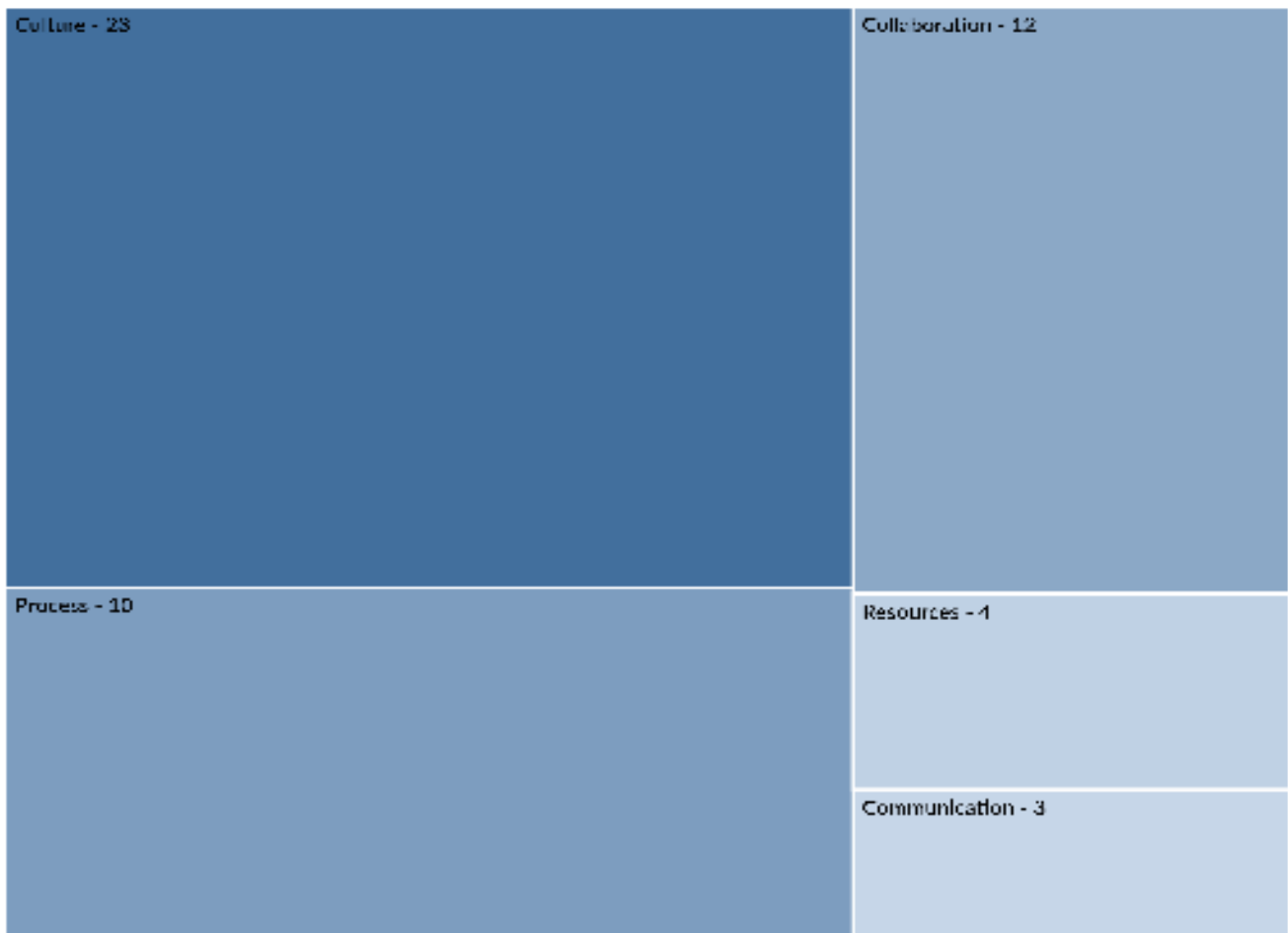
Communication was less discussed as a barrier that affects RII activities, although it was referenced 5 times by participants. Often through complexities in data sharing between organisations and sectors and the interchangeable use of language, which can confuse people

"Things are called different things in different areas or groups. So the local authorities might call something one thing within health board. It's something else within, you know, broader social care. It's something else but it's the same thing".

