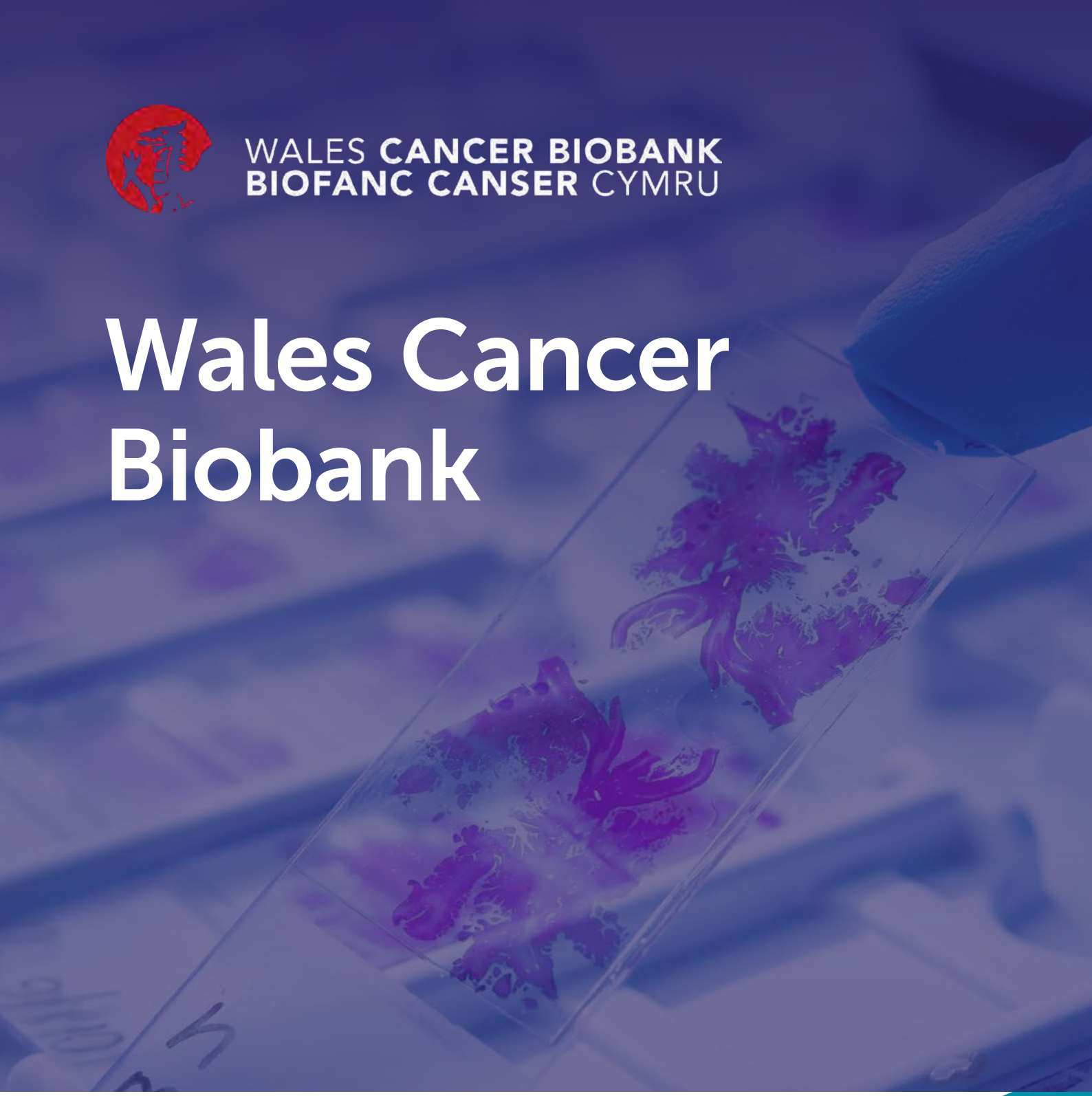
WALES CANCER BIOBANK
BIOFANC CANSER CYMRU

Wales Cancer Biobank



Ymchwil Iechyd a Gofal Cymru
Health and Care Research Wales

Ariennir gan Lywodraeth Cymru
Funded by Welsh Government

End of Award Report 2020-2025

Contents

Foreword

> It's not just about samples anymore...

The past 5 years has been a period of change for the Wales Cancer Biobank (WCB) in the way that it contributes to cancer research. Moving away from simply providing cancer tissues to researchers on request, we now work much more collaboratively with researchers to manage their complex needs for cancer samples and associated clinical and molecular data. This has engendered a culture of partnership that has led to greater engagement and leadership in the cancer research projects contributed to by WCB.

There has also been a change in senior management of the Biobank, and we are pleased to welcome Lisa Spary (Operations Manager) and Abby MacArthur (Senior Bioresourcing Team Lead) to the management team, with Alison Parry-Jones taking on a new International Biobanking consultancy role. These appointments provide additional experience and resilience during this exciting period of change.

Increasingly, digital information is being used to improve diagnosis of cancer earlier, and to help improve treatment outcomes for patients. Wales Cancer Biobank has been at the forefront of this digital revolution, adapting our practices to provide ethically secure routes to access this information for research, and to manage increasing volumes of digital data to accompany the samples that we provide to researchers in Universities, NHS research laboratories and the industrial healthcare sector.

Here we highlight some examples of the way that our changes in practise have impacted on cancer research over the past 5 years. More information on our ongoing strategy to implement these changes, and our view for the future, can be found in our strategy document – "A New Vision for Biobanking" – a full version of which can be accessed on the Wales Cancer Biobank website: **New Strategy, New Operating Structure, New Vision for Cancer Biobanking – Wales Cancer Biobank**.

Notwithstanding our commitment to adapt to changing needs for digital information, the provision of physical samples donated by patients remains at the very heart of what WCB does. We maintain that gaining access to these tissues is essential for research to improve our understanding of cancer and subsequently for innovation in cancer therapy and that these samples represent the most tangible contribution that cancer patients can make towards finding new treatments.

Therefore, people remain at the heart of what Wales Cancer Biobank is all about: from our lay volunteers, expert technical staff and nurses to the patients who selflessly donate their samples to help people like themselves in the future, we are grateful to them all.

