



Wales Cancer Bank



Ymchwil Iechyd
a Gofal **Cymru**
Health and Care
Research **Wales**



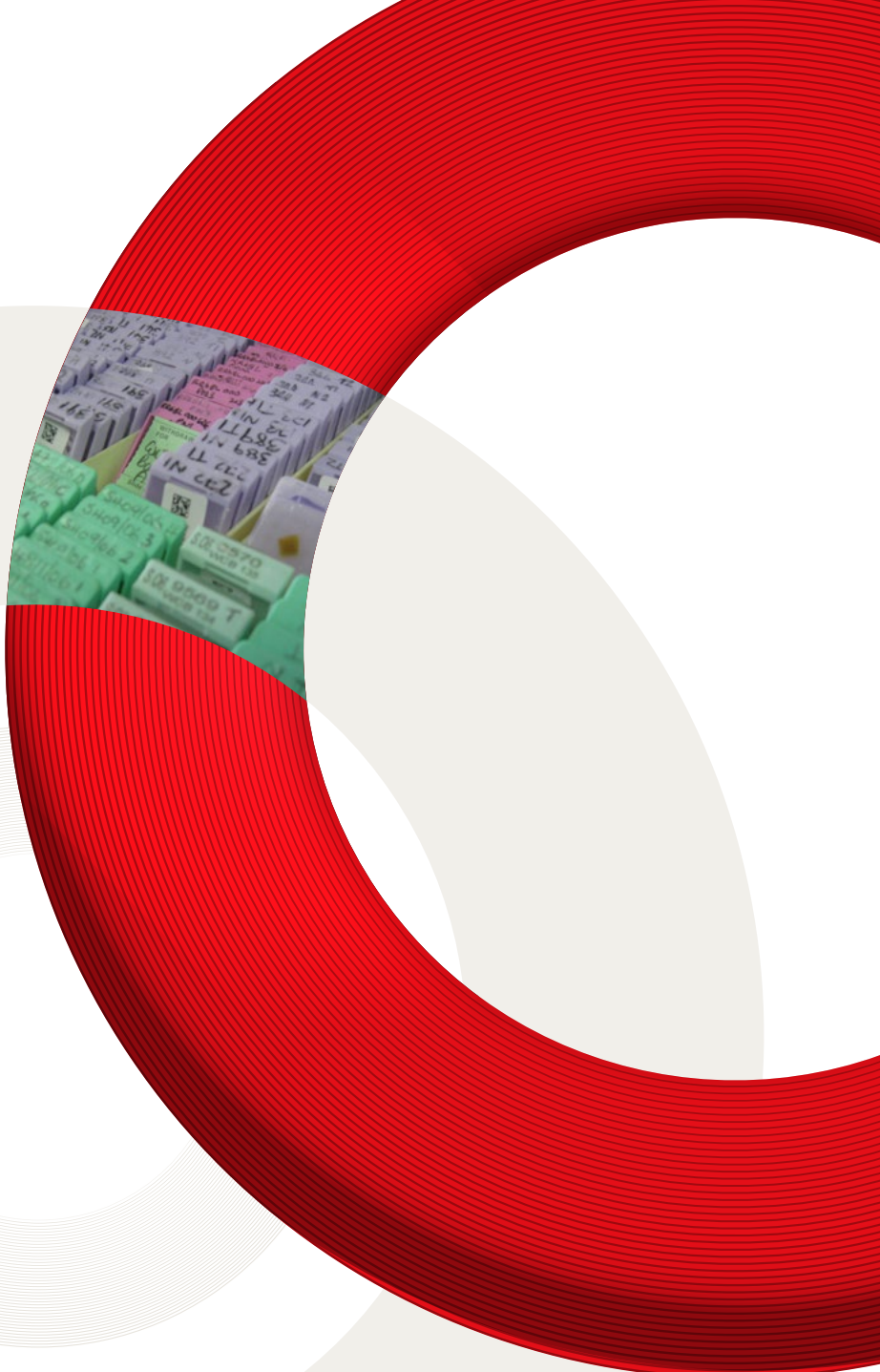
Ariennir gan
Lywodraeth Cymru
Funded by
Welsh Government