10.2: Enablers of RII in Cardiff & Vale:

From the data collection, enablers were identified to support RII in Cardiff and Vale that are shown below in Figure 30, with 51 references identified from the analysis. The size of the shape represents the times discussed by a participant where they will be discussed below.

Figure 30: Breakdown of 'Enablers' of RII activity noted by research participants





Culture

Culture was the greatest enabler to support RII activities in Cardiff and Vale with 23 references made on subject. A good culture occurs when there is a strong team and managers that are all in support of RII activities, citing that the Cardiff UB possesses a culture.

"Within Cardiff vale UHB definitely. I think it it's coming down from the executive that we should be as an organization"

Another participant also supported this citing the benefits when you have a manager that is in support of RII activities.

"I've had amazing support from my director at management".

Furthermore, the development of key posts that concentrate on innovation dedicated projects can have a positive impact.

"specific roles that are able to support innovation such as dedicated project managers - where these exist the impact has been positive - but we don't have enough of them"

Collaboration

With 12 references, collaboration was a critical enabler to support RII activities within health and social care activities. When organisations and individuals work together to perform RII activities, can increase the success and further knowledge transfer across boundaries.

"Breaking down the barriers - I think between the universities in the NHS is being massively positive as well. Just getting people in a room together and understanding each other's perspectives the barriers or challenges and the experiences that they're all sharing has been massively positive. Some of the first workshops we had".

With the continued development of close collaboration within the organisation.

"So having infused engaged individuals is critical to enable anything to happen, but that also has to be the air cover from the senior management"



Process

Process was also a key theme to support RII activities in Cardiff and Vale with 10 references made by participants. This was improved since the pandemic on services and products for patients.

"We are running, you know that we're launching a service that is designed to offer appointments for students, counselling, appointments or triage appointments, all those kind of things. The idea that some of those appointments are virtual or could be virtual or online is now completely accepted and built into the whole model, accepted by students, accepted by counsellors, by staff".

This has often brought about developments in technology to support patients, which has been beneficial to everyone involved, as some people may find it difficult to travel in and out to the hospital.

"So, we've been able to spare the patient the journey to the hospital and having to find a parking space and bearing in mind a lot of our patients are very frail".

Resources

With less discussion, resources were not a key theme to enable RII activities for Cardiff and Vale. Although they were agreed upon to be beneficial, through increased funding can support these activities.

"If properly funded, we know fracture liaison services save money, they save lives".

Communication

Communication was mentioned as an enabler to support RII activities. However, was only mentioned 3 times by participants as a key area.

"Getting all of the stakeholders communicating with each other, building up links, networking people together at all the different levels".

10.3: Stakeholder Perceptions of RII Priorities in Cardiff & Vale

The survey also sought to understand participants' views on areas across Health and Social Care thought to most urgently require RII activity. To achieve this, survey respondents and interview participants were asked "what areas related to Health and Social Care do you believe require Research, Innovation and Improvement related activities most urgently, and why?". Using thematic analysis approaches, six core clusters were identified across Cardiff & Vale deemed RII activity to be most urgently required. These are detailed below in Figure 31, with further context provided in the subsequent passage of text.



Figure 31. Participants' views on Health and Social Care RII Priorities in Cardiff & Vale.

Mental Health Services

Mental health services were the most discussed area for further developments of RII in Cardiff and Vale. This needs to address ways to improve services for patients and streamlined pathways for increased support networks. The COVID -19 pandemic has brought about secondary mental health issues such as increased isolation that needs to be addressed.

Cross-border Collaboration

By prioritising cross-border collaboration, can give support across sectors to improve on RII activities. This supports the attempts to increase MDT teams in solving complexed issues, while getting different viewpoints and solutions. Although improvements need to be made regarding the way people communicate, as there was mention of correspondents being sent in the mail including hospital discharge into the community as well as opportunities for RII activity related to micro-providers to support community-based services.

Social Care

Social care was highlighted as a sector that needs further supporting in the Cardiff and Vales region. Improvements should take place in effective and robust community social care to support the population. Also, concerns have been raised regarding care homes, which cause a knock-on effect to other areas in health and social care.