We hope you enjoy reading the report. Further details can be found on the Wales Cancer Biobank website (**walescancerbank.com**) and we would be pleased to welcome you to our Facebook, X (Twitter) and LinkedIn family.

Professor Richard Clarkson, Scientific Director of Wales Cancer Biobank and Principal Investigator on the Health and Care Research Wales Infrastructure Award.

WCB Senior Team

Professor Richard Clarkson
Scientific Director and
Principal Investigator

Dr Alison Parry-Jones
Operations Director

Professor Richard Adams
Clinical Director

Dr Lisa Spary
Operations Manager

Abby MacArthur
Senior Team Lead

Nick Ross
WCB Strategic Advisory Board Chair

> Thanks to its own national cancer bank the Principality has long boasted one of the worlds' best cancer tissue archives. Now that the WCB has evolved from a library into something bigger – an active partnership between patients, NHS, academia and industry, and one which integrates tissue donations with biological and clinical data – Wales can boast new and world-class potential for cancer research.

The Wales Cancer Biobank Strategy

> Adapting to an evolving research landscape.

A new model for cancer biobanking in Wales

The primary aim of the 2020–2025 Infrastructure Award from Health and Care Research Wales was to improve capacity to deliver the Wales Cancer Biobank service to the wider research community, thus increasing both the number and type of projects delivered, helping to develop a host of innovations leading to changes in routine clinical practice.

This was divided into three objectives, each with constituent work packages:

Objective 1:

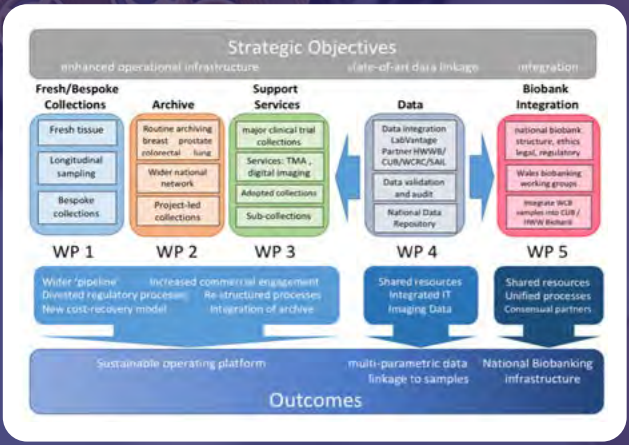
To increase the number and scope of cancer research projects supported by WCB (Work packages 1–3)

Objective 2:

To embed state-of-art data linkage (Work package 4)

Objective 3:

To integrate WCB into a wider biobanking network (Work package 5)



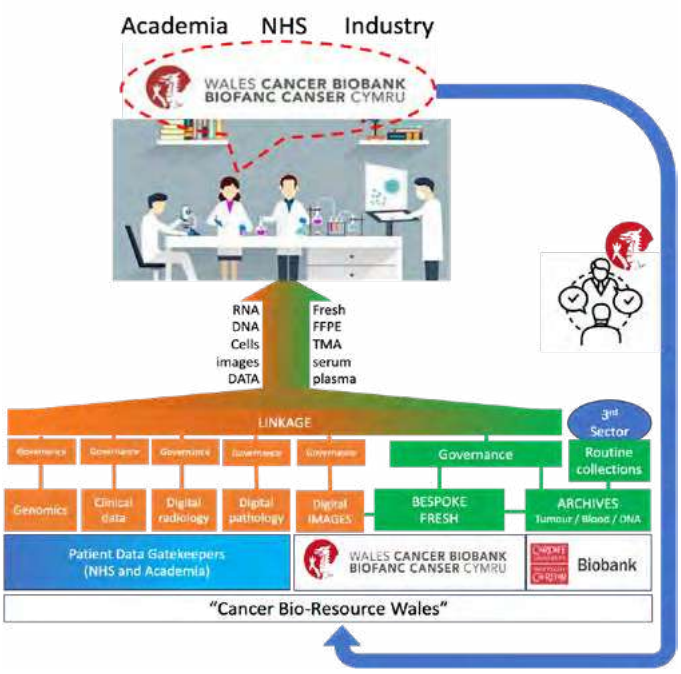
We are pleased to be able to report that each of these key objectives have been met; the highlights of which are summarised within this quinquennial report.

Our vision for biobanking in Wales

Over the past five years there have been seismic advances in cancer research mainly in response to rapid developments in artificial intelligence, computational modelling and molecular-scale technologies which have led to new innovations in cancer treatment and diagnosis. To remain relevant therefore, Wales needs an agile and sustainable biosample resourcing infrastructure, able to respond rapidly to changing researcher needs; one that underpins the Cancer Research Strategy for Wales (CReSt) as well as enabling wider UK and international cancer research networks. Thus, while delivering on its original strategic objectives, in 2024 WCB published a new five-year Strategy (2025-2030) which encompassed ***a new vision for cancer biobanking*** in Wales.

Our vision for the Wales Cancer Biobank is that by 2030 it will no longer be a stand-alone biorepository with its own biosample archive and clinical database; instead, it will be an integrated, financially independent bioarchive infrastructure able to access anonymised patient data directly from the NHS Wales clinical portal. It will transition from a 'passive' service provider to a pro-active research partner, leading on innovation and research delivery in the cancer space.

> We proposed a model in which biobanking processes would be embedded within NHS and academic infrastructures, where WCB would participate directly in research projects and engage with funders, maximising its cost recovery activity through lean and integrated working practices.



The culmination of these changes will be a new working model of biobanking that truncates the pipeline between patient and researcher, whilst offering a portfolio of state of the art information to accompany the biological samples.

True to our Core Values, patients remain at the centre of everything we do, as they not only contribute directly to our research through the donation of their samples – they are collaborators at the heart of biobanking with an important voice and a unique perspective, which will continue to be an extremely valuable resource for the Wales Cancer Biobank to utilise. We will therefore continue to strive to meet the wishes of patients by maximising the potential of their donations toward improving patient health and care in the future.

