ARCH Portfolio Delivery Plan 2017:
A roadmap to improving the health, wealth and wellbeing of South West Wales
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ARCH was formed because we believe a joined up, regional approach is the only way we will be able to deliver meaningful change to improve the health, wealth, and wellbeing of South West Wales.

ARCH is a unique proposition, built on an ethos of collaboration - working together to find a regional solution to tackle enduring societal and economic challenges.

It is helping our region tackle 21st Century health challenges, while in a way that stays true to the founding principles of the NHS.

Over the past 18 months, we have put our words into action, developed robust partnership arrangements, compelling plans, and got on with delivering those projects within our control, including ensuring ARCH is one strand of the proposed £1.3billion City Deal bid for the Swansea Bay City Region.

Over the next three years, we commit to delivering the plans set out within this document. The case for doing so is clear.

Too many people in our region die younger than in other parts of the UK. The life expectancy between our communities varies considerably. Cardiovascular and respiratory illnesses mean people become ill at a younger age, and live with their illness longer. We have an ageing population, often with complex and interrelated needs. Incomes are lower and there is a stubborn productivity gap between the region and the rest of the UK.

We also face significant service challenges. Too many people are treated in hospitals when their needs could be better met elsewhere; care is not joined up between teams and is not always of a consistent quality.

We spend too much money dealing with the symptoms rather than causes of ill health and our health service faces unprecedented financial challenges, requiring us to fundamentally rethink our clinical models of care and structures.

The actions we have taken and are proposing respond directly to these challenges; balancing the need to make urgent improvements to our core business and performance at the same time as transforming our service models.

Specifically, our plan describes action in the following four key areas:

- Workforce, education, and training: We will recover and stabilise health board expenditure on flexible staffing arrangements, which not only contribute to a significant variable pay bill but also threaten the continuity and quality of healthcare. In addition to immediate workforce control measures, we are working with Swansea University and other educational partners to train the next generation of healthcare professionals and scientists, including developing novel recruitment and retention approaches.

- Health and Wellbeing: We will accelerate the development of several health and wellbeing schemes, with primary care at their heart, designed to ensure people can access the care and support they need in their communities, and reducing demand on a pressurised secondary care system. Most schemes are part of wider Public Service Board (PSBs) developments that aim to regenerate and breathe life back into places, providing improved educational and employment opportunities – the two most powerful determinants of health and wellbeing.

- Service Transformation: We have identified 10 clinical and service areas, where we will plan and manage our services over a regional footprint, developing our proposals in partnership with our citizens, to ensure high standards of care and support provided to all of our communities. Our service transformations will be underpinned by cutting edge research and scientific advancements, ensuring the healthcare delivered in our region is cutting edge.

- Research, Enterprise and Innovation: We are providing the foundations for joined up business and investment proposals to boost the economic growth of the area. The City Deal bid was considerably driven by the expertise, talent and capability of Swansea University.

We also see this partnership as a trailblazing move for South West Wales, and also as an opportunity for government to test a regional planning delivery vehicle in terms of design, governance, implementation and effectiveness.

This is an ambitious plan – the first of its kind in this country – and we invite the Welsh Government to walk alongside us as we move into an implementation phase.

ARCH offers a fantastic opportunity to grow and develop together, not least in respect of health and healthcare. We’re starting from a strong place as a number of excellent processes for working collaboratively across the area are already in place. Through ARCH, we have a great opportunity to respond swiftly and effectively to the needs of our communities and to co-produce a healthier future with them.

We know that people who have jobs, good housing and are connected to families and community feel, and stay, healthier. These areas represent big opportunities for us but there will be challenges along the way.

We realise that now is the time to be bold to deliver against Welsh Government’s ambitious agenda to create a Wales which is prosperous and secure, healthy and active, ambitious and learning, united and connected, and there is a real commitment from each of the partners to ensure our vision and aims are implemented and delivered.

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ABM University Health Board, Hywel Dda University Health Board and Swansea University
ARCH aims to deliver the following:

- Improve the health of our communities in the region by contributing to the reduction of health inequalities and empowering the population to manage their own health;
- Use technology and Big Data to improve the delivery of our services;
- Ensure services are integrated and easy to access with health, social care, public, private and third sector working together;
- Deliver a sustainable health system;
- Deliver a step-change for the medical and life sciences economy, by increasing research capacity, and its translation;
- Mobilise the NHS capacity to innovate and translate ideas for the economic benefit of the region;
- Create an open innovation environment and culture, co-locating class-leading science, practice & enterprise;
- Help stabilise the immediate workforce challenges within the NHS;
- Create a sustainable and fit-for-purpose workforce for the future;
- Create a multi-professional learning and training environment;
- Recruit, develop, inspire and retain the best talent including the promotion of increased opportunities for the population of South West Wales;
- Extend the interface between service provision and academia to drive improvement in our population’s health.

The vision for ARCH is to develop an integrated, open, collaborative health and life sciences regional economy here in South West Wales.

The ARCH partners are working together to ensure South West Wales is able to deliver high-quality patient care and ensure we have staff with the right skills to do so.

ARCH aims to improve population health by reducing variation and providing access to excellent care. We want to improve the wellbeing of the region through focused interventions to improve the engagement of the public with their own and health and wellbeing and also promote a vibrant economy through investment, innovation and sustainability of employment.

ARCH places wellbeing at the centre of our future service models and the use of digital technology as the defacto norm in future service design.

Attract, retain and develop next generation of health & life science staff:

- We will implement a series of measures across the region to address immediate workforce challenges
- Re-orientate the education system to deliver a workforce with right skills to deliver next generation healthcare
- We will increase opportunities to support the retention of those who train within the region to work within our two health boards

Create healthcare system fit for 21st Century and the lives we lead today:

- We will create a system built around prevention to help people stay well for longer and keep them out of acute healthcare settings
- We will be innovative and have a digital first approach to services
- We will improve access to high-quality inpatient care through our network of regional health campuses as appropriate

Improving the wellbeing of our population across the entire region:

- We will contribute to the reduction of inequalities in health and wellbeing between population groups
- We will affect a tangible step-change in our approach to prevention and early intervention across all ARCH programmes
- We will reduce demand on services by influencing the key social determinants of health and supporting people to stay well in communities

Drive investment into this region and create new job opportunities:

- ARCH will capitalise on the growing health and life science sector
- We will develop and retain life science enterprises to create a local cluster of innovation & enterprise to attract investment to region
- Harness the region’s one million population to become a testbed for research and development

ARCH is our opportunity to challenge ourselves to deliver transformation.

As well as looking to find immediate solutions to some of the day to day struggles we face, ARCH also allows the three partners time to lift their heads and look to the future to find a long-term solution to providing sustainable solutions.

We will only find the answers by looking forward – and as a region we need to develop a long-term strategy not just about the next 12 months - ARCH has that vision.

ARCH is fundamentally trying to change the way “we do business” across the region.

ARCH has been built on the belief that by strategically integrating and regionally planning our approach to health service development, skills and education, and workforce development as well as research and innovation in the health and life science sector, we will deliver improved wellbeing for the population and increase the benefits.