2020 - 2021 Annual report





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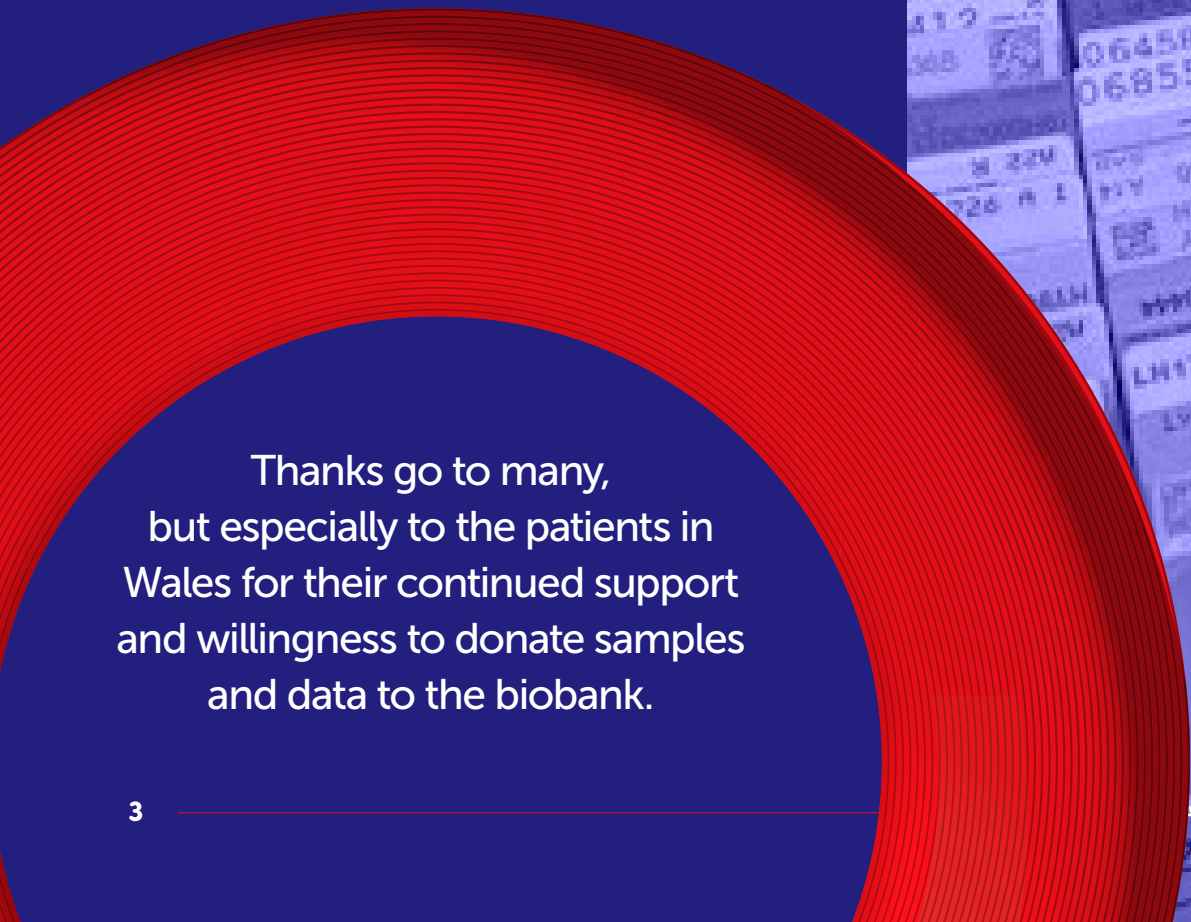


2020 - 2021
Annual report



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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.

Foreword



The Wales Cancer Bank (WCB) approaches patients in Wales with known or suspected cancer to ask them to consent to donate biosamples and data for use in future cancer related research. The Wales Cancer Bank is a Health and Care Research Wales Infrastructure group, funded by Welsh Government, hosted by Cardiff University, with the grant held within the School of Biosciences. The WCB works closely with a variety of stakeholders to facilitate the supply of biosamples and data from cancer patients in Wales to researchers worldwide.

This report gives an overview of the activity between April 2020 and March 2021. In line with Cardiff University's COVID policy, all staff worked from home between April and July 2020 and NHS

staff were diverted to clinical duties. The WCB staff were able to return to the laboratories as part of the first phase of return to campus in July and consenting restarted in September 2020. After an interrupted year WCB is pleased to report good progress and increased support to the cancer research community. More information is available on the project website (www.walescancerbank.com) and we are excited to announce the development of information videos and plans to redevelop the website for enhanced communication and engagement in the coming year.

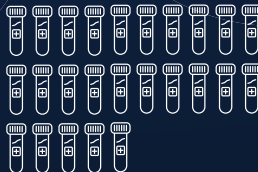
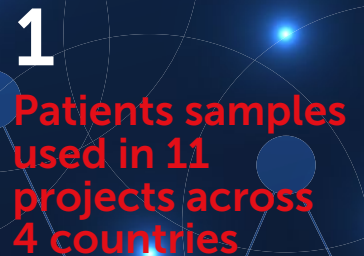
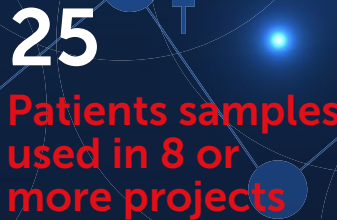
Thanks go to many, but especially to the **patients** in Wales for their continued support and willingness to donate samples and data to the biobank.



Background

The Wales Cancer Bank has been consenting cancer patients around Wales to donate to the biobank since 2005. The WCB is licensed by the Human Tissue Authority under the UK Human Tissue Act (2004) to store human samples for research and has ethics approval from Wales Research Ethics Committee 3 as a Research Tissue Bank. WCB collects biosamples and data for use in research projects worldwide to help better understand cancer, how it starts, how it progresses and how it can be treated in new and improved ways for

cancer patients in the future. As one of the UK's largest and longest-established biobanks, with an international reputation for excellence, the Wales Cancer Bank exemplifies how a centralised infrastructure adds value to the research community. WCB has spent 16 years establishing a core infrastructure and know-how within Wales and in recent years WCB has adopted more efficient procedures to meet the needs of an increasing number of researchers applying for bespoke and archived tissues.