Wales Cancer Biobank Core Values as described in our Strategy 2025-2030

Performance

We aim to ensure our core biobanking activity meets the changing needs of cancer research and aligns with CReSt priority areas.

People

We seek to increase patients' opportunities to be involved in cancer research and to foster the development of the next generation of cancer researchers in Wales.

Promotion

We aspire to maximise the potential of WCB resources and expertise by expanding our network of stakeholders and partners in Wales and internationally.

Partnership

We plan to use our expertise through collaboration and leadership to accelerate innovation in cancer research, diagnosis and treatment.

We seek to increase patients' opportunities to be involved in cancer research and to foster the development of the next generation of cancer researchers in Wales. We aspire to maximise the potential of WCB resources and expertise by expanding our network of stakeholders and partners in Wales and internationally. We plan to use our expertise through collaboration and leadership to accelerate innovation in cancer research, diagnosis and treatment. We aim to ensure our core biobanking activity meets the changing needs of cancer research and aligns with CReSt priority areas.

Core Metrics
Reporting period: 2020/2025

WALES CANCER BIOBANK
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Health and Care Research Wales infrastructure award to the group

Direct funding awarded **£2.4M**

Jobs created through direct funding **13**

Grants won during reporting period

Grants won	Led by group	Group collaborating
Number	2	56
Value	£102,587	£13.2M
Funding to Wales	£102,587	£4.4M
Funding to group	£102,587	£535,101
Additional jobs created for Wales	1	5
Additional jobs created for group	1	2

25 Number of publications

27 Number of public engagement events

31 Number of public involvement opportunities

Biobanking metrics

1548 Consents

79 Research requests

66 Research requests approved

15989 Samples issued to research projects

102 Projects receiving samples

20 Publications using samples

Ymchwil Iechyd a Gofal Cymru
Health and Care Research Wales

Llywodraeth Cymru
Welsh Government

Additional Metrics

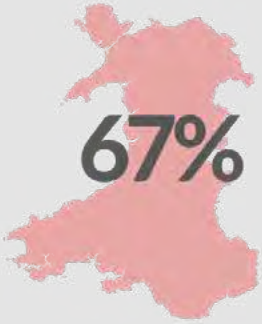
Reporting Period: **2020-2025**

201
Number of Enquiries

9
Leadership involvement in UK/International Initiatives

5
New Initiatives and/or Processes

Supported Projects based in Wales

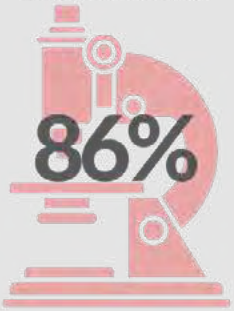


67%

Completed Projects since April 2020

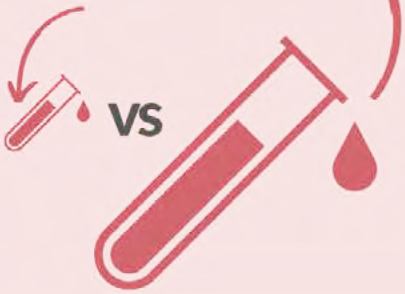
54

Samples with Quality Assurance Data



86%

7x Donations used compared to new donations received



393
Patients engaged through WCB Activity

Engagement Activities

53
Professional

41
Public/Patient

Key Achievements and Highlights 2020-2025

This award period has seen a change in the relationship between WCB and its research partners seeking biosamples. Moving away from its 'service model' of sample provision on request, to a more collaborative research-oriented arrangement where WCB engaged with research projects more iteratively, has led to more joint funding applications with academics, NHS and industry partners. Moreover, there has been a significant shift in the type of projects, project partners and biosamples being issued – with a marked increase in industry-led projects requiring sample-based digital data. These changes were driven by our new 5-year strategy, published in 2024, which focusses on delivering CReSt through partnership with key stakeholders in Wales to provide patient samples and data in a sustainable and streamlined way.

These changes are reflected in the key highlights listed on the following pages.

Performance

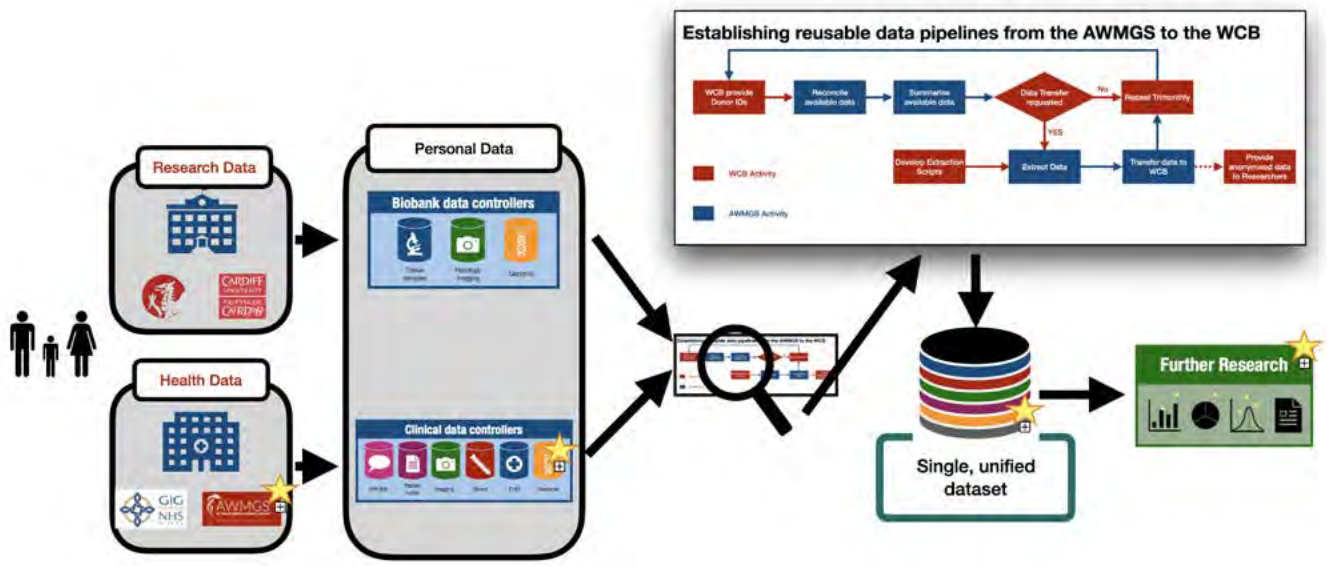
Leading the Bioresourcing Agenda:

- In 2020, WCB was awarded ***UK Biobank of the Year*** by UKCRC, highlighting our flexibility as a biobank during the COVID pandemic. Continuing from this success, WCB Operations Director Dr Alison Parry-Jones who has represented WCB on both national and international levels, was elected President of the International Society for Biological and Environmental Repositories (ISBER) in 2023.