Social Prescribing

The concept of social prescribing has been discussed as an area for increase RII activities to be supported in Cardiff and Vale. With the growing use of over prescribing, more support should be taken to provide other means to cure an illness.

"We've partnered with, Cwm Taf Morgannwg to try and support the Get Fit Wales initiative that they're part of with the local authorities to try and activate. You know everybody, particularly those young younger".

Healthy Resilient Communities

There is a growing population of people who are overweight and obese, where huge changes need to occur in society to support this issue. Increased RII activities can pave a way to supporting this.

Digital Systems and the Use of Digital Technology

A key aspect raised in the development of technology and digital systems to support RII activities. With outdated systems and multiple systems being used, increase the complexities to communicate and collaborate between individuals and sectors. By increasing RII activities to support the developments of technology for improved cross border collaboration.

Other areas

Hospital Discharging - By increasing efforts in hospital discharging will have a big impact to support issues around care homes and social care, by freeing up more space within the hospitals for people who are suffering from serious illnesses.

10.4: Stakeholder Perceptions of the Role of the Cardiff & Vale RIC Hub

“A lot of it is joining the dots and it's trying to see where there's opportunity are and get the right people involved in in those areas.”

The research also examined participants perspectives relating to the ways in which the RIC Hub might best support RII activity in the Cardiff & Vale region.

The survey asked participants **'In your opinion, how could the Cardiff & Vale Research, Innovation and Improvement Hub most effectively support and coordinate the development of Research, Innovation or Improvement projects in the region?'**

Participants were then asked to select those roles they believed the RIC Hub could support with from the list of options identified below:

- **Q.1.** Identify good practice across Cardiff & Vale so that promising RII activity can be upscaled and spread.
- **Q.2.** Improve communication mechanisms across primary, secondary and social care boundaries to drive prevention, wellbeing through strong regional and local networks.
- **Q.3.** Provide an online tool to share learning.
- **Q.4.** Be a 'one stop shop' for all RII activity across health and social care in Wales.
- **Q.5.** Provide a consistent contact point for organisation to engage with national innovation and industry engagement initiatives/networks.
- **Q.6.** Identify, assess and share the extent of adoption of findings and recommendations from national organisations.
- **Q.7.** Import good practice from other regions/countries.
- **Q.8.** Export good practice to other regions across Wales.



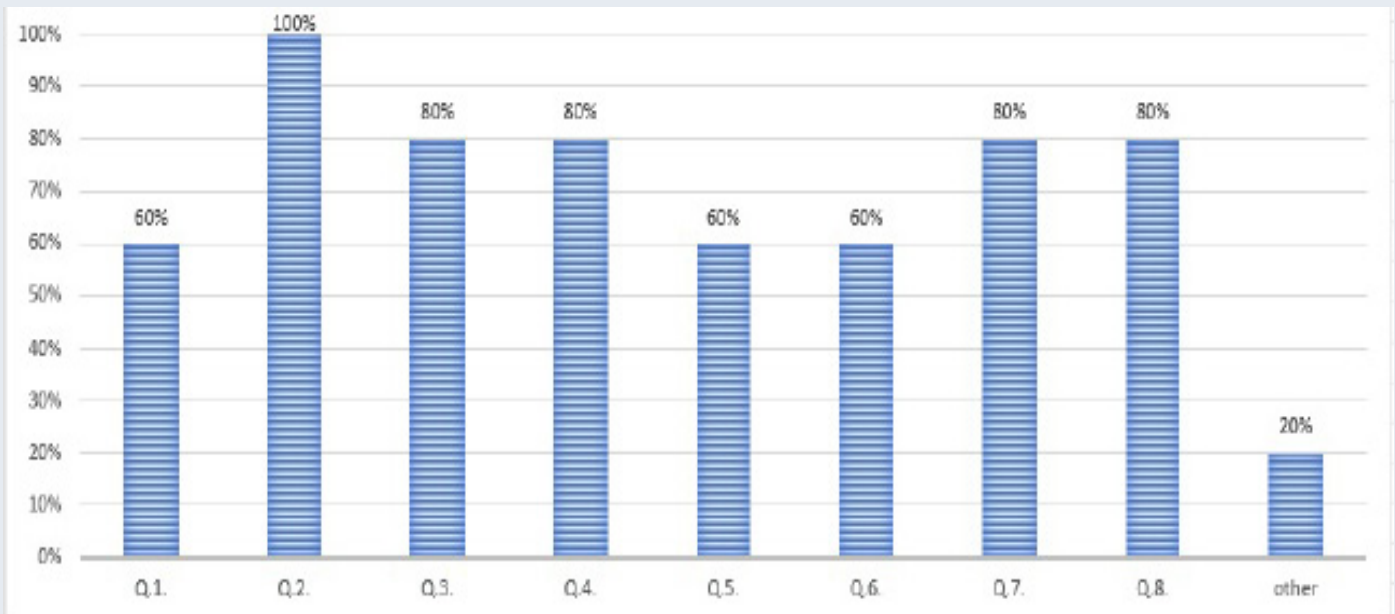
Of the responses made by participants, the area that received 100% was 'Improve communication mechanisms across primary, secondary and social care boundaries to drive prevention, wellbeing through strong regional and local networks'.