Aims and Objectives

The primary aim of the 2020–2025 Infrastructure award from Health and Care Research Wales is to improve capacity to deliver the Wales Cancer Bank 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 is divided into three objectives, each with constituent workpackages:



Objective 1: to increase the number and scope of cancer research projects supported by WCB (Workpackages 1–3).



Objective 2: to embed state-of-art data linkage (Workpackage 4)



Objective 3: to integrate WCB into a wider biobanking network (Workpackage 5)

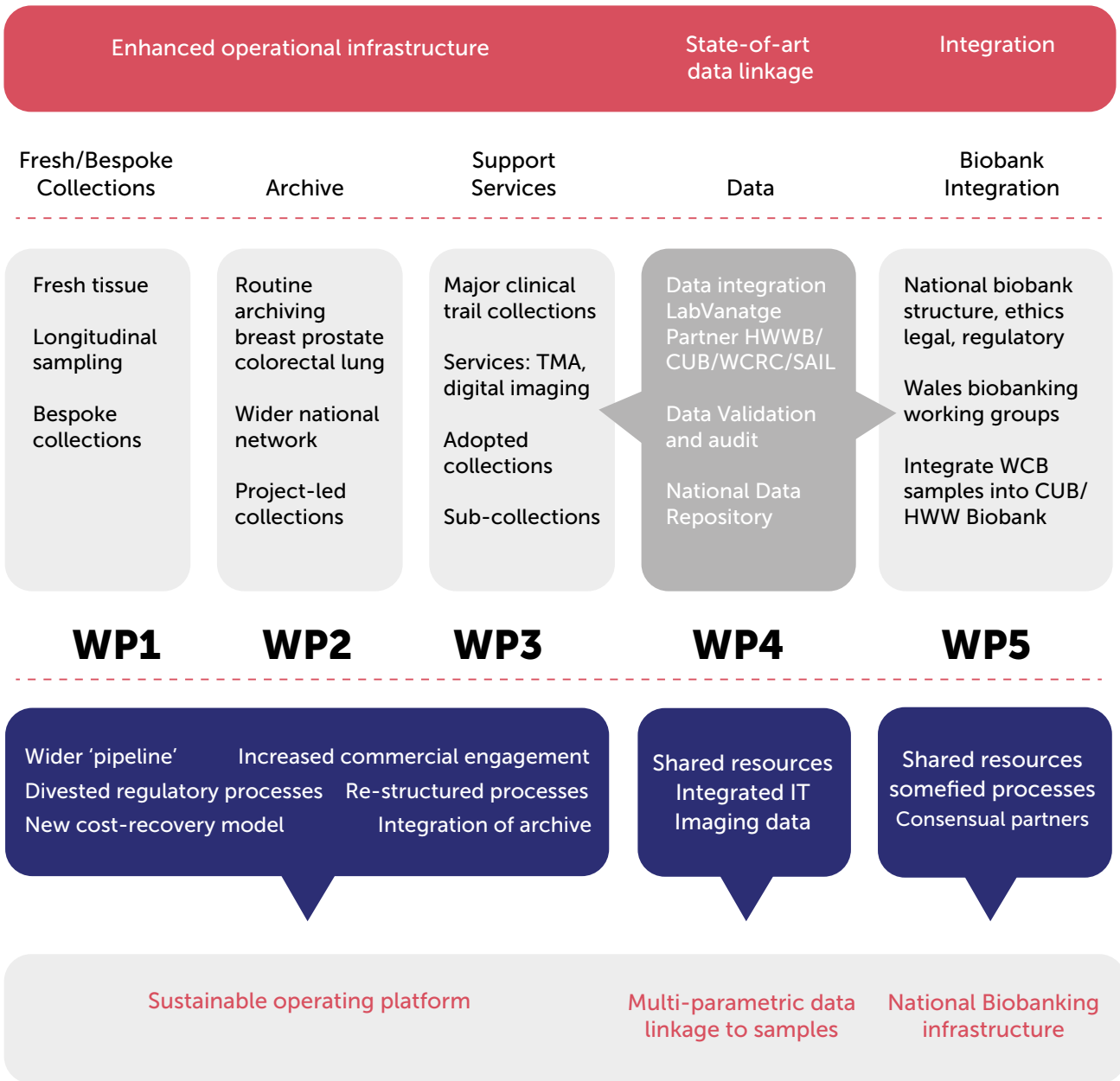
Objectives 2 and 3 will be addressed through alignment/integration with key infrastructure partners and relies on the activities of the core infrastructure outlined in Objective 1.

Public and Patient Engagement has been a cornerstone of WCB activity and strategic planning for the past decade and the patient voice has a key role across all Workpackages. The patient/lay voice is vital to promote and protect the public interest and ensure research is grounded in real world values. Indeed, there is no better example of patient involvement and Wales Cancer Bank Annual Report 2020–21 6 of 15 contribution to cancer research than the donation of their tumour samples to research.

However, patients should be much more than donors of 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 Bank to utilise. Patients will help ensure that WCB meets the wishes of patients in making their donations achieve maximum potential toward improving patient care in the future.