- WCB continues to lead on ***data-linkage initiatives promoting the sharing of patient data*** between academic and NHS stakeholders in Wales. These include a formal data sharing agreement with the Secure Anonymised Information Linkage (SAIL) Database, integrating quality data sets and ensuring greater health care data linkage across Wales for research benefit; and a collaboration with Roche Pharmaceuticals Ltd to ***establish a prototype Trusted Research Environment (TRE) for cancer research*** which builds on existing Welsh data integration infrastructure. The latter partnership led to the innovative ***WCB Digital Project***.

- WCB's novel ***eConsent platform*** has allowed us to move from paper-based consenting to an electronic format with automatic data upload to the WCB database. This aligns with WCB strategy for streamlined processes and forms the foundation of our new strategic approach to sustainable consenting. Following the successful integration of the eConsent programme into clinic-based activities, WCB has received significant interest from biobanks worldwide to implement similar practices. WCB also surveyed its patient voice to explore opinion on an independent consent process and continues to explore the concept of a more streamlined, individual-led consenting process with local NHS Research and Development Senior Leadership Teams and Patient Carer Partnership Boards.

Performance



THE WCB DIGITAL PROJECT: Illustrating the novel pipelines of dataflow established through the WCB Digital project utilising broad consent to access genomic diagnostic data for Welsh cancer patients consenting into Wales Cancer Biobank.

The Wales Cancer Biobank Digital (WCB Digital) project is an All-Wales approach to integrated sample and genomic data access for the cancer research community. This project presents an exciting collaboration between national services: the Wales Cancer Biobank, Genomics Partnership Wales, Wales Gene Park, and the All-Wales Medical Genomics Service (AWMGS) and Cardiff University's Advanced Research Computing at Cardiff (ARCCA). Led by our data integration strategy leads Liz Merrifield and Peter Giles, this project delivers upon key research components of the Genomics Delivery Plan for Wales and CReSt strategies by establishing a novel genomic data pathway from the NHS to the cancer research community. WCB Digital will link patient samples with genomic profiles, routine diagnostic results, treatment and outcome datasets for breast, lung, prostate and colorectal cancers, amongst others. This is a unique model in terms of UK and Welsh cancer research.

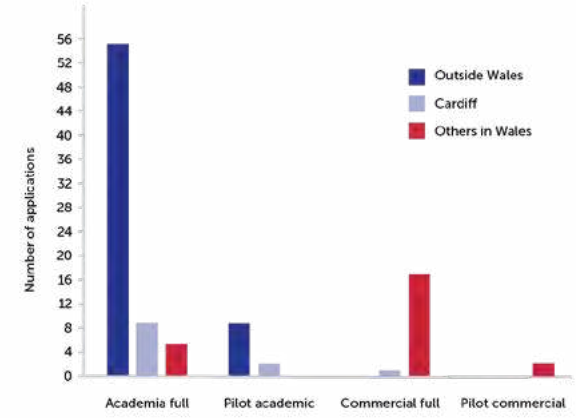
Performance

More Samples for Research:

WCB continues to collect samples for approved projects and to add to the archive to be readily available for future projects. Over 17,000 patients in Wales have now donated samples from over 30 solid tumour types. The largest collections are in breast, colorectal, prostate and lung cancers where donated cancer tissues and blood samples are linked with the patients' clinical diagnosis, outcome and treatment history alongside any molecular tests performed during their treatment.

WCB has met its five-year objective to increase the number of projects and samples provided for research. Since 2020, ***101 research projects*** have received samples, data and/or images. The majority of projects supplied (76) were academic projects based at universities within Wales. Of the 25 from outside Wales, more than three quarters (19) were projects performed by health care-related companies. Work in Wales accounted for 75% of applications supported during the year and nearly 60% of the total number of samples issued.

Projects supplied during 2020-25

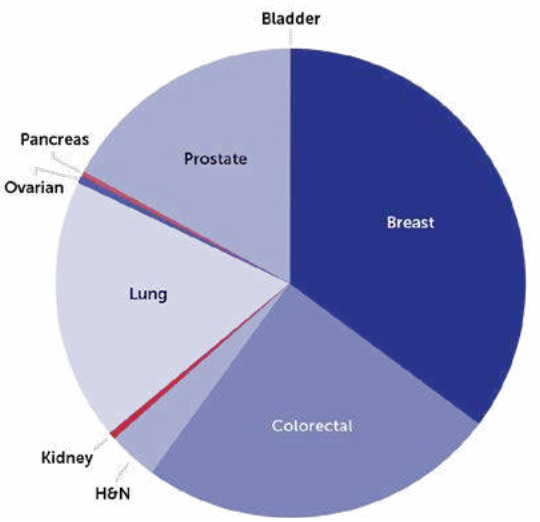


The number of individual WCB applications that were supplied throughout the 2020-2025 award period.

During the same period, ***15,989 samples were sent out to researchers***. The majority of samples issued (95%) were either breast, colorectal, prostate or lung tumour samples. Formalin-fixed paraffin-embedded tissue samples were most frequently requested, accounting for 45% of the samples that were issued to researchers.

