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WELSH BLOOD SERVICE RESEARCH DEVELOPMENT AND INNOVATION STRATEGY

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Research, Development and Innovation Strategy for the Welsh Blood Service

How we will perform research to improve the lives of people in Wales.

Foreword

Since 2017, the Welsh Blood Service has embarked on an extraordinary research development, and innovation journey. Over the past few years, we have completed more than 100 research projects, each contributing to our understanding and enhancement of blood services and patient care.

I am therefore extremely pleased to present our new strategy, building on the solid foundations we have laid down. Our achievements are a testament to the dedication and expertise of our staff and the invaluable partnerships we have cultivated with academia, other NHS organisations, funders, industry partners, and educational leaders. We have won grant monies and formed partnerships across Wales, the UK, and internationally.

These collaborations have broadened our research capabilities and ensured that our work remains at the cutting edge of scientific and medical advancements.

As we progress, we will focus on fostering innovation, expanding our collaborative networks, and enhancing our research infrastructure. By doing so, we aim to continue delivering world-class work that improves patient and donor outcomes and supports NHS Wales's broader healthcare objectives.

I would like to extend my gratitude to all our colleagues, partners, and stakeholders for their unwavering support and contributions. Through our collective efforts, we have achieved many successes and will continue to drive forward the RD&I agenda to benefit the people of Wales.

Thank you for your continued dedication and commitment.
Alan Prosser, Director Welsh Blood Service, July 2024

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Executive Summary

This strategy will guide the Welsh Blood Service's research activities and partnerships with academia, other NHS organisations, funders, industry partners, and educational leaders in the coming years, with the aim of improving the lives of people in Wales.

The strategy builds on the Welsh Blood Service's first formal research strategy, published in 2017, and aligns with its Five-Year Strategy and Velindre University NHS Trust Destination 2033.

It outlines the key goals in its 'Missions', with the measures of success, and details the responsibilities for achieving the strategy's objectives.

What this strategy is about

Who is this strategy for?

This strategy is for all colleagues, collaborators, donors, patients, and the people of Wales. It shows how the Welsh Blood Service will lead and provide resources for research, development, and innovation activities within healthcare, the provision of blood and transplant services and other relevant areas, which will bring about our [Vision](#).

It is designed to focus on how the Welsh Blood Service and our NHS Wales partners will work with academia and NHS organisations, linking to funders, industry partners, and educational leaders in the supporting infrastructure to perform research, development, and innovation.

Our approach

The Welsh Blood Service published its first formal research strategy in 2017. Over the succeeding years, we have completed over 100 projects in this time while being shaped by factors such as the 2020 pandemic, organisational changes, and evolving directions and influences.

We learned where our strengths are, where targeted areas have progressed well, and where we have gaps in activity, capacity, and drive.

In areas where we have achieved great success, we will keep solidifying our approach while adjusting our strategy in areas where we have not met our expectations. The success of this strategy will be measured in terms of implementation and performance goals. Its implementation will ensure the research, development and innovation objectives of the Welsh Blood Service 5 Year Strategy and Velindre University NHS Trust Destination 2033 are further defined and met. Additionally, performance indicators will be chosen and monitored to ensure the goals of this strategy are performed to meet expectations.

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Additionally, when developing this strategy, we engaged broadly with various stakeholder groups and forums, including our colleagues, the organisation's leaders and external partners. The wide-ranging dialogue has shown that particular research-centric ambitions are well supported, but stakeholders highlighted this opportunity for refocus and improvement. We appreciate our stakeholders' diverse comments and perspectives during the engagement events.

The details of the organisation's learning during the approach have been captured in the appendices of this strategy.

Based on the above, we have identified seven missions for our strategy, which are detailed here.

Leadership

We will adopt a delivery-focused approach to turn this plan into a reality. This strategy will drive the production of an annual delivery plan, outlining the specific actions required to achieve the vision. Many outcomes will only be achieved over the long term. Our annual delivery plan will, therefore, be a pragmatic way to deliver in the short term while progressing alongside long-term ambitions with some change and adjustment of our culture.

The Welsh Blood Service will ensure we have expertise, capacity, and project performance management. To achieve this strategy, we will also maintain relationships with blood service partners, groups and networks.

Simultaneously, **Velindre University NHS Trust** will also deliver this strategy through specific management actions described in the 'missions'. Corporate support is crucial for maintaining relationships between NHS Wales and its government funders, ensuring that Welsh Blood Services' interests are included in all necessary corporate interactions, and ensuring adequate funding, profile, and inclusion in relevant governmental procedures and programs.

