



Hwb Gwyddorau Bywyd Cymru
Life Sciences Hub Wales

THE **WELSH NHS CONFEDERATION**
CONFFEDERASIWN **GIG CYMRU**



***How industry has supported NHS
Wales organisations to improve
outcomes throughout the COVID-19
response***

Introduction

The response of Welsh industry to the Covid-19 pandemic has been nothing short of remarkable: helping to keep people safe; assisting the NHS to deliver life-saving care and treatment; and supporting the Welsh, UK and global economies by creating hundreds of skilled jobs.

Life Sciences Hub Wales has worked closely with Welsh health and social care services to understand the challenges they face and collaborate with companies and innovators to identify solutions and deliver them at pace and scale. During this time, such organisations have created new products and services to support the response to Covid-19.

Welsh companies have demonstrated their leadership in the global life sciences industry, while businesses from other sectors have adapted to supply critical products too. Many of these were supported by the Welsh

Government's SMART Cymru fund, which helps Welsh businesses to develop, implement and commercialise new products, processes and services. This has enabled Welsh businesses to support NHS Wales and social care to tackle the exceptional challenges that the system has faced.

Earlier this year, as part of a collaboration between Industry Wales, Life Sciences Hub Wales and Welsh Government, a national call was issued to industry, with Life Sciences Hub Wales appointed as the sole contact to receive offers of support from industry.

Since April, they have received over 2,000 enquiries from industry and have worked with an array of businesses. These include multi-nationals at the forefront of scientific technology like Ortho Clinical Diagnostics and PerkinElmer, as well as leading Welsh life sciences businesses including DTR Medical, Rocialle Healthcare, Huntleigh Healthcare and Williams Medical.

The work delivered by these companies and others is placing Wales at the forefront of the life sciences sector, fostering innovation and supporting product development to respond to a truly challenging time in our history.

This briefing sets out examples of how industry has supported the NHS in Wales – and further afield – to respond to the pandemic. It underlines the strategic importance of partnership

between our health and social care sectors and industry in order to make Wales the place of choice for health, care and wellbeing innovation.

Darren Hughes, Director, Welsh NHS Confederation
Cari-Anne Quinn, CEO, Life Sciences Hub Wales





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Life Sciences Hub Wales

Covid-19 impact report

Life Sciences Hub Wales is working with industry to supply products and develop solutions to address the immediate needs of health and social care in Wales.



£6,536,534

business growth

562

referrals to NHS Wales Shared Services Partnership, National Procurement Services and Industry Wales



621 jobs assisted



"I'd like to thank Life Sciences Hub Wales for the crucial role they are playing in supporting firms across Wales."

Lee Waters, Deputy Minister for Economy and Transport



19 adoption ready products
46 companies engaged



£34,155,100 GVA

(gross value added)

Online Industry Call

Attended by 150+ businesses, including 200 participants



"The complex and difficult work that Life Sciences Hub Wales is doing to ensure that staff can continue to have a safe and sustainable supply of PPE is very much appreciated by our members and those on the frontline."

Darren Hughes, Director, NHS Wales Confederation

"The Life Sciences Hub in Wales have been absolutely brilliant. They've connected us to the Welsh NHS."

Andrew Howell, Managing Director, BCB International

147%

increase in website visits during the same period in 2019



For further details visit: www.lshubwales.com/covid-19

(Data from 1 April to 28 August 2020)

Supporting the NHS Wales response to COVID-19 through collaborative working with industry

⇒ **Designing, producing and distributing personal protective equipment (PPE)**

Developer of military protective equipment returns to the frontline to produce alcohol hand sanitiser

A Welsh manufacturer that can trace its lifesaving work to the trenches of the Crimean war is working to ensure that NHS Wales has the supplies it needs in the battle against COVID-19.

For over 160 years, **BCB International** has built up knowledge and expertise in developing lifesaving and protective equipment for British defence personnel, mariners and adventure seekers operating beyond the comfort zone.

The company has switched productions at its Llanelli-based site, which would normally produce its patented solidified bio-ethanol fuel products, to the creation of high-strength alcohol hand sanitiser.