With four more areas with 80% agreement to develop the RIC Hub RII activities; Provide an online tool to share learning; Be a 'one-stop shop' for all RII activity across health and social care in Wales; Import good practices from other regions/countries; Export good practice to other regions across Wales.

The areas suggested that received less response rate of 60% was; Identify good practice across Cardiff & Vale so that promising RII activity can be upscaled and spread; Provide a consistent contact point for organisations to engage with national innovation and industry engagement initiatives/networks; Identify, assess and share the extent of adoption of findings and recommendations from national organisations.

Finally, participants were given an option to provide other areas for the RIC Hub to support RII activities, which received a 20% response rate, the responses provided were; 'Information about access to decision makers, ability to promote projects/ initiatives in appropriate forums. Sustainability of projects/ research into operation once the funding runs out. Setting up/ developing partnerships'.

Figure 32: respondents views on potential Functions of the RIC Hub (refer to questions in the section above).



11.0 Innovation Programme for Health and Social Care Regional Innovation Co-ordination Hubs Guidance 2022-23

The RIC Hubs are continuously working to improve their programmes and have recently released new guidance which details refinements of their goals and strategies for the 2022-23 annum. The ambition for the RIC Hubs moving forward is to generate a stronger focus on innovation infrastructure and activity across health and social care.

"And then innovation, making sure that all the things the health service has done so quickly to cope with Coronavirus, that we don't lose that culture of getting things done quickly and doing things differently, because to get the health service back on its feet, it can't just be trying to go back to how things were before Coronavirus ever began."

This follows the innovation strategy and consolidates the innovation programme, with the guidance being set to work in line with the new Regional Integration Fund (RIF), which allows RIC Hubs to support activities that fit the parameters of this. Both the Innovation Programme and the RIF have evolved from the previous Transformation fund and ICF and seek to create sustainable systemic change through improved integration of services coupled with a key focus on developing and scaling innovation in health and social care. In addition to this, strategies strive to provide evidence regarding what works, and actively share learning across Wales.

The Consolidated Innovation Delivery Programme for Health and Social Care

'A Healthier Wales' is a long-term vision and plan endorsed by the Welsh Government which details the need for a whole system approach to Health and Social Care that focuses on building health and wellbeing and preventing illness where possible. The Innovation programme will operate within this delivery context by recognising RPBs

and UHBs as key drivers for innovation and integration, given that these boards have high capacity for partnership working across academia, industry and third sector organisations such that resources may be combined to deliver on health and social care solutions. There are four key areas which are set out by A Healthier Wales, with these being outlined in the Wellbeing of Future Generations Act as striving towards:

- Improved population health and well-being
- Better quality and more accessible health and social care services
- Higher value health and social care; and
- A motivated and sustainable health and social care workforce.