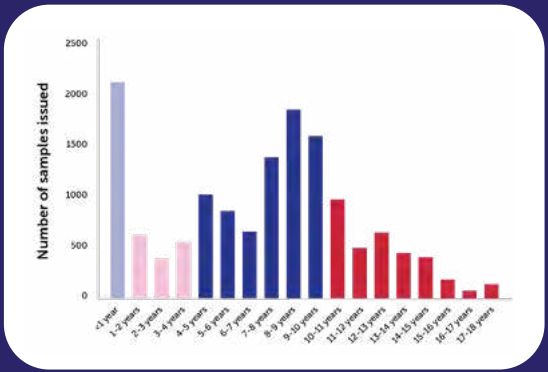
Tumour types requested

During the five-year funding period the main tumour types issued to researchers were from the big four cancers – breast, colorectal, lung or prostate.



Performance

The time taken to issue a sample for research for the first time, peaks at 8-9 years after collection.



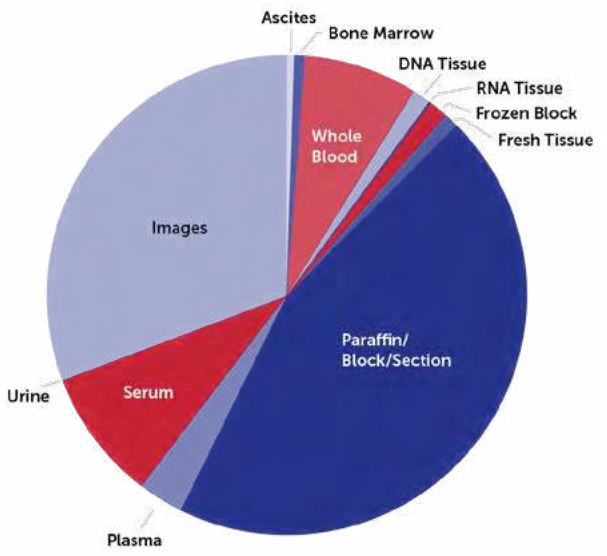
In 2023 an audit of sample usage revealed the importance of a mature biobank. The study showed that 15% of WCB samples issued to research were consented within the 12-month period immediately prior to issue (light blue bar), with the remaining 85% used from the archive. Nearly a quarter (23%) of samples used were from consents >10 years old (red bars). Samples from the archive are used across many years and 43% of donations have had at least one sample used in research. Across all years, 19% of donations had the first sample released within 1 year of the consent date.

Scientific Director **Richard Clarkson** commented:

> This audit highlights the importance of a mature archive that provides a broad spectrum of different tumour samples for future cancer research.

Sample types issued

Various sample types were issued to projects over the five-year funding period with formalin-fixed paraffin-embedded tissue being the most frequently requested. An increase in the percentage of digital H&E images was also observed.



Over the past two years, the Biobank has seen a surge in requests for digital images of tumour tissues, accounting for two thirds (67%) of sample types issued during that period. Overall, this equates to 30% of all samples issued by the Biobank over the five-year period. This reflects the growing trend in AI and digital based cancer research and highlights the need for Biobanks to remain agile to trends in researcher needs. More than 4,000 images were supplied to industrial partners, the proceeds of which were reinvested into building capacity to support future data and digital – based research.

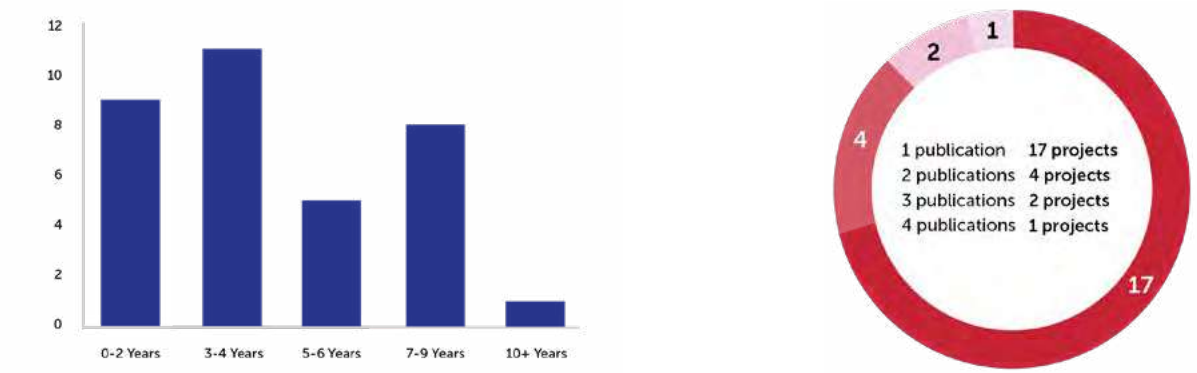
Year	2015-2020	2020-2025	% increase
Industry led projects	5	24	480%

There has been a significant increase in the provision of digital images for AI-based health care related companies in the past 5 years.

Performance

An Increase in Our Research Outputs:

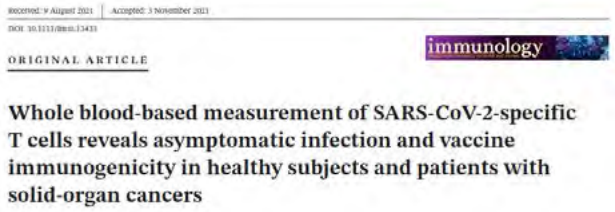
There have been ***26 publications over the past five years*** from research groups who used our donated samples in their studies. This represents a ***5-fold increase in the annual collaborative research output*** compared to the previous 10 years of WCB activity. An audit of publications arising from WCB samples, carried out in 2023, identifies one potential reason for this increase in research productivity. The publication audit showed that the mean time from supply of samples to the researcher to publication is 4 years, with 27% taking seven or more years to publish. Most projects supplied with samples result in one publication, but on seven occasions (~30%) projects gave rise to multiple publications.



Audit of research outputs up to 2023: The number of publications arising from projects supplied with samples from WCB peaks at 3-4 years after samples are delivered to the researcher, with a third taking more than 7 years to publish.

Examples of published research involving WCB:

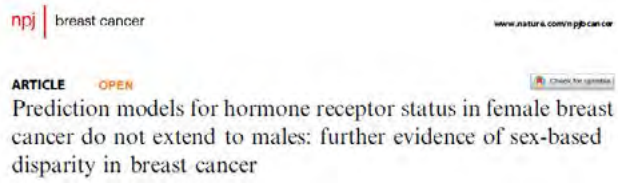
- A study from Professor Godkin's laboratory at Cardiff University took advantage of the ability of WCB to be able to rapidly access samples from patients during COVID in order to study infectivity in different patient groups during the pandemic (Scurr et al 2021 PMID: 34775604).