Strategic Objectives



Outcomes

WCB Senior Team



Professor Richard Clarkson
Scientific Director and PI



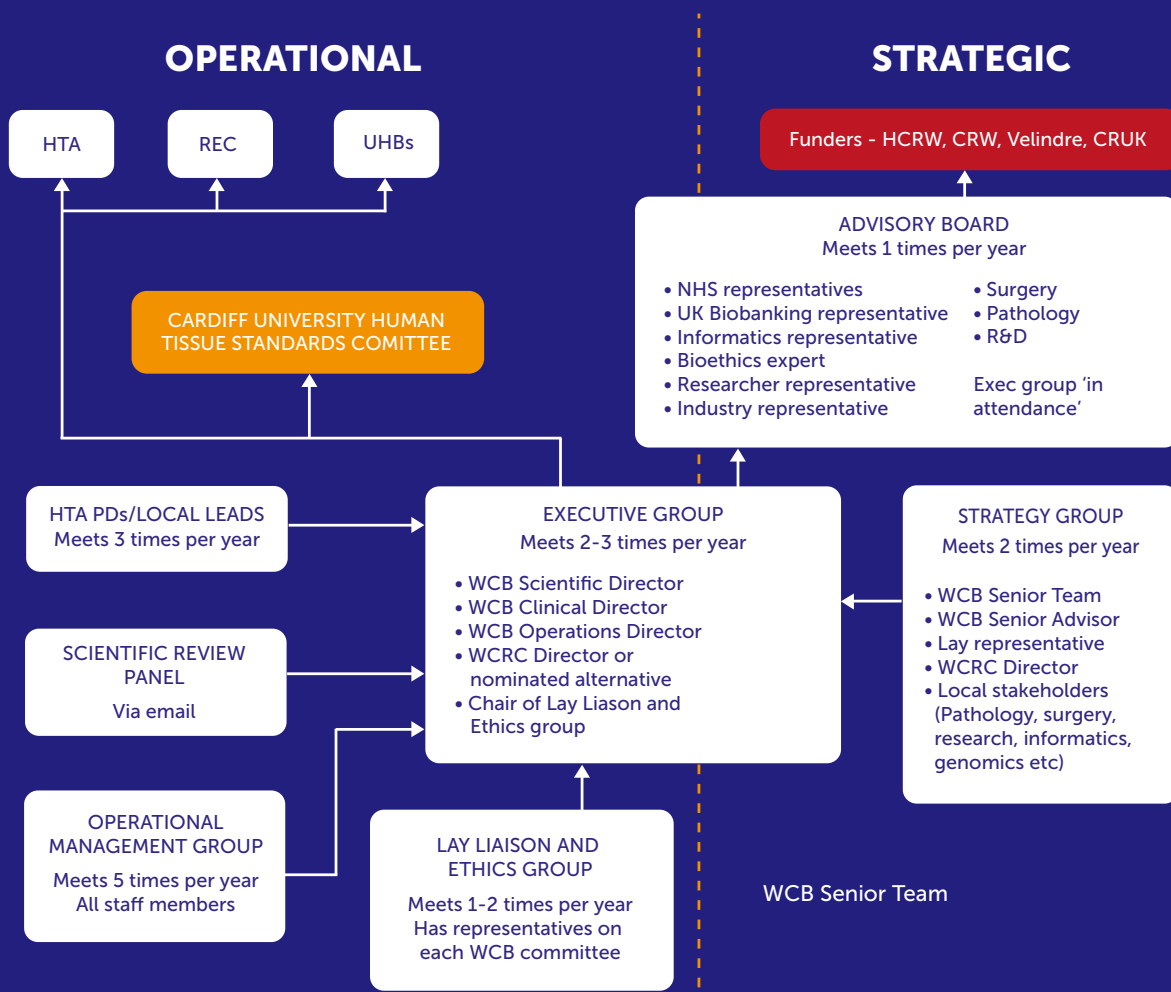
Dr Alison Parry-Jones
Operations Director



Professor Richard Adams
Clinical Director

The Wales Cancer Bank staff are based in Cardiff, Swansea and Newport and cover a range of biobanking activities from consenting patients and data extraction, processing samples, curating samples from clinical trials, IT and database development, co-ordinating projects, managing applications and administrative process.

The organogram shows the governance structure of WCB, with the contributing groups and committees and the reporting lines to legal and regulatory bodies, funders and host institution.



Key Partnerships



Canolfan Ymchwil Canser Cymru
Wales Cancer Research Centre



The Wales Cancer Bank has an active role as a key stakeholder in the Welsh cancer research community, linking NHS, academic and 3rd sector organisations for the advancement of knowledge in cancer research.



RESEARCHERS



PATIENTS



PUBLIC

The Wales Cancer Research Centre (WCRC) remains the key academic research partner, providing a joint infrastructure for the Welsh cancer research community to access cancer-related patient samples.

The NHS in Wales is central to the WCB's activity and engagement with all NHS Wales organisations will continue, including access to cancer clinics, patient recruitment and curation of samples in collaboration with surgical, pathology oncology/haematology and radiology teams. WCB will continue to optimise consent through integration of the consenting process within routine clinical care, placing volunteer lay consenters into NHS clinics where appropriate and by utilising telephone and electronic consenting.