We recognise that by jointly planning our approach across a region of one million people, we will amplify the advantages and provide solutions to persistent challenges that have vexed the region. This collaborative approach will demonstrate a new methodology which we believe will become a benchmark for tackling enduring social challenges.

ARCH brings together four powerful strands:

- Skills & Education
- Service Transformation
- Wellbeing
- Research, Enterprise and Innovation

We will see significant improvement within all four of these areas, this in turn will lead to both direct and indirect benefit to the wellbeing of the population of the region.

We will develop a pipeline of talent to meet the future demands that the health and life science sector will face and develop new and enhanced roles to meet the workforce needs of new service models.

Through ARCH the health and life science sector for the economy will be enhanced. This will increase the opportunities for people across the region to benefit from research and the translation of this research into economic growth. We can both attract more global investment into the regional sector and boost our own homegrown talent in the health and life science economy.

ARCH aims to do so to deliver high-quality patient care and ensure we have staff with the right skills to do so.

South West Wales is able to deliver high-quality sciences regional economy here in South West Wales.
A Regional Collaboration for Health: Portfolio Delivery Plan 2017

Our vision and aims were set out in the ARCH Prospectus in 2015:

“ARCH aims to create an integrated, open, collaborative medical and life sciences regional ecosystem, delivering high quality patient care, developing doctors, health professionals and life scientists working locally with a global perspective to drive excellence for the sustainable benefit of the health, wellbeing and wealth of South West Wales”

The ARCH partners came together in early 2015 to address - in a new and innovative way - the unprecedented financial, service and workforce pressures facing the NHS as well as identifying an opportunity to expand life sciences as a key economic driver for the region.

Both health boards recognised the urgent need to create a transformative plan for an integrated health service which reflects the current and future needs of the region and saw a regional collaboration as a pro-active solution to seemingly unsolvable issues.

An already established partnership between ABMU and Swansea University through the Partnership Board, set up in 2012, had already delivered a Joint Clinical Research Facility (J-CRF), a common Intellectual Policy (IP) and Commercialisation Policy and collaborative education and skills development and following a decade of success in research, enterprise and innovation built by Swansea University’s Institute of Life Science (ILS) - the health boards’ collaboration with Wales’s now number one Higher Education institution has created a power horse partnership designed to tackle regional challenges at scale and at pace.

Power of partnership:

Swansea University’s Medical School, College of Human and Health Science, ILS and School of Management all delivering world-class research, impact and education and ABMU and Hywel Dda saw the huge value a collaboration with a university of this calibre could bring. In 2011, Swansea University was named the top university in Wales in The Times and The Sunday Times Good University Guide 2017 league table – and it has also won the inaugural Welsh University of the Year title.

Swansea’s top ranking reflects the university’s ambitious campus development programme, with a £60m upgrade of the Singleton Campus less than a year after opening the spectacular new multi-million pound Bay Campus last September.

Applications to the university have risen dramatically by more than 60% in three years and the intake of undergraduate students is up 1,600 over the same period. The university’s phenomenal achievement in the 2014 Research Excellence Framework (REF2014) is also recognised, where four-fifths of the work submitted for was assessed as world-leading or internationally excellent, with health subjects excelling.

Alastair McCall, Editor of The Sunday Times Good University Guide, said: “Swansea made a compelling case to be our first Welsh University of the Year. The opening of the Bay Campus has had a transformational effect on the university, offering students a first-rate made up of key stakeholders. The six teams represented the areas of Service Transformation, Skills & Education, Rural Communities, Research, Enterprise & Innovation, Infrastructure and Wellbeing. These influential

both within and from outside of Wales.” Growth in student numbers will also see a boost to the local economy and the wider Swansea Bay City Region will benefit as the university can use its enhanced reputation to help attract more companies and investment.

Designing the future:

Following the formalisation of the ARCH partnership in 2015, the ARCH Prospectus was submitted to Welsh Government in July the same year. This document laid out the aspirations of the collaboration and set out its main aims and what could be delivered through regional partnership working.

In terms of health, ARCH aimed to:

- Improve the health of the communities of South West Wales, reducing inequalities, empowering and building confidence in the population to manage their own health & resilience;
- Develop infrastructure and services recognised for their excellence at the forefront of defining standards, of the highest quality using technology and big data to deliver innovative services, knowledge and support prudent healthcare;
- Support integration of services so they are easy to access and with health, social care providers, public, private and third sector working together.

In terms of the economy, ARCH aimed to:

- Mobilise the NHS capacity to innovate and translate ideas for the economic benefit of region;
- Create open innovation environments and culture, co-locating truly world leading science, practice and enterprise;
- Harness, retain, nurture and adopt indigenous life science enterprises while attracting global innovators for sustainable economic and health benefit.

In terms of skills and education, ARCH aimed to:

- Create a multi-professional learning and training environment to support a shaped and tailored workforce designed to deliver and sustain ARCH ambition;
- Recruit, develop, inspire and retain the best talent in Wales and the promotion of increased opportunities for population of South West Wales;
- Design and deliver an integrated skills development framework to develop and channel the skills needed to sustain the ARCH ecosystem of service provision, science, translation and commercialisation.

Following the submission of the ARCH Prospectus, the collaboration quickly moved to establish six portfolios which could deliver their aspirational and commercialisation.

- Design, establish and maintain an effective, sustainable collaborative arrangement to lead and steer ARCH
- Ensure an excellent, fit for purpose physical and human infrastructure to meet current and future demands
- Effectively communicate the benefits and impacts of ARCH to all stakeholders

Creating the Wales we want:

Tremendous time, effort and energy by all the partners throughout 2015 resulted in support from Welsh Government in the form of £1.2million to resource a Programme Management Office (PMO) in February 2016, which created 11 new jobs.

The PMO was put in place to enable the ARCH partners to design, plan and deliver a coherent portfolio which could deliver their aspirational and complex aims. Through continuous engagement with Welsh Government, it was realised nothing of this size and complexity had been attempted in Wales before. Due to the transformational nature of the ARCH vision it was decided the development of a Portfolio Delivery Plan would be required to articulate the critical path of delivery such over-arching aims.

To support the work of the ARCH PMO, each of the three partners are still investing expert time, resource and funds into their own organisations to ensure ARCH is delivered. We believe this is a unique proposition and provides a pioneering
Progress already made:

- Established the clinical model for Singleton and Morriston health campuses;
- Prepared Strategic Outline Cases (SOCs) for Pathology, Orthopaedics;
- Opened and first service users through the doors of the innovative Health & Wellbeing Academy led by the College of Human and Health Science at Morriston health campuses;
- Agreed need for nine regional service solutions for the following areas, with project boards set up or being established to drive work forward: Vascular; Cardiology; Neurology; Dermatology; Imaging and Interventional radiology; Stroke services; Ophthalmology; Non-Surgical cancer and Pathology.
- Established advanced administrator project – pilot role based within clinical setting to free up of clinical staff – role piloted within Bronglais Hospital, (job spec developed etc.) and case study in development to allow for regional scaling up;
- Formed an initial project investigation team formed to develop integrated working roles across NHS/ Local Authority boundaries;
- Set up an Apprenticeships project team and terms of reference agreed to develop appropriate clinical and non-clinical apprenticeship role across the region;
- Developed and rolled out a Staff Nurse Development Programme – module developed to improve the basic skills of newly registered nurses;
- First student intake on the bespoke Further Education Talent Bank programme aimed at encouraging local 16+ youngsters into STEM study;
- Established Wales’s first Fujitsu Innovation Hub at Swansea University’s School of Engineering and Management at the new £450million Bay Campus and secured investment from Fujitsu and Intel for Talent Bank Student Ambassador Programme;
- Designed and established ARCH-i as a regional service improvement mechanism. Project team and plan developed to provide an online forum for improvement science practice, research, teaching, engagement, idea base and best practice.
- Secured £13.5million of investment, including £6.7million from Welsh Government, for the Agor-IP project aimed at opening up a pipeline of untapped research in products and services for the commercial market. Recruitment of IP team in progress and appointments due soon. This will lead to further expansion as Singleton and Morriston grow, supporting development of joint IP policy;
- Established project board to deliver Health Technology Centre and appointed a project manager to run the project. Applications being accepted and waiting list for expansion is being managed. WEFO funding applied for to enable expansion;
- Joint Clinical Research Facility (J-CRF) Regional expansion- Established unit on Singleton site and scoping expansion on same site and potential at Morriston;
- Agreed clinical model for regional network of health & wellbeing schemes with Strategic Outline Case (SOCs) in development for 6-7 schemes;
- Designed and planned the multi-million pound Llanelli Wellness and Life Science Village in Carmarthenshire;
- Strategic Outline Case in development to establish a regional wellbeing bond;
- Established ARCH (through the Internet of Things Centre) as a key component of the £500million Swansea Bay City Region City Deal bid; and,
- Welcomed The Bevan Commission to Swansea University’s School of Management at Bay Campus.

ARCH alignment with Taking Wales Forward:

In its Taking Wales Forward programme, Welsh Government sets out the following aims:

- Increase investment in facilities to reduce waiting times and exploit digital technologies to help speed up the diagnosis of Illness;
- Invest in a new generation of integrated health and social services centres alongside the transformation of our hospital estate;
- Take action to attract and train more GPs, nurses and other health professionals across Wales;
- Invest in training NHS staff and provide training and education for all healthcare professionals, especially the primary care workforce to support the work of GPs;
- Work to ensure good industrial relations in the interests of staff and patients;
- Work with schools to promote children and young people’s activity and awareness of the importance of healthy lifestyle choices;
- Introduce a new Wales Wellbeing Bond aimed at improving health and to reduce sedentary lifestyles, poor nutrition;
- Support, prevention and de-escalation, including a pilot Social Prescription scheme; and,
- Build a pipeline of local talent which can feed directly into the health & life science sector. We are doing this through sector-linked apprenticeship schemes; the roll of the Talent Bank Further Education programme, by growing new undergraduate and postgraduate courses which fulfil the needs of the health service.

We are ensuring ARCH is following these ways of working to deliver and address these priorities. Through the network of health and wellbeing schemes we are ensuring an integrated, new generation health and care model is established, which also places prevention, support and early intervention at the heart of this model. The Skills & Education Programme is taking both immediate and long-term action to not only invest in training NHS staff and aid recruitment and retention of staff but to develop a pipeline of local talent which can feed directly into the health & life science sector. We are doing this through sector-linked apprenticeship schemes; the roll of the Talent Bank Further Education programme, by growing new undergraduate and postgraduate courses which fulfil the needs of the health service.

Delivering the Wellbeing of Future Generations Act:

The Wellbeing of Future Generations Act offers Wales a unique opportunity to work collectively as a region in a meaningful way and with a long-term view. ARCH sees itself as the vehicle to deliver this pioneering legislation and each of the three organisations are seizing the opportunity to work differently and engage with others to develop innovative solutions to the challenges that we face.

The ARCH partners are committed to using the Wellbeing of Future Generations Act in our decision-making to improve our part of Wales, now and over the long term.

We recognise that using the Act effectively to make Wales more sustainable means doing things differently. The act sets out five ways of working when making decisions which could impact people living in Wales in the future. They are: Long-Term; Prevention; Integration; Collaboration; and, Involvement.

We are ensuring ARCH is following these ways of working to help us work together better, avoid repeating past mistakes and tackle some of the long-term challenges we are facing. By looking to the long-term, taking an integrated and preventative approach, and involving and working with others, we will be able to understand better how we can maximise our contribution to the wellbeing goals of Government. ARCH is working creatively with all colleagues and partners across South West Wales to find solutions to the challenges that face us and make the most of opportunities which can help maximise our impact in these uncertain times, helping to build the South West Wales we want.

The issues we face can only be tackled through new ways of working and joined up programmes.”

Carwyn Jones
First Minister of Wales

A Regional Collaboration for Health: Portfolio Delivery Plan 2017

“Progress so far”
A Regional Collaboration for Health: Portfolio Delivery Plan 2017

**context**

The ARCH region of South West Wales covers the six local authority areas of Swansea, Neath Port Talbot, Bridgend, Carmarthenshire, Ceredigion and Pembrokeshire.

There is a complex set of boundaries across these different sectors, but ARCH will deliver benefits across all six local authority areas.

Welsh Government has established the Swansea Bay City Region and is supporting the City Deal. This new regional approach to economic regeneration aims to deliver:

- Larger and more efficient labour markets;
- Better scope for better planning;
- Better prospects for attracting investment, innovation and value added economic activity.

The Swansea Bay City Region brings together business, local government and a range of other partners, working to a common goal of creating economic prosperity for the people who live and work in our City Region.

ARCH interprets and applies the vision and aims of the City Region for the wider Health Economy including service delivery, education, and the Life Sciences and Health economic sectors.

All ARCH programmes, have taken care to ensure that their activities and projects support the delivery of the ARCH portfolio aims, and focus on enhancing delivery rather than duplicating those of existing partnership arrangements.

We recognise there are already effective partnerships across the region, of particular importance are the Western Bay and Mid & West Wales Health and Social Care Collaboratives and the Mid Wales Collaborative which the Service Transformation Programme are co-ordinating planning with.

Of particular importance in the context of the Wellbeing Programme, are the new partnership arrangements including Public Service Boards (PSBs).

**Effective regional collaboration in action:**

The Welsh Government has made Prudent Healthcare (including embracing the approach of co-production) a key principle of the nation’s healthcare strategy.

ARCH is supporting the fast application of Prudent Healthcare principles across the region. For example the Health and Wellbeing Academy is ensuring patients are receiving the level of care and support required to achieve a mutually agreed outcome, the new Physician Associate qualification at the Medical School is helping to ensure people are working to the top of their clinical licences by ensuring that doctors are doing the things that only doctors can do.

This innovative approach will allow new solutions to challenges that have proved inhumane using traditional methods.

ARCH seeks to capture the opportunity to en-gineer disparate activities into one integrated innovative strategy to enable co-production in a much broader domain.

ABM & Hywel Dda University Health Boards along with Swansea University are already significant actors, innovators, employers and influencers over the health, wellbeing and wealth of the region, which is manifested in a number of ways.