In a nod to BCB's founding father, Dr Brown's Hand Sanitiser is named after Dr John Collis Browne, who originally created cough medicine that brought relief to British soldiers suffering in the trenches of the Crimean war. BCB International has provided over 250,000 litres of hand sanitiser since the beginning of the pandemic.



In addition to the hand sanitizer products, BCB International has also supplied personal protective equipment (PPE) to emergency responders and community groups across NHS Wales including gowns, gloves, masks and face shields.

Finally, the manufacturer has created portable carry-packs containing protective equipment that can be carried by first responders, police and those working to serve communities across Wales.

Using recyclable material to make PPE

A Caerphilly company has switched up production at its factory to create millions of sustainable face shields that health and care staff are using worldwide to support employees returning to the workplace.

Transcend Packaging, a sustainable packaging specialist and the first company in Europe to produce paper straws for major quick service restaurants, has converted operations at its Ystrad Mynach manufacturing base to create protective face shields. Made from reinforced paper boards and recyclable materials, the inexpensive visors are designed for single use and to be recycled.



Transcend Packaging has ensured their products meet all standards required for use by NHS Wales, frontline and key workers thanks to support from Life Sciences Hub Wales.

So far, over 15 million face shields have entered directly into either NHS Wales or the UK Department of Health and Social Care agencies to support staff on the frontline. The firm is also supplying shields to councils, care homes, retailers and factories across the country. As well as supplying the products to various settings across the UK, Transcend Packaging has seen its shields distributed across Europe and is currently in talks to supply Japan and the US.

The company's change in production was showcased as part of a national online event, hosted by Life Sciences Hub Wales in conjunction with NHS Wales Shared Services Partnership (NWSSP). During the event, Transcend Packaging described how they worked with Life Sciences Hub Wales to achieve the appropriate certification to correctly manufacture PPE and subsequently supply to NHS Wales.

Transcend is currently manufacturing more than one million face shields a week with the capacity to double this to two million as circumstances warrant. The company has also nearly doubled the size of its permanent workforce to rise to the challenge of producing and distributing vital supplies of PPE.

UK's first medical-grade face mask manufacturing facility set to open in Cardiff

A £1.5 million investment by **Hardshell** is set to see the UK's first medical-grade mask-making facility established in Wales, creating over 40 jobs and boosting business opportunities in the region.

Life Sciences Hub Wales has supported Hardshell, a global leader in the production of protective defensive equipment such as body armour and demining suits, to secure product certifications that will allow it to become the first in the UK to produce medical-grade face masks for NHS use.

The site will be the only facility in Britain to manufacture FFP3 type respirators, which are currently imported rather than produced on home soil. With a minimum 99% filtration efficiency, FFP3 face masks offer the highest level of protection against toxic particles including asbestos, bacteria and viruses, making them the most effective in protecting against COVID-19 and the most critically needed by staff on the frontline.

Hardshell decided to diversify its manufacturing capabilities and create PPE to help with the response to COVID-19 following an industry call to action issued by Life Sciences Hub Wales.

Life Sciences Hub Wales was appointed by Welsh Government to manage all initial enquiries and offers of support from businesses on behalf of NHS Wales. The organisation has worked closely with Hardshell to offer guidance on the certification process and to help the company ensure its masks meet regulations.

Over recent months, Hardshell, with support from Welsh Government, has worked tirelessly to set up the 1,500sqm facility in Cardiff, which will

be dedicated to manufacturing a full range of PPE, covering everything from single-use surgical masks to reusable face masks. The company will be capable of producing 300,000 respirators and 1.5 million masks a week once fully operational.

The organisation has purchased its own line of machinery to be able to complete the full manufacturing process on-site. Hardshell is also in talks with UK-based manufacturers to provide the facility with raw materials in the long-term – a move that will enable it to speed up production of the masks, while helping to support other British businesses.



PPE experts ensure NHS Wales' equipment is fit for purpose

As the COVID-19 pandemic sparked unprecedented global demand and competition for PPE, a Denbighshire-based protective equipment specialist has leveraged its international supply chains to ensure Wales has access to sources of essential equipment.