Now more than ever, innovation is at the forefront of the strategy to tackle various public health challenges (such as dementia), while accelerating health and care recovery in the short term. This is possible due to support received from the RIC Hubs which facilitates the identification of new challenges and opportunities for innovation to occur. Critically, the COVID-19 pandemic has supported the development of a culture which values knowledge transfer through improving value-led health and social care delivery; subsequently cultivating the ideal environment within which innovation and transformation may thrive. Digital infrastructure has been identified as a key enabler in supporting innovation and collaboration across Wales. This has been supported by the Welsh Government's Digital Priorities Investment fund (DPIF), which funds a range of collaborative programmes and projects that embrace digital transformation. Herein lies potential for various healthcare challenges to be addressed through the exploitation of digital innovation opportunities, which facilitate shared acute awareness of new models of care and all activities occurring across the board, thus facilitating learning and reducing duplication of effort and wasted resources.

The Purpose of the RIC hubs and Trusts Innovation Leads

The new ambition and strategy set out to improve the quality and value of health and social care through the integration and collaboration of the RIC Hubs. This new agenda will support the activities that are already taking place in the RIC Hubs by integrating the wider policies and strategies set out by Welsh Government that include the new RIF and Integrated Innovation Strategy (IIS). The Innovation Programme will provide a targeted contribution to support the RIC Hubs in achieving their goals for better quality and value; goals which are supported by a culture of purposeful innovation. The RIC Hubs, will be working alongside the national innovation leads at each trust.

For this innovation led health and care system to succeed, appropriate collaboration and engagement efforts are being carried out across the NHS, RPBs, academia and industry. The RICs are a key asset in facilitating this at a regional and national level by bringing together key stakeholders, organisations, and their respective resources with the purpose of achieving a shared goal. The Trusts are also responsible for pooling together resources in a way that supports the RICs by creating a Trust Innovation Collaborative working for a shared strategic plan that manages and develops effective support to the hubs to achieve the outcomes and well-being of people. The set of objectives outlined for the 2022/23 annum focus upon:

- Alignment with regional and national innovation priorities (particularly reset and recovery priorities following the COVID-19 pandemic)
- Understanding how innovation activity is delivering value-led improvement for the benefit of service providers, service users and the general public
- Identifying opportunities to scale and share activity by identifying regional benefits that may translate into national learning
- Creating opportunities to develop new areas of higher value activity and supporting innovative partnership working that goes beyond local boundaries
- Providing an integrated network that is fully sighted on the projects and activities in each region, supporting collaboration between hubs and avoiding duplication of effort where possible; and
- Supporting a culture where innovation and transformation are valued and central to service delivery



In order to achieve these objectives, it is expected that all hubs will need to work together with national leads and regional hubs as a national innovation network. Specifically, emphasis must be placed on exporting and importing good practice, sharing learning and experiences; thus, driving adoption and spread of activities which benefit both healthcare providers and healthcare users. Moreover, closer collaboration with national bodies such as Sciences Hub Wales, Improvement Cymru, the Small Business Research Initiative Centre of Excellence, Bevan Commission Exemplars and Health Technology Wales is critical to ensuring that shared expertise may be accessed, and common functions (such as horizon scanning and technology appraisal) may be understood. It is only with effective collaboration that Wales may be recognised as a single coherent system which is attractive to external innovation and improvement partners, including industry and strategic funders.

Design principles

The design principles encapsulated by the strategy are as follows:

- Higher value – achieving better outcomes and a better experience for people at reduced cost, in addition to the provision of care and treatment which is designed to achieve what matters, and which is delivered by the right person at the right time, with less variation and minimal harm incurred.
- Evidence driven – using research, knowledge and information to understand what works; learning from and working with others while using innovation and improvement to develop and evaluate better tools and ways of working.
- Scalable – ensuring that good practice may be scaled up from local to regional and national level and shared to other teams and organisations.
- Transformative – ensuring that new ways of working are affordable and sustainable, and that they replace and improve existing approaches rather than add an extra permanent layer to pre-existing service provisions.

Qualifying 'Adopt & Spread' Activity

Innovation is characterised by key elements of discovery, invention, development, and adoption, and these characteristics cannot be easily separated. As such, the RIC Hubs and national leads will need to be mindful about decisions made with RPB endorsement to support pilot activities and will need to work to ensure it is adequately resourced to being quickly evaluated, and, in the case of health included within the IMTP Framework - ripe for 'adoption and spread'. To achieve this, it may be appropriate to closely align with and draw on other core funds or grants for systemic change to be maintained. While Welsh Government grants cannot be used as match funding for projects funded under the Innovation programme, they can and should be aligned to support complementary growth and provide added value.