There are already examples of collaborative work delivering measurable benefits in terms of service delivery, education, research, innovation, and enterprise. These are now being built on within the ARCH Portfolio.

**executive summary**

"ARCH is a unique proposition. Nothing of this scale or complexity has been attempted in Wales before.

- A Regional Collaboration for Health is bringing together health and science to transform the NHS as we know it in this region.
- The university and health boards have chosen to collaborate to create an innovative and fresh way forward for the provision of healthcare and health wellbeing services for the population of South West Wales.

"Once you understand the approach of ARCH – it seems so unbelievably simple."

ARCH chairman Prof Andrew Davies

The ARCH partnership was formed to deliver significant change across South West Wales, based on the realisation that the status quo was untenable.

Many change programmes have historically failed to deliver real transformation in part due to their lack of ambition and vision and because they have worked in silos without meaningful collaboration.

The ARCH partnership sets out in this Portfolio Delivery Plan (PDP) a road map for how it intends to deliver change immediately and over the medium and long term. The resultant Portfolio Delivery Plan is not therefore a traditional service planning document, which focuses on just one problem and one sector (health, healthcare, workforce, economy etc) but rather attempts a synergy of inter-related responses.

This Portfolio Delivery Plan sets out a series of projects which will contribute to both Health Boards recovery and stabilisation plans and sets out the medium to longer term Projects that ARCH will be responsible for delivering and the sequence with which those projects will be delivered.

ARCH has four Programmes:

- Research Enterprise and Innovation.
- 
- This PDP sets out projects that the ARCH Partners will deliver current recovery and stabilisation and lead to a sustainable Health & life science economy.

In each of the four programmes there are schemes that ARCH is clear that it wishes to pursue over the next three years and others which require further work in 2017 before a costed, fully developed solution can be taken to Welsh Government for approval.

The PDP however, is not a traditional Strategic Outline Case (SOC), rather it provides a roadmap for the Three ARCH partners from which specific business cases will be produced. It also provides the flexibility to encompass the output from Hywel Dda’s clinical strategy which is due to be completed in 2017.

The Portfolio Delivery Plan is to support by a Technical Document which provides significant detail across the all four programmes and the crosscutting supporting information.

**ARCH response:**

The ARCH region faces major health and wellbeing challenges. The population is living longer but living with co-morbidities. Across the region there remains a persistent gap in healthy life expectancy between the least and most deprived communities.

Our health services are undergoing considerable pressure, with performance not meeting the high standards of the health boards set themselves.

The projected demand for services is set to increase year on year, outstripping any planned increase in resource.

The South West Wales area as a whole is recognised to be underperforming economically and failing to reach its full potential. Overall Gross Value Added (GVA) growth has been consistently below that of the remainder of the UK and Wales over the past two decades. The ARCH region has too few high value businesses and we are not growing our business base quick enough, our unemployment and economic inactivity remain too high and the physical fabric of the region, and current infrastructure is not meeting our needs.

The workforce in healthcare is aging with significant gaps in many professional groups. There are currently high numbers of vacancies across the health boards and this workforce gap which is predicted to grow, leads to lower quality care and financial deficit. We need to deliver a stabilised solution to the
### Interlinked programmes of work:

<table>
<thead>
<tr>
<th>Health inequalities: 19-year healthy life expectancy differential between least and most deprived communities</th>
<th>Outdated models: Ageing population living with multiple conditions leading to an unsustainable demand</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wellbeing</strong></td>
<td><strong>Service Transformation</strong></td>
</tr>
<tr>
<td>Workforce gap: Sustained shortage across NHS workforce, £75m variable deficit across the region</td>
<td>Regional economic deficit: South West Wales having 75% GVA of the rest of the UK</td>
</tr>
<tr>
<td><strong>Skills &amp; Education</strong></td>
<td><strong>Research, Enterprise &amp; Innovation</strong></td>
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</table>

current workforce challenges and take action to retain our current workforce.

At the same time we need a regional solution to widening access, creating an environment where more young people (particularly Welsh domiciled young people) have the appropriate qualifications and the right opportunities to join health and life science workforce.

ARCH is a joint commitment from three organisations to meet these challenges, Welsh Government has made embracing the approach of co-production a key principle of healthcare strategy.

ARCH takes this philosophy a step further, embracing service delivery, education, skills and talent development, research, innovation, translation and economic development within one integrated health & life science economy.

Through the four ARCH Programmes we aim to:

1. Tackle the underlying causes of all ill health and long standing issues in the region’s primary care provision through:
   - The creation of a regional network of health & wellbeing schemes
   - The development of a wellbeing social impact bond
2. Address the growing shortage of NHS staff by:
   - Support the recovery and stabilisation of the current NHS Workforce improving continuity and quality of healthcare
   - Develop initiatives which will help reduce our historical reliance on expensive temporary staff
3. Create new future-proofed, fit-for-purpose roles to help deliver new models of care
4. Widen access through creation of a pipeline of local talent which can feed directly into the health & life science sector by:
   - Supporting sector-linked apprenticeship schemes
   - The rollout of the Talent Bank Further Education programmes
   - The development of a pipeline of local talent which can access, create an economic deficit: the needs of the health service workforce improving continuity and quality of healthcare

4. Widen access through creation of a pipeline of local talent which can feed directly into the health & life science sector by:
   - Creating new future-proofed, fit-for-purpose roles to help deliver new models of care

### Executive summary

and capability and translate it into regional economic benefit:

- Expand AgorIP - the IP Commercialisation Framework project to capitalise on the innovation taking place in the NHS.
- Create a wider Health Technology Network across the region and indeed Wales.

5. Establish a culture of regional planning and delivery of health services:

- Within the next year establish 10 regional service models including dermatology, neurology, stroke, pathology and orthopaedics.

6. Deliver the Singleton and Morriston Health Campus developments:

- Singleton Health Campus will become increasingly focused on providing services to avoid admission to hospital and we will create new space to teach our future doctors, nurses and Allied Health Professionals.
- Morriston Health Campus will further develop as a regional centre of excellence delivering: South West Wales Cancer Centre, Obstetrics and Gynaecological Services, Hyper Acute Stroke Unit (HASU), a number of regional pathology services, a dedicated gastroenterology role and new emergency orthopaedic unit.

4. Widen access through creation of a pipeline of local talent which can feed directly into the health & life science sector by:

- Creating new future-proofed, fit-for-purpose roles to help deliver new models of care

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- Morriston Health Campus will further develop as a regional centre of excellence delivering: South West Wales Cancer Centre, Obstetrics and Gynaecological Services, Hyper Acute Stroke Unit (HASU), a number of regional pathology services, a dedicated gastroenterology role and a new emergency orthopaedic unit.

**ARCH Portfolio:**

ARCH is a broad and complex portfolio of work it requires:

**Governance:** We have established an ARCH Portfolio Board (PB) in order for effective management and accountability across the portfolio this meets monthly.

**Engagement:** The ARCH partners have adopted an “engaged approach” throughout the development of the portfolio.

**Roadmap:** Within the final part of the implementation section of the PDP we set out the ARCH roadmap. Our roadmap shows when we plan our projects to complete the different stages of development, and when the project will be handed over to “business as usual”. It also shows where projects are interdependent on each other and the sequence with which projects will be delivered in order to meet the September 2018 gateway.