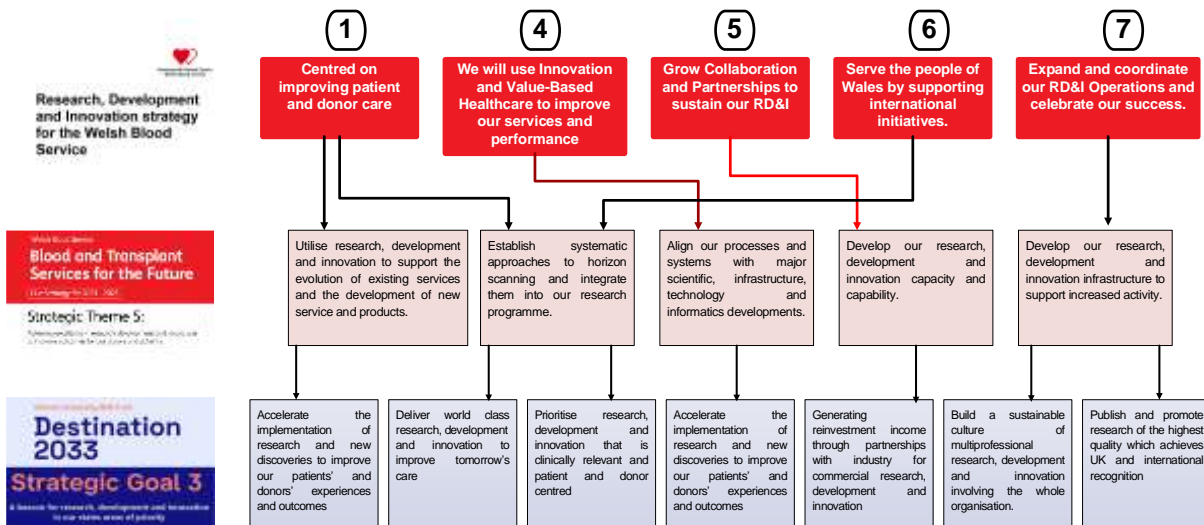
As an NHS Wales body, we have a role in supporting the overall care delivery of NHS Wales's Health Boards. We must draw on the services of ancillary organisations such as **Health Education and Improvement Wales** and **Health and Care Research Wales** to adequately fulfil this strategy's ambition, bring about measurable and sustainable change in government policy, and influence change.

Mapping this to Corporate Strategies

We set out how we have taken the ambition outlined in the Welsh Blood Service's 5 Year Strategy and Velindre University NHS Trust Destination 2033 into this defined strategy.

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The link to Strategic Theme 5 of the Welsh Blood Service’s 5 Year Strategy and Strategic Theme 3 of Velindre University NHS Trust Destination 2033 is shown here.



Relationship with Policy and Corporate Accountabilities

Well-being of Future Generations (Wales) Act 2015

In line with the Act, our research should be patient-centric, aiming to improve the physical health and wellbeing of people in Wales. This strategy encompasses this requirement.

Health and Social Care (Quality and Engagement) (Wales) Act

The Health and Social Care (Quality and Engagement) (Wales) Act, 2015, places a statutory duty on Health providers in Wales to demonstrate how they put quality and safety at the centre of their decision-making. This strategy, and in particular Missions One, Four and Six (below), will enhance the evidence base to support patient and donor-centric decision-making at all levels within the Welsh Blood Service.

Health and Care Quality Standards 2023 (WHC/2023/013)

The strategy has been aligned with these standards to ensure that it incorporates the delivery of safe, timely, effective, efficient, equitable, and person-centred care through leadership, workforce, culture and valuing people, information, learning, improvement, and research. A whole-system approach is included in this strategy, and the resulting programs or work have been assessed internally against these standards.

UK Policy Framework for Health and Social Care Research

The UK Policy Framework for Health and Social Care Research sets out principles of good practice of the management and conduct of health and social care research in the UK. These principles protect and promote the interests of patients, service users and the public in health and social care research. Our research will be compliant with these principles.

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• **Our Vision**

The Welsh Blood Service will perform research and innovate to improve the outcomes for the people of Wales.