ORIGINAL ARTICLE

immunology

Whole blood-based measurement of SARS-CoV-2-specific T cells reveals asymptomatic infection and vaccine immunogenicity in healthy subjects and patients with solid-organ cancers

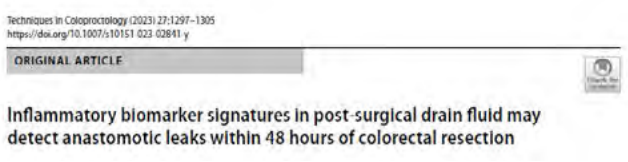
- WCB supported a collaboration between the University of Aberdeen and the University of Dresden that aimed to apply new AI techniques to images of male breast cancer to help identify targets for treatment specific to men with breast cancer (Chatterji et al, 2023. PMID: 37940649).


npj | breast cancer

ARTICLE OPEN

Prediction models for hormone receptor status in female breast cancer do not extend to males: further evidence of sex-based disparity in breast cancer

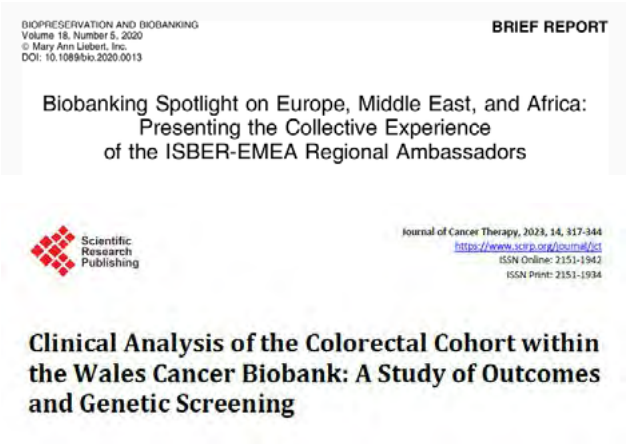
- WCB accessed fluids from patients who had undergone colorectal surgery for bowel cancer for a study led by Professor Eberl at Cardiff University, investigating the potential of a new test to identify those patients who experience leakage from the surgical site (Cuff et al 2023. PMID: 37486461).


Techniques in Coloproctology (2023) 27:1297–1305
https://doi.org/10.1007/s10151-023-02841-y

ORIGINAL ARTICLE

Inflammatory biomarker signatures in post-surgical drain fluid may detect anastomotic leaks within 48 hours of colorectal resection

- There have also been five ***new Wales Cancer Biobank-authored papers*** over the past five years. These publications range from editorial commentary on the state of play of international biobanking (Afifi et al 2020. PMID: 32780585) to a genetic analysis of a cohort of colorectal cancer samples from its archive (Spary et al. 2023).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DOI: 10.1089/bio.2020.0013

BRIEF REPORT

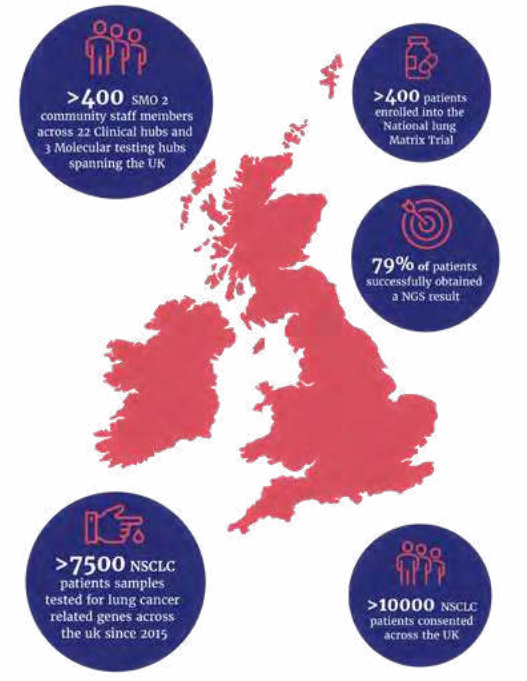
Biobanking Spotlight on Europe, Middle East, and Africa: Presenting the Collective Experience of the ISBER-EMEA Regional Ambassadors

Scientific Research Publishing

Journal of Cancer Therapy, 2023, 14, 317-344
https://www.scirp.org/journal/jct
ISSN Online: 2151-1942
ISSN Print: 2151-1934

Clinical Analysis of the Colorectal Cohort within the Wales Cancer Biobank: A Study of Outcomes and Genetic Screening

WCB continues to be a key contributor to clinical trials research, including the **Cancer Research UK (CRUK) Stratified Medicine Programme (SMP)** where it acted as the 'Cardiff Clinical Hub'. WCB consented over 2300 patients across Wales for this program, contributing over 2000 samples for testing. This work has seen WCB support the recruitment of Welsh patients with lung cancer into world leading clinical trials, including the National Lung Matrix trial. It established our reputation as a leader in integrated clinical research within the NHS environment – linking state of the art tumour biomolecular analysis in small tumour samples.



SMP Figures. *The national figures for the SMP project (left) and the Cardiff Clinical Hub (WCB) figures (right).*

Wales Cancer Biobank samples were instrumental in delivering pilot studies that ***developed new diagnostic tests for implementation in routine NHS practice***. These collaborations with the All Wales Medical Genomics Service (AWMGS) and TeloNostiX Ltd were supported by independent funding from Cancer Research Wales and led by Wales Cancer Biobank. For further information on the delivery of these exciting new diagnostics tests, see our partner's websites at (**medicalgenomicswales.co.uk/index.php/en**) and (**telonostix.com**).

- Implementation of a new diagnostic test for a range of cancer types into routine NHS practice in Wales. **PI – Dr Rhian White**.
- Development of a genome array for detection of BRCA mutations in prostate cancer for future implementation into NHS routine practice. **PI – Dr Sian Morgan**.
- Data demonstrating a novel target for immune therapy of lung cancer. PhD awarded. **PI – Dr Rhian White**.
- Data to support future implementation of a clinically accredited test (ISO17025: TeloNostiX Ltd) of prostate cancer samples as a prognostic marker. **PI – Prof Duncan Baird**.