Established in 2005, **Workplace Worksafe** is a major UK supplier of workplace PPE and protective workwear. As one of the largest independent distributors in the UK, the company typically sells more than 250,000 products to customers operating in a range of sectors across the country and Europe.

Responding to a call issued by Life Sciences Hub Wales for industry support in Wales' battle against the virus, PPE experts at Workplace Worksafe utilised their relationships with an international network of PPE and protective clothing manufacturers. Through this, they were able to establish a pipeline of productive equipment, including masks, scrubs and fitment tests, into the country.

The COVID-19 emergency has seen businesses across Wales rally to ensure NHS Wales and frontline services can access PPE equipment that will protect those working to save lives and serve their communities. To date, partnering with Life Sciences Hub Wales has enabled Workplace Worksafe to supply over 27,000 pieces of equipment into NHS Wales via the NHS Wales Shared Services Partnership.

The achievements of the Workplace Worksafe team goes beyond the ability to source PPE. Their expertise and experience alongside partners at Life Sciences Hub Wales has enabled them to ensure that the equipment sourced meets the standards required for use by NHS Wales.

PPE equipment, such as masks, can only protect an individual if it fits correctly, forming a secure seal when worn. For this reason, Workplace Worksafe also worked to secure face fit testing kits that help NHS Wales staff ensure they find the type of mask that best fits and protects them.



In addition to producing and sourcing equipment for Wales' healthcare and frontline services, Workplace Worksafe is also helping employers across Wales to access the PPE needed to keep their teams and customers safe.

Project to help health staff using PPE facemasks communicate scoops innovation award

Swansea University's Healthcare Technology Centre has played a key role in developing an award-winning communication aid for frontline health and care staff required to wear face masks during the pandemic.

The Centre was part of the Welsh-based team behind **MaskComms** - a microphone designed to be small enough to fit inside a facemask and transmit voice through wireless to a wearable loudspeaker. The project won an £8,000 grant at this year's prestigious Welsh Health Hack, which aims to stimulate innovation and encourage collaboration between NHS Wales, industry and academia.

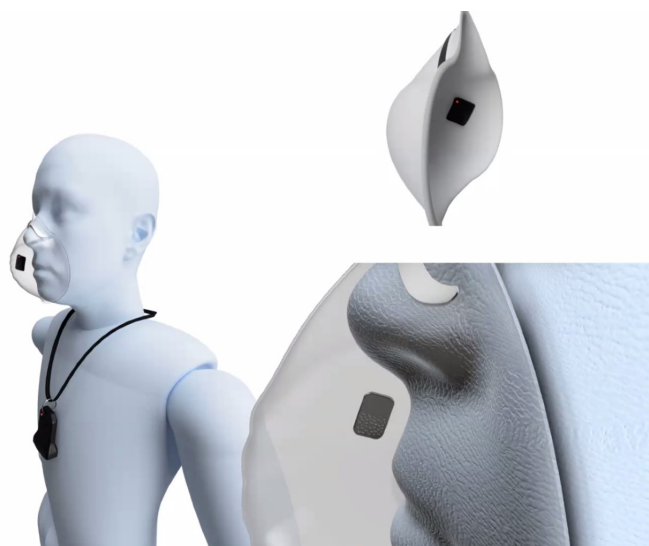
MaskComms is a response to one of many challenges faced due to the COVID-19 outbreak, after the NHS identified that the wider use of facial masks within the hospital environment has reduced the ability to communicate effectively.

The project, led by Dr Simon Burnell, Consultant Anaesthetist at Betsi Cadwaladr University Health Board, is a collaboration with design engineer Wyn Griffith, of Wyn Griffith Designs, product designer Thomas Turner, of Ember Technology Design, and Dr Arif Reza Anwary, Innovation Technologist at Swansea University Medical School's Healthcare Technology Centre.

MaskComms, which will go into production in North Wales, offers an adaptable platform that allows a group of healthcare professionals wearing masks to easily communicate in a hospital environment, such as in an operating theatre during a surgical procedure.