As part of their considerations, the Hubs will also need to consider the scalability and value of the activity to be supported (regarding their ability to expand from a locality to a region, or from a region to other regions) and consider whether activity is 'transformative' in nature (i.e., changing and replacing existing approaches rather than adding extra layers to service provision, while ensuring that activities are as affordable and sustainable as possible). This applies equally to both co-ordination and pilot activities.

Where projects require RIC Hub funding support, emphasis must be placed on rapid testing and deployment. This will require close working with national bodies, such as Health Technology Wales and Health Care Research Wales to design proportionate appraisal and evaluation processes.

12.0: Conclusion to Report

This report has evidenced just some of the rich and diverse RII activity and related Health and Social care ecosystem that exists within the Cardiff & Vale Regional Partnership Board programme area. It has provided insight into areas of potential RII strength in the region, while it has also detailed a great range of RII assets, infrastructure and initiatives that possess both expertise and capacity with the ability to support further positive change across Health and Social Care domains in Cardiff & Vale. In summary, a few the key findings of the report are reiterated below, with further opportunities presented subsequently.

- Health and Social Care RII assets and activities identified by this research suggest that the Cardiff & Vale region is well placed to contribute towards the goals of the Welsh Governments (2018) 'A Healthier Wales' strategy, although opportunities for improvement exist.
- Findings describe a highly active, diverse, and complex Health and Social Care RII ecosystem within the Cardiff & Vale region, whilst findings also suggest that RII potential might further be maximised through improved visibility of RII assets and related RII activities.
- Analysis suggests RII strength and regional capacity across Academia and or Health and Social Care in areas including; Cancer, Dementia and Neurodegeneration, Genetics, Renal Disorders, Respiratory Disorders, and Neurological Disorders. The findings were gathered from the primary data collection and secondary data analysis of research outputs that the universities have specialised in.

- Barriers to Health and Social Care RII activity expressed by stakeholders in the region include; a lack of resources (namely funding, restricted staff time) which has been compounded by effects of COVID on workloads, Culture towards RII activities, inhibitory organisational processes, reduced collaboration and communication.
- Findings suggest that there is an opportunity for greater communication, engagement, and integrated working between all partners, stakeholders should ensure all corners of the regional RII ecosystem are interacting and working together effectively to support Health and Social Care related RII activity.
- Findings a suggest that much regional focus and support is directed towards medical and healthcare related RII, with the potential to endanger similar urgency and approaches to support RII activity across social care domains. More specifically, there are opportunities to develop joint social care and health improve innovation in care homes, mental health and for young people, so that solutions to challenges can co-produced between people who provide and people who use services.
- Academic partners contribute significantly to regional RII activity and possess world-leading expertise across a spectrum of Health and Care domains. Scope exists to maximise the opportunities presented by these partners through greater collaboration and knowledge sharing activities.
- The COVID-19 pandemic has brought positivity to the Health and Social care sector through streamlining innovative capacity and dealing with challenges at a much faster pace. These improvements in processes should be maintained following the post-pandemic era where possible as well as analysed so lessons can be learnt and potentially expanded

- Third sector partners also demonstrate significant willingness to partake in RII activity, as well as good knowledge and experience of working with people across Health and Care domains in Cardiff & Vale. Though further analysis must be undertaken to understand the third sector stakeholder, while understanding challenges faced and skill sets available in this sector.
- Alongside the described findings of the Health and Social Care RII ecosystem in Cardiff & Vale, there remain many opportunities where greater regional focus might prove fruitful in supporting the development of a more conducive environment for RII activities to flourish in the region. A few the key opportunities identified by this research are now reiterated in the passage presented below
- The Cardiff & Vale RIC Hub is positioned well to reduce RII complexity by supporting, communicating, and coordinating RII activity in the Cardiff & Vale region. The hub can also work alongside other regional partners, to define an end-to-end open system of support for Health and Social Care RII in the region. This might also provide a platform to develop further RII focussed forums based around specific topics, which bring together all regional stakeholders in a cross-sectoral, multi-disciplinary manner to promote a more integrated, joined-up approach to RII across the region.
- There also appears an opportunity to place further emphasis, time, and resources on developing the RII culture, support, and training mechanisms across Social Care domains in the region. This might include maturing RII infrastructure across Local Authorities and Social Care domains, starting by establishing dedicated leadership roles and wider team structures within such organisations with a specific remit of promoting, developing, and supporting RII activity.