The successful model of national portfolio adoption, allowing the NHS to access activity-based funding has been successful in incentivising the mutually beneficial relationship and increasing efficiency of sample and data delivery.





Aligned with the strategic initiative to integrate data, WCB is working with imaging specialists including the National Imaging Academy of Wales (NIAW) to link imaging data along with the **Wales Gene Park**, WCRC and **All Wales Genomics Laboratories (AWGL)** through the Wales pan-cancer panel initiative. WCB is also leading on new ‘big-data’ initiatives, involving industrial partners working in the expanding AI-in-Healthcare sector to deliver novel diagnostics solutions through retrospective clinical trials.

WCB works closely with **Clinical Trials Units around the UK** to consolidate the position nationally as a repository for national cancer clinical trial samples in a variety of tumour

types. In addition to ongoing involvement in STAMPEDE (prostate), Add Aspirin (prostate, breast, oesophagus, colorectal) and SMP lung matrix trials, WCB hosts, collates and processes samples for UK-based trials (eg. FOCUS4). WCB is working to maximise trial sample usage by adopting collections at the end of the trial to make the samples, digitised images and clinical data more widely available to researchers.

WCB has good links with international biobanks through membership and leadership of the International Society for Biological and Environmental Repositories (ISBER), the Europe, Middle East and Africa Society for Biopreservation and Biobanking (ESBB) and BBMRI-ERIC, which is a European research infrastructure for biobanking. This ongoing contribution to the strategic leadership of internationally biobanking maintains WCB’s high profile on the international biobanking stage.

Key Achievements

- Record number of samples issued to researchers
- Named UK Biobank of the Year 2020
- Adopted samples from 9 clinical trials and issued samples to researchers from one
- 5 Cancer Research Wales (CRW)-funded ASTRA2 projects managed and issued to researchers in Wales
- New ‘project-focused’ approach towards collaborations with partner infrastructures targeting big-data solutions
- New ways of consenting – including remote and i-consenting

Core Metrics

Reporting period: 2020/2021

Health and Care Research Wales infrastructure award to the group  Direct funding awarded **£446,338** Jobs created through direct funding **15** 

Grants won during reporting period

Grants won	Group collaborating
Number	4
Value	£9484
Funding to Wales	£9484
Funding to group	£9484



Number of publications



Number of public engagement events



Number of public involvement opportunities

Biobanking metrics

 241	 24	 21	 4217	 22	 3
Consents	Research requests	Research requests approved	Samples issued to research projects	Projects receiving samples	Publications using samples





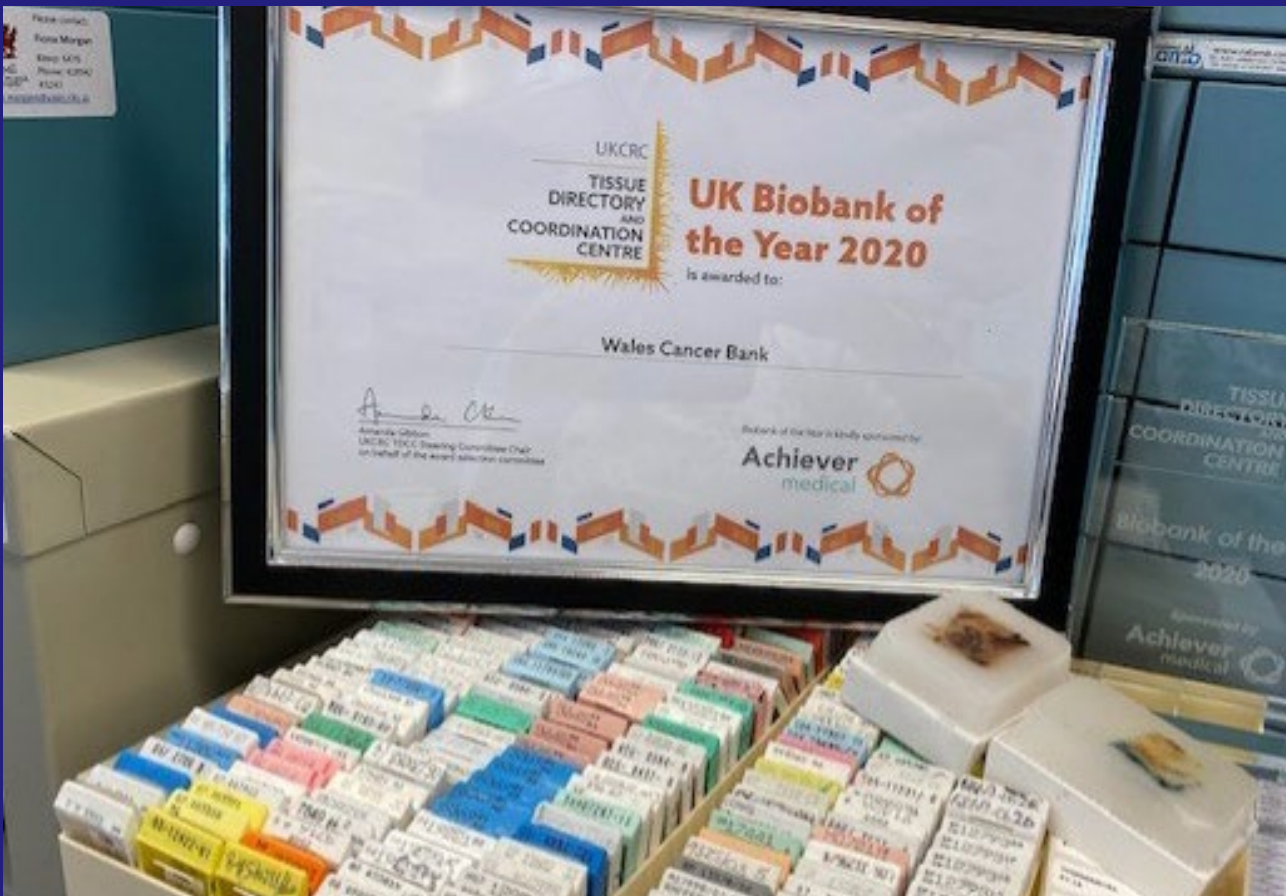
The Wales Cancer Bank was named as the 2020 UK Biobank of the Year by the UKCRC Tissue Directory and Coordination Centre at their annual Biobanking Showcase event.