This project won first place at the event hosted by M-SPARC and supported by Life Science Hub Wales, MediWales, The Bevan Commission, Bangor University, Awyr Lâs, Santander and Betsi Cadwaldr University Health Board. This year's event, held online for the first time, saw health and care workers pitch COVID-19 related problems to an audience of techies, product designers, businesses, makers, industry experts, academics, and NHS colleagues.

The Healthcare Technology Centre is part of the collaborative **Accelerate programme**. Accelerate is co-funded with £24 million by the European Regional Development Fund (ERDF), through the Welsh Government. The programme is driving cutting-edge research and translating innovative ideas into new products and services to improve the health and wellbeing of those living in Wales. The programme offers enterprises, bespoke research, development and innovation expertise to refine and validate health care solutions and speed up adoption into the health sector in Wales for economic benefit.



Face shields designed by Accelerate and Swansea University get approved for NHS Wales usage

Face shields to protect NHS staff have been awarded the CE safety mark, enabling large-scale manufacturing for hospitals. This is another collaboration that exists due to the **Accelerate Programme** and the **Healthcare Technology Centre**.

After working around the clock, they set up and manufactured an open-source Prusa design in the College of Engineering, with the addition of neoprene foam and a wide elastic strap for increased comfort. The design was then improved to increase eye coverage and in preparation for mass production.

After being quarantined for 72 hours, the visors were sent out to local hospitals for testing and feedback, which the team used to improve the design further.

The visors have obtained the CE (*Conformité Européenne*) mark, which indicates that a product meets mandatory EU regulations for safety.

The CE mark gives the team the green light to produce the masks using 3D printing. In future, it is hoped the masks can be mass produced using injection moulding rather than 3D printing, thanks to local industrial partners FSG Tool, Die Ltd and Knight Plastics.



⇒ Supporting the 'Test, Trace, Protect' system across Wales

Wales-based manufacturer to produce COVID-19 antibody tests

Ortho Clinical Diagnostics (Ortho), a global leader of *in vitro* diagnostics, has announced that production of their COVID-19 antibody tests is underway at its state-of-the-art facility in Pencoed, near Bridgend in South Wales.

In vitro diagnostics focus on the testing of blood and tissue samples that supports around 70% of medical decisions. Ortho makes immunoassay and immunohematology products that serve immunohematology communities around the world including hospitals, hospital networks, blood banks and clinical laboratories in more than 125 countries and territories.

As an established and recognised company in the growing life sciences community in Wales, the company has long attracted the top talent from local universities, many of which have very well established life sciences schools. The caliber of their workforce as well as a location that enables them to access their distribution networks quickly and easily will help the company evolve and improve for many years to come.

In early April, Life Sciences Hub Wales made a national industry call out for companies to support Wales' work to combat the virus and to which Ortho Clinical Diagnostics responded. A global leader in its field, Ortho has developed a manufacturing base for serological testing in Wales over the past 40 years. Today, the company employs over 500 people at their site in Pencoed and produces millions of tests each week for a wide range of disease states and medical conditions for distribution globally.

Working in partnership with Public Health Wales NHS Trust, Ortho are providing their COVID-19 assays that are produced in the Pencoed manufacturing facility to support COVID-19 testing across Wales.



The tests detect antibodies that can be used to identify an immune response confirming a previous and recent COVID-19 infection and may be critical in back-to-work strategies. Ortho has secured FDA and CE certification for its antibody tests, which offer 100 per cent specificity to help reduce false positives to ensure that people will not be identified as having an immune response to the virus when they do not.

Global collaboration leads to Wales' national COVID-19 Testing Laboratory

A collaboration between Public Health Wales and one of the world's leading diagnostics companies has helped to establish an in Cardiff advanced laboratory dedicated to leading Wales' national COVID-19 testing

Creating a national COVID-19 testing lab at the University Hospital of Wales is an important part of the Welsh Government's 'Test, Trace, Protect' strategy and has been made possible thanks to the support of multinational diagnostics company, **PerkinElmer Inc**, a global leader committed to innovating for a healthier world.