The missions that support our vision are:

1	Centred on improving patient and donor care	We will create a culture where the voices of patients and donors are at the centre of everything we do.
2	Advancing Blood Components	Developing blood components that are safe, sufficient and effective in meeting the needs of patients
3	Advancing Transplant Research in Wales	The Welsh Blood Service Transplantation Services will continue to support research and innovation for organ and stem cell transplant provision in Wales.
4	We will use Innovation and Value-Based Healthcare to improve our services and performance.	To focus the Innovation and Value-Based Healthcare infrastructure to enable improvements that will translate to better services for patients and donors.
5	Using Collaboration to Sustain Our RD&I.	We will prioritise collaborative opportunities in areas of organisational importance nationally and internationally.
6	Serve the people of Wales by supporting international initiatives	The Welsh Blood Service will maintain a close relationship with public health bodies to respond to global health needs and increase sustainability goals. We will involve NHS Wales in international transfusion and transplantation opportunities to benefit patients and donors.
7	Enhance the impact of RD&I and celebrate success	Performance in research, development, and innovation will enhance patient and donor care and improve the Welsh Blood Service's operational aspects. We will ensure that resources and skills to support this effort are available and celebrate success along the way.

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Mission 1. Centred on improving patient and donor care.

We need to provide robust research leadership for NHS Wales and to achieve this, we must bring together clinical opinion leaders and patients.

We must create a culture for our colleagues to ensure the patient's voice is clearly heard and served, which underpins everything we do in research.

We will continue using our patient and public engagement panel as a validator for activity annually, checking their assessment of how we meet their expectations.

We will continue to support our researchers' professional development in patient and public engagement.

We will take steps to improve the research culture across the organisation, complementing and enhancing the existing organisational culture in the Welsh Blood Service.

We need to be a positive lead for the NHS on research and innovation issues relating to transfusion and transplantation, increasing our leadership role via the support of external parties such as the Blood Health National Advisory Group and every part of the NHS Wales infrastructure. On the national stage, we must ensure that we deliver for NHS Wales internationally, such as the Biomedical Excellence for Safer Transfusion Collaborative.

We will:

- We will continue to support an active contribution to public and patient involvement to ensure that patients and the public's input is considered at all stages of our research, planning and delivery.
- Explore how we can champion the patients of Wales, engage them, and know how we can represent them on the world stage through publication and publicity.
- We will introduce elements of external scrutiny when formulating our plans to ensure that the avenues we explore respect a patient-centric goal.
- Identify ways to reinforce research, development, and innovation as key parts of our leadership culture.

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Mission 2. Advancing Blood Components.

Developing blood components that are safe, sufficient, and effective, ensures the needs of patients are met.

Blood components are typically seen as standardised and stable; however, we have the expertise and desire to design and produce novel components better suited to specific clinical scenarios where possible. We also need to be able to respond with practical solutions if changes are required. These novel components will improve the recipients' lives.

In 2018, we launched the first standalone facility to address this ambition. The Component Development and Research Laboratory ("CDRL") which fundamental to our plans to deliver this mission by providing dedicated capacity with embedded innovative methods of investigation. CDRL has taken a new approach to resourcing research in the Welsh Blood Service. Dedicated posts have been implemented to deliver this ambition, which has been allowed by funding awards and grant success. CDRL has also developed rotational posts and visiting placements from academia and the military, which align with our other mission statements. CDRL has performed over 20 projects during this time and seen grant generation increase to £75,000+ in 2023-24. The future ambition lies in translating laboratory advances into the clinical area. In 2023, CDRL won Health and Care Research Wales funding to move towards this goal for cold-stored platelets. We are already taking a leading role in the activities for Wales, forging links with the armed forces, the NHS, and academia in the field of emergency medicine and intensive care.

We will

- Expand our experimental expertise into advanced technologies such as microfluidics and facilitate collaborator access to support this.
- Create environments to attract talent and build capacity through creating rotational posts and enabling visiting external researchers.
- Educate the public & funders to understand how our ambitions will benefit them.
- Ensure we influence industry and regulatory changes that affect operations challenges and prepare for change by testing solutions through our RD&I.
- Be known as a leader in the field of cold-stored platelets through continued income generation that facilitates the performance and publication of high-impact research.
- Researchers and innovators will choose to work with the Welsh Blood Service because of our reputation.

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Mission 3. Advancing Transplant Research in Wales.

The Welsh Blood Service Transplantation Services will continue to support research and innovation for organ and stem cell transplant provision in Wales.

Our services directly impact the lives of patients requiring or living with an organ or stem cell transplant. Their wellbeing is at the heart of everything we do.

Since 2017, healthcare scientists have completed several projects to find more innovative solutions to clinical challenges. Recently, they have focused on biomarker detection to predict post-transplant function and detect rejection, with the aim of improving clinical care pathways. The capacity to perform research, development, and innovation has been achieved through scientists augmenting their qualification-related training through placements and project work.