The judging panel commented that they were ‘particularly impressed with the application from the Wales Cancer Bank as it demonstrated a strong performance across many of the criteria for the award’. In particular, the panel singled out WCB’s ‘agility in responding to the COVID-19 pandemic, despite being primarily a cancer biobank’. They felt that this showed ‘a proactive quality which underpins the service’. They were also impressed with WCB’s patient and public involvement activities, and the panel commended the biobank for the overall quality of the resource.



In April 2020 WCB successfully submitted a substantial amendment to Wales REC3 to expand the approved use of biosamples to include use in Public Health Emergencies that impact on cancer patients.

Samples (serum) were subsequently used to help in the development of a diagnostic test for COVID19. Samples from 60 patients were identified from approximately 8,000 suitable samples. Only donations with more than one serum sample in the archive were chosen to ensure samples from those patients would still be available for cancer specific research in the future. The samples were collected pre virus and were used as negative controls in the assay development.



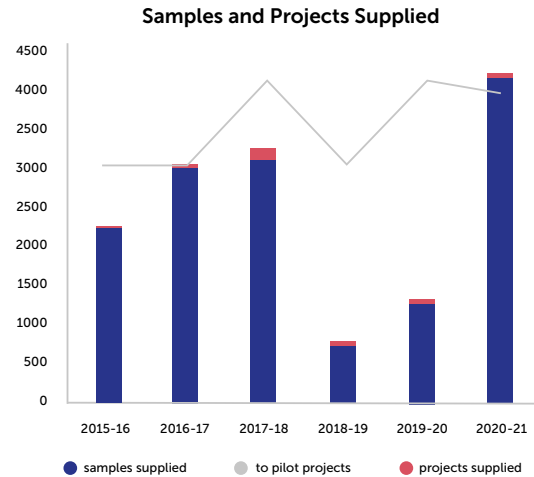
Programme update

During this first year of the infrastructure group funding, the Wales Cancer Bank has made good progress in all five workpackages. WCB has developed and implemented new ways of working to improve processes to lead to a more sustainable operating platform. Although some of these developments were in response to the limitations experienced during the pandemic, elements such as the enhanced consent provisions will continue as part of routine practice. For example, as part of workpackages 1-3, telephone consenting provisions have been implemented and the processes for consenting via a tablet/computer have been improved.

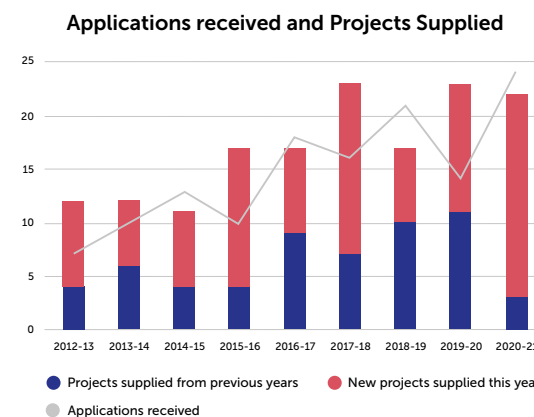
Workpackage 1 & 2

WCB provided ethics and infrastructure support to a rapid-response COVID vaccine study initiated by colleagues in WCRC (Awen Gallimore and Mererid Evans) which will investigate the vaccine responses in cancer patients undergoing treatment. Current small data sets suggest that patients undergoing cancer treatment are likely to have reduced benefits from COVID19 vaccination as they have a lower seroconversion rate due to their immunosuppression. Between April 2020 and March 2021 an increased number of enquiries and applications to access samples were received.