> We chose to work with WCB because of the availability of samples and the direct interaction with staff to help inform on sample acquisition, sample collection and preparation.
>
> *Prof Duncan Baird, TeloNostiX Ltd*

> Wales Cancer Biobank and the ASTRA2 funding has facilitated the vital development of two new genomic services: a genomic assay for the detection of BRCA1/2 gene mutations for patients with mCRCP for the purpose of determining eligibility for Olaparib treatment in mCRCP and the validation and implementation into a diagnostic NHS laboratory, of which AWGL is the first in the UK, of a 500 gene panel using cDNA which has enabled the launch of the QuiDNA project.
>
> *Dr Rhian White, All Wales Medical Genomics Service*

Investing in People

People

New Qualifications for Wales Cancer Biobank staff

Multiple team members at WCB have been awarded the Qualification in Biorepository Science (QBRS). The qualification was jointly developed by the International Society of Biological and Environmental Repositories and the American Society for Clinical Pathology to meet the increasing demand for biobank and biospecimen related education to help to professionalise a biobank's workforce and improve standards. Working together the two organisations developed the qualification which was first offered in 2020 and is open to candidates around the world.

In July 2021, Non Williams became ***the first person in Europe to pass*** the new Qualification in Biorepository Science (QBRS) exam. Since then, Abigail MacArthur (2022) and Paola Foulkes (2023) have also successfully sat the QBRS exams.

Non commented that 'it was great to have an exam for individuals to gain recognition for their skills and competencies as biobankers' and that 'the ability to study at home and do the exam online really helped with fitting in around daily work commitments'. Abigail added 'I've learned a lot through my time working at Wales Cancer Biobank, so it is great to have a qualification in place that recognises this specialist knowledge'.

Paola Foulkes (right) joined WCB in 2020 as a laboratory technician, managing the clinical trial sample collections and facilitating the collection, processing, and storage of biosamples in the WCB archive. WCB are now supporting Paola's professional development, working towards her Institute of Biomedical Science (IBMS) registration – further embedding WCB staff within NHS departments.

QBRS recipients being recognised in the ISBER President's incoming address at the ISBER International Conference, Cairo Egypt.

People

Wales Cancer Biobank Studentships

To further research collaborations and to enhance relationships with Cardiff University, both Masters (MSc) and PhD studentships have been supported by WCB. These projects have been developed to explore how advances in artificial intelligence can improve the quality of our biobank data and how the data needs to evolve to enable linkage with other datasets.

A student on the ***Applied Bioinformatics and Genomics MSc*** has undertaken a 6-week project looking at how machine learning and AI methods can be used for data validation. A ***PhD studentship*** was successfully funded from Myristica which will commence in October 2025, supported and supervised by WCB which will use samples and images from Clinical trial and breast cancer samples held in WCB.

Clinical Director, Professor Richard Adams commented:

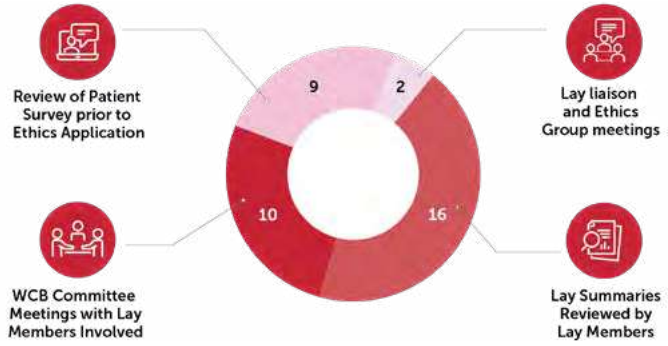
> "The supervision of post-graduate studentships is a new venture for WCB, which we hope will not only provide valuable training for our researchers of the future but will raise awareness within the research community of the importance of quality assured samples for research through accredited biobanks."

Public Involvement

People

Patients remain at the heart of everything that WCB does. Their donated samples are central to the biobank's core remit and patient volunteers continue to be involved in the operational management and strategic development of the biobank by virtue of members of WCB's lay group and volunteer consenters. The ***WCB Lay Liaison and Ethics Group (LLEG)*** welcomed two new members within this grant period and all were invited to join WCB strategic and executive committees, including the management committee. This ensured patient voice was heard across the biobank.

Lay Group Member	Lay Group	WCB Committee Membership
Bob Hall	Chair	Executive Group
Pam Parkhouse		Operational Management
Sue Campbell		Human Tissue Authority Persons Designated/Local Leads
Maggie Hughes		Strategy Group
Richard Bevan		Strategy Group
Bryony Amesbury		Operational Management



All members of the lay group participate in the review of applications for samples and/or data on a rota system. The lay members review the lay summary in the applications to ensure plain language is used and the summary is understandable to a lay audience. Applications will not be approved for access until the lay member is happy with the summary of the research, which is used on the biobank website to highlight the research supported.

WCB reinstated its ***volunteer consent programme*** at Velindre Cancer Centre after a period of inactivity following the COVID pandemic. Three new volunteer consenters were recruited in June 2024, all of which completed the classroom-based training and moved into the practical, clinical environment where they learned the peer-to-peer consenting process. Volunteer consenters have a presence in three Velindre outpatients clinics on a weekly or fortnightly basis – ensuring WCB is offering patients across numerous tumour types the opportunity to engage with cancer research. The introduction of volunteer consenting in Velindre has increased the biobanks engagement with patients by 200%.

This activity enhanced the already-established relationship with Velindre's Patient Engagement team and the Patient and Carer Partnership Board and WCB benefits greatly from the experience of both teams, allowing it to develop innovative projects and be guided by its patient population.