The onset of the global pandemic saw countries across the globe searching for vital testing resources to identify and combat the spread of COVID-19. Public Health Wales NHS Trust's laboratory staff had been working to address issues with a restricted supply chain to find an alternative, reliable system to undertake a large volume of testing for COVID-19 infection in Wales.

PerkinElmer responded to an industry call to action issued by Life Science Hub Wales, with an offer to source testing kits and state-of-the-art lab equipment required to process them. Working together, Life Sciences Hub Wales, Public Health Wales NHS Trust and the team at PerkinElmer identified Wales' key resource needs and set about securing access to vital sources of advanced equipment and test materials needed for the lab in Cardiff.

Staff in the Wales Specialist Virology Centre, operated by Public Health Wales NHS Trust, rapidly evaluated an offer from PerkinElmer and verified the company's ability to meet Public Health Wales' requirements. Public Health Wales was also able to quickly navigate procurement and contractual arrangements so that the equipment could be used without delay.

With established bases in Wales and the UK, PerkinElmer rapidly worked with its UK customers to requisition technology devices that could be quickly repurposed for COVID-19 testing.

In addition to sourcing advanced extraction equipment, PerkinElmer has also provided Wales with a crucial supply of its proprietary COVID-19 specific testing kits that are in demand the world over.

PerkinElmer is a worldwide organisation based in Wales for over 50 years. The company's local manufacturing site is based at Llantrisant Business Park and currently employs over 130 highly skilled employees at a 50,000 sq. ft facility.



⇒ **Supporting staff, patients and the public to maintain excellent hand hygiene**

Welsh distillers answer the call to collaborate to fight Coronavirus

Welsh gin distilleries have produced and given away more than 200,000 bottles of hand sanitiser to frontline services, essential workers and community care providers since the start of the COVID-19 pandemic.

A partnership with the **Welsh Drinks Cluster**, which represents Wales' alcohol and soft drinks producers, is enabling the Life Sciences Hub to aid distillers across the country to switch production in response to the national call-out for hand sanitiser.

Distilleries have joined forces with businesses and organisations from a range of industry sectors to tackle COVID-19 in Wales. As a result, some have accessed support from antimicrobial specialists at Hybrisan to ensure products meet necessary standards, Swansea University has assisted in sourcing essential materials, and Welsh Government support has enabled businesses across Wales to provide logistical support to ensure materials and products can be transported to where they are needed most.

Collaboration in this area has already seen hand sanitiser delivered to hospitals, care homes, GP surgeries, Royal Air Force personnel, police forces, community groups and the Royal Mail.

Crucially, the partnership between the Welsh Drinks Cluster and Life Sciences Hub Wales has allowed distillers to ensure that their products meet NHS Wales' national need. As part of its role to lead Wales' industry efforts to combat Coronavirus, Life Sciences Hub Wales has been designated as the national lead organisation for processing all industry offers made to NHS Wales Shared Services Partnership. As a result, partnering with the Cluster has allowed products made by Welsh distillers to be fast-tracked to where they are most urgently needed within NHS Wales.



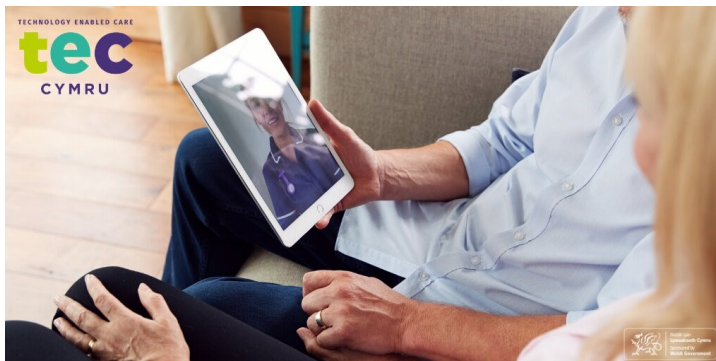
Two of the first craft gin producers to release supplies of hand sanitiser and alcohol hand rub products were Anglesey's Llanfairpwll Distillery and Machynlleth-based Dyfi Distillery.