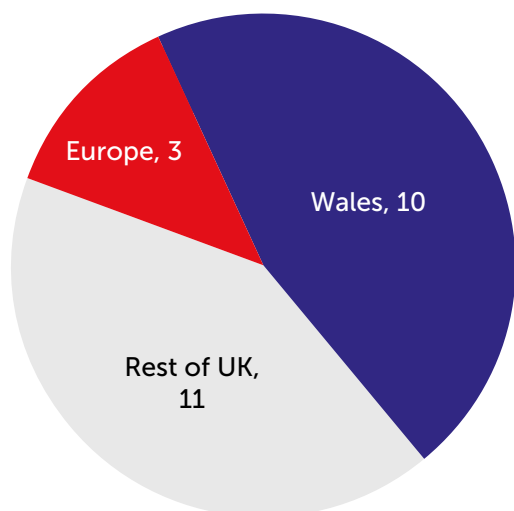
Applications for samples were processed from twenty-four researchers, a 71% increase on the previous year. Thirteen were from academic groups and nine from commercial companies. This shows a 200% increase in applications from commercial companies on the previous year.



- Funding from Velindre Charitable funds to support lung consenting
- Funding from CRUK as Clinical hub for Stratified Medicine Programme
- Funding from Cancer Research Wales to support ASTRA2 projects using samples



- 24 applications processed from UK and Europe
- Samples sent to 22 projects in 4 countries



Origin of Applications Processed

Just over four thousand two hundred samples were issued to 22 projects during the year, nineteen new projects (not previously supplied) and three projects ongoing from previous years. This is a 222% increase of sample numbers issued on the previous year and the largest number of annual samples ever issued by WCB. Eighteen of the twenty-two projects receiving samples were based in academia, with the other four projects based in commercial companies. 67% of samples were issued to researchers in Wales and researchers in Wales accounted for 17 of the 22 projects supplied with samples. Only 10% (425) of the total samples issued were from consents within the period and these were issued to 7 projects.

No. samples supplied	No. projects
0-10	7
11-50	7
51-100	4
101-500	2
501-1000	0
>1000	2

Sample supply ranged from 4 samples (ongoing from previous years) to 1920 samples, with a median of 37 (Q1=10, Q3=81.5). 63.6% projects received fewer than 50 samples. These figures are particularly notable as it highlights the importance

of a mature archive providing a ‘buffer’ for the sample pipeline during periods of time when access to samples directly from clinic are compromised (in this situation due to a global pandemic). WCB therefore is a prime example of how the research community can be both adaptive and resilient to healthcare challenges.

Workpackage 3

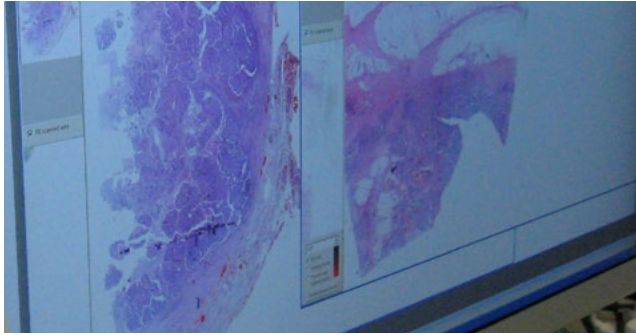
In January 2021 WCB hosted a webinar with the Cardiff Centre for Trials Research to promote awareness of the adopted trials samples now hosted by WCB and to increase the number of clinical trials samples provided to researchers. This led to two specific enquiries regarding access to clinical trials samples from researchers in the UK, with current plans to supply samples from the SUCCINCT trial in bladder cancer to researchers. For the 12-month period to October 2020, the Cardiff Clinical hub (WCB) was one of the top 5 centres submitting samples for genetic testing for the Cancer Research UK Stratified Medicine Programme (SMP).

The WCB team is proactively engaged with CRUK and the All Wales Genetics Service in reviewing and developing strategies to integrate molecular sample analysis with appropriate consent into routine practice in Wales, to facilitate opportunities for patients to enter clinical trials in an inclusive and Wales wide manner.

"Wales Cancer Bank achieved impressive targets alongside some big names in cancer research such as Oxford, Newcastle and Glasgow. Despite being hampered by the pandemic, WCB has achieved over 60% of the annual performance target for patient samples for the Stratified Medicine Programme" - CRUK

 **Workpackage 4**

A new collaboration was initiated and led by WCB to promote data-linkage between multi-parametric data platforms. This joint venture aims to leverage funds to support a novel digital pathology platform for cancer patients in Wales, termed mPAID (multi-Parametric Artificial Intelligence Diagnostics).



 **Workpackage 5**

Members of the Senior team have active involvement in national and international biobanking initiatives and organisations.