The aim of this section is to provide a high-level indication of the extent of benefits likely to emerge as a result of the ARCH programme, using the four strands as the basis for such an analysis.

Since the submission of our prospectus in July 2015, the ARCH Board has already been successful in gaining funding for some of its projects, a number of these projects have been smaller in size but have demonstrated a flexibility across the collaboration to enable them to take place.

There is no doubt ARCH is an ambitious portfolio of work, ARCH will make a significant contribution to supporting the health economy through recovery and stabilisation set the foundation for a transformed health and life science landscape in South West Wales.

We are seeking support and continued partnership with Welsh Government to deliver this vision.
Our region faces major health and wellbeing challenges. The population is living longer but living with co-morbidities and across the region there remains a persistent gap in healthy life expectancy between the least and most deprived communities.

Much of this mirrors the rest of Wales but South West Wales has the highest proportion of elderly people and also faces significant issues relating to rurality and pockets of social deprivation.

Our health services remain under considerable pressure, with projected demand for services set to increase year on year, outstripping any planned increase in resource. New models of healthcare delivery are urgently required. The South West Wales area is recognised to be underperforming economically and failing to reach its full potential. The primary indicator used to measure this is Gross Value Added (GVA). Overall GVA growth has been consistently below that of the remainder of the UK and Wales over the past two decades. The ARCH region has too few businesses and we are not growing our business base quickly enough. Our unemployment and economic inactivity remain too high.

The workforce in healthcare is ageing with significant gaps in many professional groups, many young people do not have the appropriate Science, Technology, Engineering & Maths (STEM) subjects to be able to train to fill these gaps. We must create an environment where more young people have the appropriate qualifications and the right opportunities to join health and life science workforce. We must also deliver a stabilised solution to some of the current workforce challenges we face.

The ARCH region is a large diverse area containing both urban and rural populations, with distinctive, though interconnected, economies & communities. We recognise our region faces many challenges, which require a collaborative approach to resolve.
However, too much of the employment created over this period was in lower value sectors and occupations. As traditional employment was lost, with, for example, over 30,000 fewer jobs in manufacturing in 2010 than was the case in 1990, a major productivity gap has emerged between the region and the UK.

GVA per employee in the region was £28,500 in 2010, against a comparable figure of £36,800 in the UK; 77% of the UK average. By contrast in 1990, our GVA was 90% of the UK level as had been the case in 1981. Collaboration across the region will help ensure history is not repeated as we recover from more recent economic shocks.

Other key economic issues facing our region include:
- We have too few businesses and we are not growing our business base quickly enough. There are fewer firms to generate the wealth we need and provide employment for local people.
- Our unemployment and economic inactivity remain too high. The economic activity in particular is now well below national levels – at 71% compared to 76% in the UK.
- Jobs are all too often in those occupations which tend to pay relatively low wages; the average weekly salary £366, compared to £404 in the UK.
- Our current regional infrastructure, is not meeting the needs of modern businesses and communities.

Our belief is that growing the health and life science economy will provide a significant contribution to these challenges.

The life science and health sector in Wales employs 11,000 high-value jobs in more than 350 companies. Overwhelmingly, these companies are Small, Medium-sized Enterprises (SMEs) with a modest number of large global enterprises creating significant employment.

The majority of economic activity is in a sub-set of life science called medical technology (often referred to as medtech or healthcare technology).

Life science, and particularly medtech, is also characterised by the fact that it integrates with other key sectors, particularly Information & Communications Technology (ICT) advanced manufacturing and tourism.

We aim to build upon the existing Institute of Life Science (ILS) which in the first 10 years of its existence has supported the creation 800 new high-value jobs within the sector, as well as supporting the creation of 50 new enterprises, actively assisting 425 enterprises and attracted more than £50million of incremental inward investment.

We already have a proven track record of innovation, translation and entrepreneurship within the life science sector, and we want to expand this for the benefit of our population. One of the ways we want to bridge the productivity gap is through improving the skills of our population. There are still too many people in our region with no qualifications and too few people with NVQ level 4. Both the UK and Welsh governments are clear that having a skilled population is vital in maintaining the international competitiveness of our economy and creating high quality jobs.

The Organisation for Economic Co-operation and Development (OECD) evidence suggests that the UK's intermediate and technical skills lag behind our major competitors such as Germany and the US. The Leitch Review of Skills (2006) has suggested that one to one fifth of our productivity gap compared to such countries can be attributed to a lack of skills.

23\%  
GVA per employee in the region is 23% lower than the UK average. If we do not act, by 2030 each worker in the rest of UK will on average produce £10,000 more than each worker in Swansea Bay Region in GVA terms.

We want to transform this cycle of decline into a virtuous cycle of growth (see diagrams below), where we develop our future and existing workforce to meet the known and latent demand in the health and life science economy.

We recognise that we now have significant undersupply of skilled workers and therefore a pressing requirement to develop our own population to meet these needs. For the health boards these workforce gaps are a fundamental challenge. They result in unstable services, restrict service change, compromise quality and are a major driver of the financial deficits both health boards face due to the reliance on high-cost temporary staff to plug gaps. Through ARCH we want to transform this cycle of decline into a virtuous cycle of growth (see diagrams below), where we develop our future and existing workforce to meet the known and latent demand in the health and life science economy.

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230,000  
Projected shortage of doctors in Europe in 2020

*European Commission, “Feasibility Study on EU-level collaboration on forecasting health workforce needs, workforce planning and health workforce trends”

There is a clear demand for these skilled workers (see the table on page 19). To meet this demand there needs to be a pipeline established that ensures that our young people from primary school
Health & wellbeing context:

The state of the economy is not the only factor important to wellbeing. Rather, there are many aspects of people’s lives that have been found to be linked with their level of wellbeing.

The European Commission’s report Beyond GDP calls attention to indicators that are more inclusive of environmental and social aspects of progress — indicators that we see reflected in the Wellbeing of Future Generations (Wales) Act 2015.

The rich diversity of the ARCH region – not least its mixed rural-urban landscape and growing and increasingly ageing population – reflects this multiplicity of factors that influence wellbeing.

The ARCH region, and Wales more broadly, faces considerable challenges to health and wellbeing that are likely to increase in the coming years if we do not change the ways that we tackle them. We have already noted that the population is living longer but often with a burden of ill-health, and that there are geographical pockets of deprivation upon which we can map persistent gaps in health outcomes and healthy life expectancy.

There is a strong case for exploring the relationship between health and wellbeing, and how improved wellbeing might reduce demands on the healthcare system and wider public sector. This is because adverse wellbeing underpins many physical diseases, unhealthy lifestyles and social inequalities in health which are damaging to individuals and society.

The four personal wellbeing questions used by The Office for National Statistics (ONS) capture important elements of subjective wellbeing: namely, self-reported feelings of anxiety, happiness, life satisfaction and how worthwhile one feels.

ONS questions to measure personal wellbeing:

1. Overall, how satisfied are you with your life?
2. Overall, to what extent do you feel the things you do in your life are worthwhile?
3. Overall, how happy did you feel yesterday?
4. Overall, how anxious did you feel yesterday?