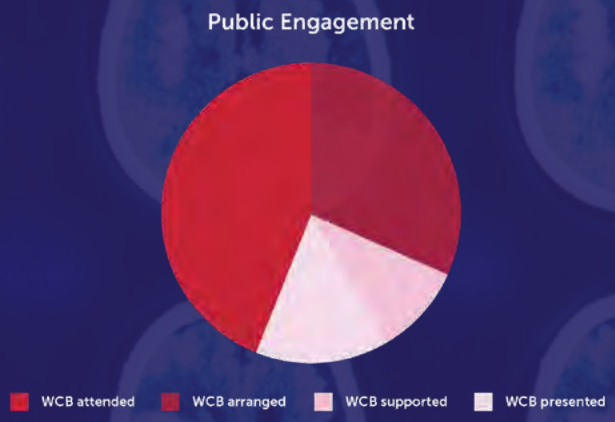
People

Engagement

Public Engagement

Public and Patient Engagement has been a cornerstone of WCB activity for the past decade, and the patient voice has a key role across all aspects of biobanking. The patient voice is vital to promote and protect the public interest and ensure research is grounded in real word values.

Throughout this grant period, WCB has engaged with its patient supporters and highlights include the launch of our new YouTube channel with content aimed at improving public awareness of biobanking. WCB has also established a direct line to the patient voice through the development of several patient surveys on topics such as engagement in cancer research and the consent process. These surveys initiated an innovative new project on an independent consent model.



Professional Engagement

WCB engages with its stakeholders, partnerships and counterparts across the globe – ensuring that it stays at the cutting edge of biobanking standards and practices. WCB is pro-active in sharing its own knowledge and experiences – presenting posters and talks across various platforms, including international research and biobanking conferences, government and industry-led engagement events and invited academic keynote presentations.

In-person presentations on WCB by WCB staff over the past 5 years has disseminated our message to four continents.

Our Research Partners

Collaborations are at the heart of WCB's new strategy. New partnerships will drive greater involvement in research and will leverage a larger proportion of external grant income into WCB, facilitating our efforts for sustainability.

To promote our engagement with research partners we developed **guidelines for collaboration/engagement** with the academic and industrial sectors – highlighting our flexibility in the way that we can work with cancer researchers at several levels.

Partnership

Biobanking Collaborations

- ***Partnership with Breast Cancer Now*** is the exemplar of our new strategic direction. This is a formal collaborative partnership whereby BCN has committed to funding a full-time WCB post for 5 years to collect, process and share breast cancer samples with the Breast Cancer Now Biobank, while also supplementing and maintaining the WCB archive. Not only does this demonstrate the potential for sustainability of the archive going forward it also promotes the dissemination of Wales-based patient samples for research.

- ***Integration with Cardiff University Biobank*** remains a central tenet of our plans going forward. Discussions are ongoing with Cardiff University (College of Lifesciences) and the Cardiff University Biobank to explore the potential for an efficient and sustainable biobanking facility.

- ***Collaborations with AML and BRAIN biobanks*** have recently been agreed whereby WCB provides regulatory and technical support, training and development of staff and consequently staffing resilience with these biobanks. This is part of WCB's ongoing mission to facilitate closer alignments with Welsh and UK biobanks to promote sustainable access to samples.

Academic Collaborations

We have been targeting early engagement and collaboration with academics to leverage greater involvement in cancer research and to direct external funding into WCB staff time. This involves engagement with individual research groups (local and international); collaborating on large research grants, program grants and platform grants; and embedding our activity within research institutes and collaborative networks. These activities are exemplified by the following:

- ***Embedding WCB practices within the Cardiff Cancer Research Hub (CCRH)***. This tripartite collaboration between Cardiff University, Velindre and Cardiff and Vale University NHS Trusts aims to promote interdisciplinary cancer research between academia and NHS in Cardiff.

- ***Trials adoption and hosting of samples*** remains an important function of the Biobank which provides for long-term partnerships with national trials teams and a profile in the international clinical trials arena. Hosting of trials samples has proven beneficial to the project teams with an extension being granted to the Add-Aspirin and Stampede trials for continued storage.

Partnership

NHS Collaborations

- Ongoing close working relations with Velindre UNHST, has led to the ***reintroduction of volunteer consenting and streamlining consent*** within NHS clinics with our eConsent module with Velindre as a partner. This includes the development of a new proposal to pilot the "independent" consent module, with a view to an application for funding to support this through Velindre Charities.

- Ongoing collaborations with the pancreatic team in ***Swansea Bay UHB NHS*** Trust have ensured that researchers can access fresh patient tissue samples for ongoing research in a much-needed field. This collaboration has enabled WCB to support collections across national health boards in Wales and will help to initiate further collaborations across multiple cancers.

Industry Collaborations

- Since the start of the 2020-2025 award period, we have focussed on improving our engagement with industry. We have seen a major uplift in commercial partnerships with a near ***5-fold increase in industry-led projects*** compared to the previous award period. This is exemplified by a fruitful long-term relationship with Panakeia Technology Ltd, who have completed two research projects with us and have been involved in two innovation funding applications, with WCB as co-applicants or leads.

Conclusion and Looking Forward

Over the next grant period, we will be aiming to increasingly steer our biobanking model towards sustainability and innovation, with closer alignment with stakeholders and partners, aiming to avoid duplication. We hope to pilot our new independent and facilitated consenting model and work with Digital Health Care Wales and SAIL to pilot new data flow processes. As described in our new strategy 2025–2030: we will align practices, regulatory procedures and physical infrastructure with the Cardiff University Biobank. This is a major component of the additional support provided by the host Higher Education Institute (HEI), Cardiff University to support WCB Conclusion and Looking Forward.

We will also seek to integrate with NHS-Research and Development strategies in Velindre and Cardiff and Vale, partly through our ongoing commitment with the Cardiff Cancer Research Hub (CCRH), but also independently establishing workflows through NHS-pathology services, All Wales Medical Genetics Service (AWMGS) and other NHS stakeholders in the cancer field.

As our previous eConsenting and volunteer consenting initiatives attest to, we will be aiming for greater inclusivity and efficiency in patient consent.

We look forward to continuing to implement our new strategy aimed at increasing engagement with the research community to help deliver impact on diagnosis and treatments for cancer patients. Thanks go to many, but especially to the patients in Wales for their continued support and willingness to donate samples and data to the biobank.

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