While the achievements of the individuals who have done this have been significant, they have been in relatively small numbers of the individuals who have accomplished research by this means. Therefore, we aim to expand the potential learning and development opportunities to other scientists and look at other modes of capacity provision, allowing a flow of staff to perform research through dedicated protected time, rotational placements or even secondment elsewhere.

We will

- Work towards ensuring a sustainable research development and innovation output in transplantation that enhances patient care. We will investigate ways to increase this capacity to do this.
- Build on existing relationships at Cardiff and Vale University Health Board and the Wales Kidney Research Unit, and actively seek new collaboration opportunities.
- Continue to support scientific and clinically-led projects.

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Mission 4. We will use Innovation and Value-Based Healthcare to improve our services and performance.

We will focus on promoting innovation in areas where we provide services and can potentially make changes to improve their quality, safety and efficiency.

VUNHST has two dedicated service teams in place to manage these endeavours linked to national infrastructure. The Velindre Innovation and Velindre Value-Based Healthcare teams. We will directly integrate with these teams to build a Welsh Blood Service innovation activity portfolio that spans core activity and supporting functions.

To enable this, we will ensure the spread of this aspiration and agenda into the Welsh Blood Service's supporting functions and departments. This will require focusing on areas that make the RD&I agenda relevant, such as digital, stores, and facilities, and to bring about innovation in these areas.

At the same time, we will horizon scan for these specialised areas. We will involve Digital more closely in Welsh Blood Service RD&I and explore using data analytics, artificial intelligence, and digital health technologies to improve operational efficiency, traceability, and decision-making within the blood service.

We will

- Commence a dedicated workstream to manage a portfolio of innovation-ready areas and promote an exploratory mindset among all staff.
- Utilise capabilities in innovation in support services found using innovation-based funding schemes. We expect to support the production of plans for RD&I in these departments by providing support functions. We would also oversee the subsequent RD&I activity and outcome dissemination.
- Provide an annual plan to focus on innovation delivery.
- Use Velindre University NHS Trust teams to perform innovation activities in the Welsh Blood Service's operational and support services, promoting a culture shift to integrate innovation into the workflow as an integral part of these areas.

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Mission 5. Using Collaboration to Sustain Our RD&I.

Collaboration underscores the Welsh Blood Service's entire RD&I ambition. This ensures the robustness of approaches to RD&I and reduces risks in the event of personnel or capacity changes. Since 2017, this approach has sustained the majority of research performed here, with over 95% of projects having a collaborative element. Strategic Point 5 of the WBS 5-Year Strategy also states that we must enhance collaboration with academic institutions, healthcare organisations and research centres to leverage collective expertise and resources for impactful research.

Here, we describe our approach to collaboration, and importantly, to finding the funding to sustain our approach.

By collaborating with academics, we have discovered that our funding sources have become more diverse, accessible, and receptive to our initiatives. Therefore, we consider academic partnerships crucial for developing sustainability in our activities.

We should prioritise forming partnerships with academic institutions. While focusing on the benefits for Wales, we must also recognise that we should not limit ourselves to our geographical borders. We will pursue mutually beneficial partnerships with academic bodies across the UK and, where possible, in other parts of the world.

We are aware that certain military partnerships are important to this aim. Often active in extreme conditions, the military is literally at the cutting edge of much research in this area of transfusion. This area of advancement is key in novel blood-component use applications.

As we mature, we recognise that some areas of collaboration are appropriate for development into fully commercial relationships. We have recently introduced contractual frameworks to support the researchers in setting up such commercial partnerships. We will continue to support this approach and are keen for it to sustain our RD&I activity.

We will

- Consider secondments that allow external researchers to be placed in the Welsh Blood Service to provide the capacity to address gaps in the Welsh Blood Service's capabilities, allowing collaboration and swifter translation of research findings into practice.
- Work with leaders in our organisation to ensure processes are in place for timely placements. Where possible, contracting and negotiation stances should be defined in advance, with clear lines of responsibility for making these arrangements.

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- Continue to provide opportunities for collaboration, playing an active role in international networks. In areas where it is feasible, we will pursue grant funding and collaborations that facilitate grant reimbursement and maximise our income streams.
 - Make it a priority to look for commercial collaborative opportunities in suitable areas, allowing full reimbursement and capacity building. We will seek to increase the amount of commercial collection we perform, reduce waste, and derive income, maintaining cost neutrality to the service.
 - Work with Welsh Blood Service researchers and partner organisations, such as, but not limited to, partner universities, to achieve either honorary or joint academic positions.
 - Integrate with government programmes to successfully deliver the strategy through funding workforce capacity. We will continue to work with the Health Education Improvement Wales Healthcare Scientist Strategy Programme.