⇒ **Supporting digital developments to maintain access to key services and keep Wales safe**

Virtual doctor appointments made available throughout Wales

All GP practices in Wales can access a new system that allows people to have online appointments with their doctor and other healthcare professionals.

Working together, the Welsh Government and TEC Cymru produced a proposal for the rapid delivery of the video consultation service for all GPs in Wales in response to the COVID-19 pandemic. The service was already part of a trial within the Aneurin Bevan University Health Board area.



As well as helping people to minimise their contacts, the new system also allows doctors and nurses who are self-isolating, but willing and able to work, to continue to serve their communities. Remote consultations also support GP practices to keep frontline staff and their patients safe by reducing the risk of spreading Coronavirus.

TEC Cymru has enabled over 290 GPs across 73 practices on the new platform. More than 430 video consultations took place within the first three weeks of the service being made available.

Digital Health Ecosystem Wales

Digital Health Ecosystem Wales is a collaboration between the Life Science Hub and the NHS Wales Informatics Service (NWIS). It is funded through the Welsh Government's Efficiency through Technology Programme.

The partnership has three main aims:

- To open up NHS Wales systems and data to developers through a platform of application programme interfaces (APIs), reducing development time and ensuring products are better suited to NHS Wales needs.
- To bring together stakeholders across the digital health community to tackle barriers and challenges to adoption and roll-out, connecting projects with partners and sources of support; and
- To convene the digital health community through events, social media and online to showcase best practice, pilot new approaches and systems, evaluate objectively where the biggest impact can be made and share that information across Wales.



Conclusion

Through meaningful collaboration, organisations across Wales have successfully supplied key products and services to address the immediate needs of health and social care. Partners ranging from start-ups and small and medium sized enterprises (SMEs) through to multinationals have all played a critical role in flexibly and rapidly supporting these outputs.

However, the health and social care challenges we faced prior to pandemic remain – with significant and growing pressures on our primary and secondary healthcare systems. We must apply our learnings from the past eight months to safeguard the future of health and social care within Wales.

Working with the health and social care sectors, Life Sciences Hub Wales has identified five key impact areas that will help to alleviate these pressures and help to accelerate the development and adoption of innovative solutions for better health and wellbeing. These networks will drive the inward investment needed to tackle some of the greatest challenges facing our health and social care services. They cover:

- Healthy Ageing
- Digital, Artificial Intelligence (AI) and Robotics
- Precision Medicine
- Advanced Therapeutic Medicinal Products (ATMP)
- Value Based Healthcare (VBHC)

Life Sciences Hub Wales exists to drive innovations that will have a real impact on the lives of people across Wales. Solutions developed will prepare our health and social care system for rising patient numbers, fiscal pressures, the complexities brought by an ageing population and the need to tackle loneliness and isolation.

One thing is for sure: we need to rethink approaches about the way we deliver health and social care services in Wales. Futureproofing Wales' health and social care system requires a concentrated effort to develop and roll-out innovative solutions. It also means having in place a sustainable resource framework for health and social care services; ensuring that technology is accessible to all, with no barriers to equality of opportunity; and empowering the health and social care system to drive change in ways that support partnerships and integrated services.



How can Life Sciences Hub Wales help you?

Life Sciences Hub Wales works closely with partners to identify and foster opportunities for meaningful collaboration across the life sciences sector and health and social care landscape, working directly with the NHS and business.

Learn more about how Life Sciences Hub Wales helps to empower organisations to create innovative solutions for health and social care at lshubwales.com or follow Life Sciences Hub Wales on Twitter [@lshubwales](https://twitter.com/lshubwales). Alternatively, Life Sciences Hub Wales can be contacted via hello@lshubwales.com.

How can the Welsh NHS Confederation help you?

Please get in touch if you want further details on any of the issues raised in this briefing. Please contact **Nesta Lloyd-Jones, Assistant Director**, on Nesta.Lloyd-Jones@welshconfed.org

The Welsh NHS Confederation is the only national membership body which represents all the organisations that make up the NHS in Wales: the seven Local Health Boards, the three NHS Trusts and Health Education and Improvement Wales (HEIW).

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