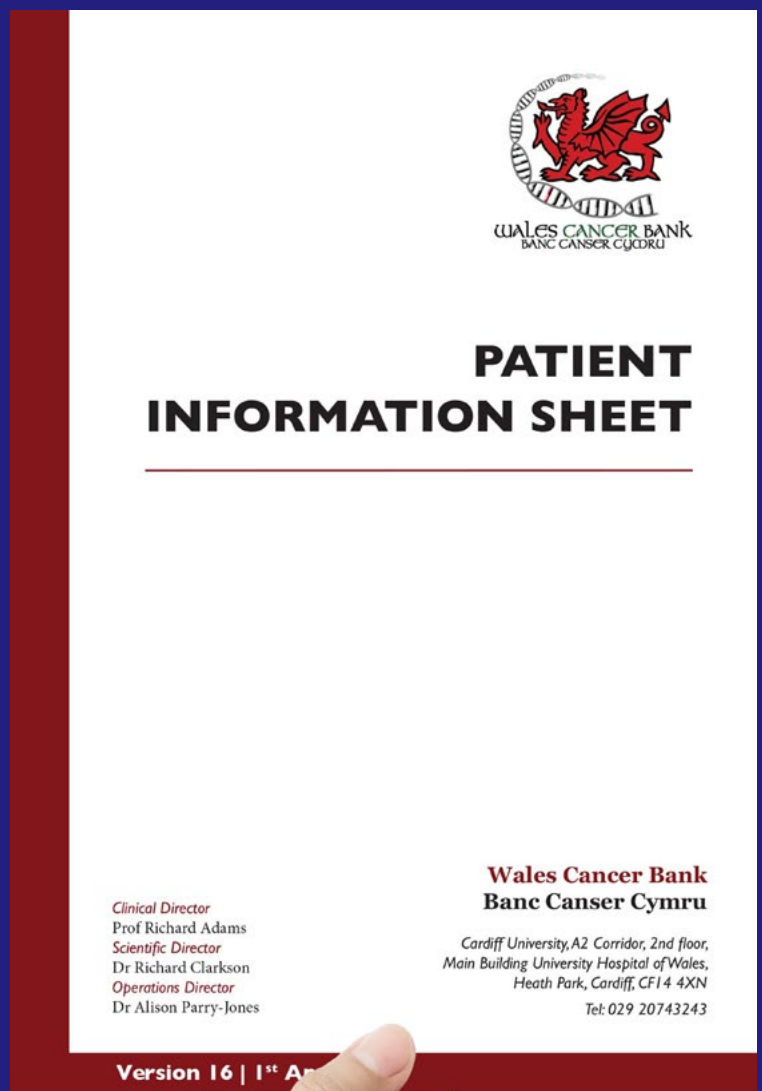
- Professor Clarkson has been accepted as the new Chair of Breast Cancer Now’s Tissue Bank Advisory Committee.
- Dr Parry-Jones is the Director-at-Large for Europe, the Middle East and Africa (EMEA) for ISBER (International Society for Biological and Environmental Repositories) and has chaired a joint EMEA/Americas Townhall event to discuss the transatlantic biobanking response to COVID in that capacity. She was a panel member on the UKCRC’s Tissue Directory and Coordination Centre Showcase session on Sustainability and Transparency in Biobanking and gave a talk in a webinar jointly organised the UKCRC TDCC and Scientist.com on Overcoming Challenges in Biobanking in the UK. All of these events were open to the public and were attended by researchers, biobankers and patient representatives raising awareness of the Wales Cancer Bank and placing WCB at the heart of UK and international biobanking.



Public Involvement and Engagement

The Wales Cancer Bank has benefited hugely from patient involvement since its inception in 2004. The lay group was convened in 2004 to assist with the development of the patient information sheet and consent form and to give advice and input on policies and procedures. The lay group has consistently advised on new initiatives, changes to procedure, reviewed lay summaries for plain English, and has been involved with operational and strategic discussions as part of the WCB Executive group and Advisory Board.

External public engagement and collaborative work were impacted by the pandemic. However, the members of the WCB lay group continued to have active, virtual involvement and a restructuring took place to further embed the patient representatives into the WCB organisation and ensure the patient voice was heard at all groups and committees. One member of the lay group now sits on each of the WCB committees and feeds back to the full lay group at biannual meetings. This has proved to be an extremely positive move with all the lay members commenting on the benefit of a greater understanding and immersion in the WCB Wales Cancer Bank Annual Report 2020–21 14 of 15 activities. The immediate input from lay members has also streamlined the consultation process reducing time to gain feedback on issues and proposals, such as the implementation of telephone consenting.



Conclusion

April 2020–March 2021 was a challenging year. The pandemic has helped to raise awareness of the need for sample storage and testing. Biobanks around the world have responded by repurposing, becoming testing facilities and/or storage facilities for vaccines. The ability to collect, store and test human samples in a rigorous, standardised format has been paramount and the expertise and knowledge within biobanks like the Wales Cancer Bank have played a key role. Despite the restrictions WCB has been able to continue to support researchers in Wales and beyond including four COVID related projects.

Finally, and consistent with our overarching strategy to improve the delivery of cancer research in Wales, we have adopted a collaborative ‘project-focused’ approach with our key research and NHS partners to drive forward new innovations in cancer treatment and diagnosis.

Our aim for the next 4 years is to engender this collaborative ethos across the cancer research community with patient involvement at its heart.

In 2021–2022 we aim to:

- broaden our distribution of samples and data,
- form new research collaborations focussing on big data and AI,
- influence and enhance the UK biobanking network.

We will also be having a rebrand – look out for our new logo, website and video animations!

“I consented to WCB to forward research in the area of lung cancer. Also having been affected by different cancers I hope that future generations of my family will benefit from research carried out using my samples” - Quote from donor



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Contact & Social Media



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