Questions are measured on an 11-point scale, from 0 ‘not at all’ to 10 ‘completely’.

Using the ONS4 data, the graph (top right) provides a snapshot of wellbeing in Wales. It shows that self-report of extent of life satisfaction and feeling worthwhile and happy is lower among people aged 25-55 years (with the exception of an increase in self-reported happiness among 35-40 year-olds), increases among those people in mid-life (around age 55) and decreases again among those people in the later stages of the life course.

Distribution of achieved score for ONS questions over different age groups (16 years +), 2015:

A preliminary regression analysis has looked at the impact of a range of factors on summary wellbeing scores (i.e. summed scores for each of the ONS4 questions) (results not shown*).

The findings show that self-report of ‘excellent’ or ‘very good’ general health has the largest positive effect on wellbeing, when all factors - including education and age - are held constant. The analysis also shows that being a long-standing illness and being permanently unable to work due to long-term illness are the two factors with the greatest negative impact on wellbeing.

These findings are important because around a fifth of people in ARCH region report having all five healthy lifestyle behaviours. Only a very small proportion (3%) report having all five healthy lifestyle behaviours. Only a very small proportion (3%) report having all five healthy lifestyle behaviours. Only a very small proportion (3%) report having all five healthy lifestyle behaviours.

Finally, the regression analysis shows that risky lifestyle behaviours, including alcohol consumption and smoking, also have a negative impact on wellbeing. This is an important consideration in the ARCH region, where most people (35%) report having only two (of five) healthy lifestyle behaviours. Only a very small proportion (3%) report having all five behaviours, matched by the same proportion which reports having none of the healthy lifestyle behaviours at all (3%).

These figures compare unfavourably with those for Wales overall, which show that the largest proportion (32%) report having three (of five) healthy lifestyle behaviours, and that a marginally higher proportion report having all five healthy behaviours (5%) (Dixon, J. 2016).

Healthy lifestyle behaviours*, percentage, person aged 16 and over, Hywel Dda & ABM UHBs combined, 2014-15:

Number of healthy lifestyles behaviours

0 1 2 3 4 5

<table>
<thead>
<tr>
<th>Healthy lifestyle behaviours</th>
<th>Number of healthy lifestyles behaviours</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>3%</td>
</tr>
<tr>
<td>1</td>
<td>16%</td>
</tr>
<tr>
<td>2</td>
<td>35%</td>
</tr>
<tr>
<td>3</td>
<td>31%</td>
</tr>
<tr>
<td>4</td>
<td>12%</td>
</tr>
<tr>
<td>5</td>
<td>3%</td>
</tr>
</tbody>
</table>

Produced by Prudent Healthcare Intelligence Unit (PHIU) December 2016, Welsh Health Survey Dataset (WHS) 2014

5 healthy lifestyle behaviours:

✓ Not smoking ✓ Not drinking alcohol above guidelines ✓ Eating 5 or more portions of fruit & vegetables a day ✓ Healthy weight ✓ Physically active on 5+ days

35% of people in ARCH region report having only two behaviours

3% of people in ARCH region report having all five behaviours
the case for change

European age-standardised rate of Emergency Department attendances for all non-injury and not admitted to hospital within 72 hours of attendance by LSOA for ARCH residents, 2015:

Avoiding unnecessary emergency hospital admissions is a major concern for the NHS, due not only to the associated financial costs but also to the pressure and disruption they can cause to elective healthcare and to the individuals admitted.

There has been an upward trend in emergency admission rates in Wales over recent years, and rates of emergency admission in Wales have remained persistently and markedly higher than in other constituent nations of the UK (National Audit Office 2013).

To explore potentially unnecessary Emergency Department (ED) attendances, non-injured attendees in the ARCH region have been linked to the Patient Episode Database for Wales (PEDW) to determine whether they had been admitted to hospital within 72 hours of attendance (further information can be found in appendix 22: ARCH Data Analysis Report).

The following table provides a breakdown of adults’ self-reported lifestyle behaviours. It shows that ABM UHB lags behind both Hywel Dda and Wales in terms of daily consumption of fresh fruits and vegetables, physical activity that meets current guidelines (more than 150 minutes/day), drinking alcohol above guidelines and binge drinking.

We also see important differences at the Local Authority level. So, for example, looking at alcohol consumption in ABM in further detail, highest rates of drinking above guidelines and of binge drinking are reported in Swansea. Also, while Hywel Dda performs better than the Wales average for physical activity, people in Carmarthenshire are less likely than their Hywel Dda counterparts in Ceredigion and Pembrokeshire – and in Hywel Dda overall - to be physically active compared to current guidelines.

These findings underline why ARCH moves away from a ‘one-size-fits-all’ approach toward locally-tailored solutions for health and wellbeing.

People’s financial circumstances can have a significant impact on their lifestyle behaviours, and living in an area of high deprivation can often adversely affect wellbeing**. The graph (left) demonstrates that a quarter (25%) of residents in ABMU area live in areas categorised among the most deprived in Wales. Indeed, there are pockets of deprivation across the ARCH region (map shown on p17), underscoring the requirement to plan and deliver services in the context of broader social determinants of health and wellbeing. In summary, there is a complex relationship between health and wellbeing that can be influenced by different factors, in different ways, and at different times of life. This well-known interplay suggests that the health service cannot work in isolation but needs to take a collaborative and whole systems approach to the fundamental causes, or upstream factors, of poor health and wellbeing, exactly the approach taken by ARCH.

*ARCH has worked in productive partnership with Prudent Healthcare Intelligence Unit (Swansea University Medical School) and the Public Health Wales Observatory to develop a systematic regional assessment of the state of health and wellbeing - or “case for change” - across the ARCH region. A significant amount of both theoretical and analytical work has been invested in this “case for change”: a literature review of how to define and measure wellbeing, including evidence of what works to improve wellbeing; a regional picture of prevailing health and wellbeing across the region; a critical review of current and optimal data sources for measuring national and regional wellbeing; and a forward looking plan to address identified gaps in data availability and quality, in order to support the measurement of wellbeing and enrich understanding of its inextricable interaction with health. An abridged compendium of this pioneering work will follow.

**Public Health Wales Observatory, using WAG 2014 (HS) & MYE (ONS).
A Regional Collaboration for Health: Portfolio Delivery Plan 2017

The need:
Health inequalities: 19-year healthy life expectancy differential between least and most deprived communities
Outdated models: Ageing population living with multiple conditions leading to an unsustainable demand

The impact:
Wellbeing
Service Transformation
Skills & Education
Research, Enterprise & Innovation
Regional economic deficit: South West Wales having 75% GVA of the rest of the UK

The ARCH portfolio is made up of four programmes of work.
Each of our programmes is made up of 12 to 20 projects. Through the delivery of these projects we will begin to address many of the challenges set out in the case for change.

The four programmes are:
➡ Skills & Education
➡ Service Transformation
➡ Wellbeing
➡ Research, Enterprise and Innovation

We recognise that our programmes are highly interlinked, many projects deliver benefits across more than one programme and some projects deliver benefits across all the four programmes.