- There may be an opportunity to develop more long-term, sustainable, integrated RII arrangements across Cardiff & Vale. This might consider developing an integrated Health and Social Care RII Strategy, whilst there may also be opportunities to develop shared funding mechanisms to facilitate RII across Health and Social Care, providing a greater balance of resource and support across all partners throughout the Health and Social Care RII ecosystem in Cardiff & Vale.
- Furthermore, there exists the potential to further promote and support RII activities across Health and Social Care domains organically in Cardiff & Vale by developing regional communities of practice and strengthening relationships with other national and international partners.

Looking to the future, the Cardiff & Vale region and related partners, as suggested previously, are in a relatively strong position to build upon the diverse array of Health and Social Care related RII activity currently ongoing within the boundaries of the region to support the transformation of regional Health and Care systems. Through drawing insight from the findings and opportunities presented by this report, whilst also learning from best practice demonstrated across other areas of Wales, the UK and Internationally, the region possess a significant opportunity to further develop a highly conducive environment for RII activity across the realms of Health and Social Care. However, the extent of potential future success is dependent upon greater communication and the continued successful adoption of Open RII approaches across all regional partners including Health, Social Care, Local Authorities, Academia, Industry, Third Sector, and wider Civil Society. This will facilitate the cross-pollination of ideas and promote knowledge and resource sharing across organisational boundaries, where good ideas, expertise, resource, enabling infrastructure and related systems converge synergistically to realise social, economic, and environmental value for the regional population. The challenge is now to build upon the momentum and sustain the positive change and related approaches that have been described within the main body of this report.

13.0 Limitations of the Research Study

As with all research, there are many limitations to this study, that are outlined in the following body of text. Many of the limitations identified are a result of the context in which the research has been conducted (during Covid-19). Other limitations arise from the broad scope of the project, existing staff pressures and the highly complex Health and Social Care RII ecosystem. Furthermore, limitations also relate to the allocated research timeframes that were applied to ensure that research findings could be applied in practice promptly.

- The information contained within this report and related appendices offer a summary of information the researchers was able to obtain within the given research timeframes, boundaries, and context. It is acknowledged that because of the Covid-19 pandemic, some populations were unable to engage with the research,
- Although the report aims to offer an in-depth overview of the Health and Social Care RII landscape across the Cardiff & Vale region, the report does not claim to be entirely comprehensive due to the dynamic and evolving nature of RII activity, as well as the context (Covid-19) and timeframes within which the study was undertaken. However, stakeholders undertaking RII activity that has not been identified within the report or related appendices are encouraged to engage following the dissemination of the report
- The information provided in the report is believed to be factual up to the date the report was published (April 2022). This includes examples of current RII projects as well as projects undertaken or reported since 2018, although where considered appropriate, projects undertaken before this date were also captured to ensure it is comprehensive
- Due to the broad scope of mapping all health and social care related RII activity across the Cardiff & Vale region, this report focuses primarily on the public and third sector domains. This includes Health (NHS Wales and wider public sector), Social Care (Local Authorities and wider public sector), Academia and the Third Sector.

14.0. Recommendations for Further Research

Building on the limitations of this study outlined above, there are many potential avenues for future research, that would build upon the progress made by this review. Recommendations for future research thus include:

- Further interaction with stakeholders that were unable to engage with this research due to the context in which the review was undertaken, particularly relating to stakeholders from across Primary Care and Care Home settings.
- Further development of the RII ecosystem mapping exercise to include private sector organisations existing across Cardiff & Vale.
- A review and comparison of national and international examples of best practices related to innovative approaches to the delivery of Health and Social Care services with an aim to produce a framework to continue the upscaling and transferring of RII activities
- Formulate and assess methods of transferring best practices and other lessons learned through RII activities



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