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Mission 6. Serve the people of Wales by supporting international initiatives.

The Welsh Blood Service will maintain a close relationship with public health bodies to ensure the nation's health and ensure readiness and an appropriate response to global health needs. We will maintain the close relationship with Public Health Wales that emerged during the COVID-19 pandemic.

Additional environmental factors, notably climate change, are emerging as of particular and ever-more-urgent importance. For future generations, sustainability and carbon footprints are emerging as neglected areas of scientific research. We will commence a portfolio of projects to explore a target increase in our sustainability goal, leading to a greener and more sustainable Wales.

We will

- Support health impacts such as individual risk assessment. As subject matter experts, we will respond to global needs within our area of expertise.
- Continue to support sample provision to Public Health Wales for virus surveillance purposes and to support public health initiatives. Continue our partnership with the Communicable Disease Surveillance Centre of Public Health Wales on matters ensuring that the sustained ability to support each other in a mutually beneficial manner is always open and that the avenues to perform this are always open.
- Ensure that Senior and Executive leaders may benefit from greater involvement in research programmes and practices to better understand the nuance in the operating background, skills and knowledge.
- Facilitate the involvement of NHS Wales organisations in international blood services opportunities and lead NHS Wales' involvement in Biomedical Excellence for Safer Transfusion Collaborative and European Blood Alliance. Use opportunities and look to foster a network that allows the Welsh Blood Service to use these and other international networks for further research.

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Mission 7. Enhance the impact of RD&I and celebrate success.

This strategy is part of the WBS 5-Year Strategy. With that in mind, we will adjust the oversight of RD&I to ensure the reporting of the progress of delivering this strategy is adapted to the Welsh Blood Service’s overall strategic oversight.

Around one-third of all research, development, and innovation activities require digital and data components and skills from our Digital department or other areas. We must ensure timely access to these resources to support our strategy and manage the fluctuating demands that come with it.

We will explore opportunities to ensure that individual staff members have the support regarding resources, protected research time, funding, and workload capacity, with input and strategic support from senior leaders in the organisation. This leadership input and support will enhance the organisation's reputation. In addition, this approach is highly likely to be instrumental in minimising risks of staff attrition and acknowledging the role of RD&I as a proven source of new funding and discrete income streams while drawing new staff and partnerships to the organisation.

As we rely on external programs and educational institutions to provide novice researchers with the necessary training to ensure equality and inclusion for researchers, so we will introduce a metric to monitor this access.

We will provide input into developing the Velindre Clinical and Scientific Strategy to include this issue.

We will

- Produce a detailed communication plan to enhance the visibility, accessibility, and dissemination of research outcomes. This will ensure that the Welsh Blood Service's staff are aware of the research portfolio through outreach and celebratory communications.
- Commit to being an organisation that leads change through evidence, champions research, development, and innovation activity, and disseminates our new knowledge well.
- Aim to develop our performance framework further to help us track project progress and obstacles that may arise. Our strategy delivery will be analysed regularly, and any skill gaps or obstacles will be addressed as needed. The RD&I committee will be responsible for monitoring this performance, overseen by the Senior Leadership Team.

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- Implement measures to monitor diversity and inclusion, ensuring that RD&I opportunities are representative and accessible to all staff members and taking expert advice from the organisational team.
- Ensure that our organisation's leaders are briefed appropriately in good time to allow them to champion the RD&I programme in their day-to-day networking. Leaders in our organisation will also be instrumental in championing the Welsh Blood Service to our funders and government sponsors.
- Ensure that the resources and skills to support RD&I activity are in place through our Senior Leadership Team. We will ensure that opportunities are delivered with equity, whether divisional or corporate. Senior and executive leadership will be asked for their expectations annually and receive feedback on progress so that we may measure the service effectively.
- Ensure our staff and colleagues in Wales are aware of the impact of RD&I on improving patient outcomes and enabling donors to support patients.
- Keep donors informed of progress against milestones. They may take pride in the work their donations do, not only directly through the direct impact of their donations, but also through their contribution to research support. We will achieve this through public engagement and communication.
- We will support staff in presenting their research by attending conferences and producing publications. We will also ensure that their achievement is formally recognised through messages of thanks and acknowledgement from senior leaders and dissemination internally and externally.
- We will ensure that colleagues with operational roles are given the time to perform RD&I activities that benefit patients, donors, and staff members' careers, making the Welsh Blood Service a great workplace.

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