Interlinked programmes of work:

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Each of our programmes is made up of 12 to 20 projects. Through the delivery of these projects we will begin to address many of the challenges set out in the case for change.

The four programmes are:
➡ Skills & Education
➡ Service Transformation
➡ Wellbeing
➡ Research, Enterprise and Innovation

We recognise that our programmes are highly interlinked, many projects deliver benefits across more than one programme and some projects deliver benefits across all the four programmes.

The challenges that each of the programmes is designed to address are interlinked. Therefore our solution is not just to collaborate between partner organisations but design projects that are themselves a collaboration, providing solutions that have a multiplier effect delivering benefits across the programmes.

We have designed our governance (see pages 368-395) and portfolio infrastructure to enable this approach.

Case study: Regional Pathology Project
Demonstrates how the four programmes interlink through projects:

The traditional hospital structures and models of care have needed to change to reflect the changes in rural and more remote communities.

For these small, communities flexible service model need to be developed which are client focused, responsive to community needs and offer better integration of services and connected to clinical networks extending into secondary and tertiary care and where relevant related to R&D and commercial opportunities and wealth creation.

ARCH offers opportunities across our two health boards to integrate a range of health spanning primary through to quaternary care levels including acute care, sub acute care including respite and palliative care emergency, allied health, oral health, primary health and wellbeing and community services, informed robust service planning and community support to best meet the needs of smaller communities in a sustainable way.

Similarly, caring for health cannot be confined to singular interactions within the walls of the health care system but must fully engage powerful determinants within other systems such as education, housing, employment, justice, and transport.

The need:
Workforce gap: Sustained shortage across NHS workforce, £75million variable workforce, across NHS workforce, £75million variable deficit across the region
Case studies:
Pathology project
Opportunities:
➡ Update service models
➡ Transform service model for pathology, improving quality, safety and responsiveness
➡ Increase capacity: Vaced space at Singleton reassigned as teaching space for additional Medical School students to develop NHS workforce
➡ New Laboratory linked to new ILS@Morriston providing specialist research translated into commercial ventures

The impact:
➡ Wellbeing
➡ Service Transformation
➡ Skills & Education
➡ Research, Enterprise & Innovation

This diagram (left) shows how the ARCH Regional Pathology project provides benefits across our four programmes. Our collaborative approach ensures that as a project develops all benefits across all projects are realised not just those in the accountable programmes.
The ARCH collaboration will deliver against the Wales Programme for Government (Taking Wales Forward Nov 2016). Through the portfolio we aim to demonstrate a measurable improvement in the wellbeing of our population. We have developed ARCH as a vehicle to enable us to deliver our parts of this mandate.

Taking Wales Forward is the Welsh Government’s programme for the next five years. Taking Wales Forward sets out the Government’s programme to drive improvement in the Welsh economy and public services, delivering a Wales which is prosperous and secure, healthy and active, ambitious and learning, united and connected.

The Government’s priorities for delivering those improvements are ambitious, aimed at making a difference for everyone, at every stage in their lives.

Alongside the programme, the Government has set out its wellbeing objectives which set out how the Wellbeing of Future Generations Act 2015 will help deliver this programme for government.

ARCH alignment with Wales Programme for Government:

- Supporting business, innovation & entrepreneurship in health & life science. For example: Health Technology Network project
- Investing in a new generation of integrated health & social care centres alongside transformation of hospital estate
- Establishing region as a showcase for digital connectivity and its use to impact health & life science. For example: Digital Strategy delivered through a City Deal
- Enhancing links between FE and HE with industry and supporting entrepreneurship. For example: Talent Bank project

Portfolio Design:
- rural assurance
- Health and wellbeing outcomes for people living in rural West Wales should as a result of ARCH be better for most and much better for some than if the project had not been established with the capacity to:
  - Respond to opportunities and build on significant achievements made in recent years to develop new capacity, deliver excellence and make transformational change in health, care services and wellbeing for rural communities.
  - Provide infrastructure which includes capital infrastructure as well as service development, research and innovation taking account of the fundamental elements in providing effective quality health and care services for health and wellbeing for rural communities.
  - Mobilise, with Higher and Further Education, a step-change in the development of network of centres of excellence for research and develop the health and care workforce for the rural communities.

We recognise the need to consider and adapt to the needs of rural populations when designing solutions for our region. The ARCH portfolio has been scrutinised by a Rural Assurance Board to ensure ARCH has considered rural needs and is taking action to provide better health and wellbeing outcomes.

- The Regional Learning & Skills Observatory Data & Intelligence Report: 10th Edition notes the importance of the health, public administration and education sectors to the region (and key sectors for ARCH).
- Specifically the report states that the health sector will be the second largest employer across South West and Central Wales with 36,900 employees by 2030, while health, public administration & defence and education sectors respectively will be second, third and fourth largest contributors to regional GVA.
- The region currently has a range of workforce issues which include significant vacancies (that have to date been unable to be recruited) within nursing and midwifery registered along with medical and dental staff groups.

The specific recruitment issues for the health boards within the ARCH region are circa 4.2% down across both Health Boards and all staff groups, however significant issues in key staff areas namely:
- 25% down in planned ‘Medical and Dental’ roles/numbers within Hywel Dda UHB;
- 9.6% down in planned ‘Medical and Dental’ roles within ABMU;
- 9.2% down in planned ‘Nursing and midwifery registered’ roles in Hywel Dda UHB;
- 13.1% down in planned Band 5 (Nursing & midwifery registered) roles in Hywel Dda UHB;
- 11.6% down planned Band 5 (Nursing & midwifery registered) roles in ABMU

Issues regarding recruitment not only contribute to a significant variable pay bill but also threaten continuity and quality of healthcare. Workforce instability is a significant contributor to weakened performance which includes the health boards financial deficit of which variable pay contributes circa combined £73million deficit (total across both Health Boards).

Issues regarding health board hitting targets can also in part be attributed due to workforce recruitment problems.

ARCH is a pro-active response to the urgent requirement to reshape and upskill the workforce to be fit for purpose with changing service models, patient expectations and overall needs.

Both ABMU & Hywel Dda have identified common skills, workforce and education action required in order to stabilise and produce a sustainable workforce. Specifically these include: 1. Initiating Regional/ Collaborative Planning of the Workforce 2. Action on widening access 3. Action on recruitment 4. Action on retention 5. Action on developing new and extended roles 6. Action on re-designing primary care workforce 7. Action on leadership and management development

ARCH aims to establish a pipeline which builds on the University’s success to date by making the most of the opportunities to train future staff to meet the need articulated by the health boards.

The ARCH partners realise the vital need to plan and build a workforce with the right numbers and skills & education
mix of skills to meet the majority of peoples planned and unplanned needs at the right time, by the right person, closer to home in flexible ways and flexible facilities. ARCH also recognises it is imperative that the regional health and social care workforce is talented, skilled and an aligned workforce to deliver organisational strategies and objectives that will impact upon the health and wellbeing of individuals within the region.

To achieve this, short and long term strategic interventions need to be developed that are creative and aspirational. It is clearly evident that the model currently utilised for workforce planning is not sustainable and does not deliver the expectations of the health boards within the region.

The pipeline that ARCH is developing creates both short term strategies which are aimed to achieve stabilisation, to meet the significant deficits in the current workforce numbers.

While also delivering long-term strategies aimed to achieve sustainability within the workforce so that health boards regionally are proactive and responsive to the changing health and wellbeing needs of the local population.

Aligned with the Welsh NHS Confederation (Building a Vision for NHS Wales, 2016), the ARCH partners are developing the strategies to support both health boards to change from an illness-based, provider-led system towards one which is patient led, preventative in focus and offers care closer to home.

Specifically, the ARCH Skills and Education Programme aims to tackle the key strategic issues of either stabilisation or sustainability, or in some cases projects will aim to tackle both agendas as these are not mutually exclusive issues.

Stabilisation and Recovery: The partners are working together with the purpose to address the immediate workforce challenges that relate to recovering and stabilising their expenditure on flexible staffing arrangements, which not only contribute to a significant variable pay bill but also threaten continuity and quality of healthcare.

Stabilisation activity will address the current risks to the regional health and social care workforce is talent, skilled and an aligned workforce to deliver organisational strategies and objectives that will impact upon the health and wellbeing of individuals within the region.

The ARCH has fostered relationships between Talent Bank and Fujitsu and Intel to ensure the local students who are part of the project can be immersed in an innovation-rich environment working with leading industry, health and life science partners. Education needs collaboration and support from the industry to ensure the right skills development for young people, to lead to future employment opportunity. Fujitsu have supported the project by setting up an Innovation Hub to provide students with digital skills development.

The project will ensure young people in Swansea graduate with the necessary skills to progress in the life science and health sector.
**ARCH** is working to create a pipeline of future workforce by maximising partnership working which will widen access through multiple entry points, diversify the education offering and deliver action which recruits and retains staff.

### Widening Access:
- Reaching different demographic
- New domiciled students
- Outreach via schools
- Bespoke FE programmes such as Talent Bank

### Delivering Education:
- Distance learning
- Focus on delivering leadership & management skills
- Feeder courses (route: degree - feeder - GEM - MsC)
- Multiple access points: Continuous Professional Development for qualified NHS professionals

### Recruiting Staff:
- ARCH provides link between students and our two health boards employment opportunities
- "Train close to home, close working relationship with health boards throughout training"

### Retaining Staff:
- Offer of regional working is attractive “The way we do healthcare in ARCH region is different to rest of Wales”
- Culture change - enable flexibility/ personal development
- Training of good quality
- Empowerment and enabling key to retention

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**Skills & Education**

#### Vision & Aims:

- The programme is creating a pipeline developing both short term stabilisation and recovery to meet significant deficits in the current workforce numbers while also delivering sustainability:
  - Initiating regional & collaborative planning of the workforce;
  - Establish policies which facilitate strategic collaborative recruitment which stabilise and reverse the current trends in staff vacancies in the South West Wales health economy in the short and medium term;
  - Widens access through collaboration with FE to implement pathway programmes for 16-18 year-olds into sector in the medium to long-term;
  - Develop workforce to ensure we use the benefits of ICT in delivering care;
  - Develop new and extended roles for advanced and changing professional roles;
  - Develop new and extended roles for advanced and changing professional roles;

#### What do we need to do next?

- **Stabilisation:** Faster implementation of new optimal and electronic rostering systems;
- **Explore pan-region programme to improve motivation & decrease unwarranted absence;**
- **Explore regional negotiation to strike better deal with agency staff;**
- **Explore establishment of regional nursing bank which aligns to the recommendation from the independent review into NHS Wales workforce.**

#### Sustainability:

- **Building on success of university to date to take opportunity to train future doctors, though the Graduate Entry Medicine (GEM) where graduates can be ready to work in the NHS in 4 years;**
- **Establish a project where health boards can indirectly commission nurse training placements;**
- **Establish phase two of the Career Progression for overseas nurses;**
- **Establish phase two of the Apprentice project;**
- **Establish a GP Academy at Singleton Health Campus; and,**
- **Integrate the Health & Wellbeing Academy model into each health & wellbeing schemes.**

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**What approach will we take?**

- We aim to transform skills, education and workforce in the health economy of the region. Therefore appropriate planning principles have been used to design our projects, which have been aligned with the following:
  - The Wellbeing of Future Generations Act 2016;
  - Swansea Bay City Region (SBCR) helping to develop the existing and future workforce of the region;
  - Informed Health & Care – A Digital Health Strategy for Wales (Welsh Government) Ensuring skills gaps in the use of digital tools are addressed;
  - The Future of Primary Care: we recognise primary and community care services now face major challenges; with an increasing workload, an ageing population, and increasingly complex medical problems being diagnosed and managed in the community;
  - The relationship between the public & health professionals is changing – with increasing focus on giving people information and involving them in their care;
  - Fully aligned our Skills and Education programme to Life Science Skills for Life strategy;
  - Welsh Government Innovation Wales Strategy seeks to build upon this infrastructure by creating and accelerating new skills opportunities;
  - NHS Wales workforce review is changing – with increasing focus on giving people information and involving them in their care;
  - Changing demographic & workforce drivers as evidenced in the recent Health Foundation report (October 2016);
  - An NHS workforce that has to change from an illness-based, system towards a patient led & preventative focus.

#### What have we already done?

- Establish the first phase of the Physician Associate project, which has seen 15 funded place students begin their training as Physician Associates in 2016;
  - Established the first phase of the Talent Bank project, which is establishing a pathway;
  - Established the first phase of the health board apprenticeship projects approximately 40 FE students beginning in range of careers across the health boards;
  - Established the Singleton Health and Wellbeing Academy;
  - Completed first phase of the administrative assistant project;
  - Establish a project where health boards can indirectly commission nurse training placements;
  - Explore pan-region programme to improve motivation & decrease unwarranted absence;
  - Establish a GP Academy at Singleton Health Campus; and, **Integrate the Health & Wellbeing Academy model into each health & wellbeing schemes.**
### Skills & Education Programme: Projects & Timelines

#### SE1 Regional Workforce Planning: Planning & Horizon Scanning, Strategy documentation
- **2016**
- **2017**
- **2018**
- **2019**
- **2020**
- **2021**

#### SE2 Advanced Admin Role: Piloting of Advanced Admin role to free up clinical time
- **2016**
- **2017**
- **2018**
- **2019**
- **2020**
- **2021**

- **2016**
- **2017**
- **2018**
- **2019**
- **2020**
- **2021**

#### SE4: Bespoke Bank: Bespoke FE programme aimed at young people 16 years+
- **2016**
- **2017**
- **2018**
- **2019**
- **2020**
- **2021**

#### SE5: Apprenticeships: Development of appropriate clinical and non-clinical apprenticeships
- **2016**
- **2017**
- **2018**
- **2019**
- **2020**
- **2021**

#### SE6: Physician Associates: Development of pipeline of Physician Associates trained to support doctors
- **2016**
- **2017**
- **2018**
- **2019**
- **2020**
- **2021**

#### SE7: Nursing Associates: Development of the pipeline of nursing associate roles for South West Wales
- **2016**
- **2017**
- **2018**
- **2019**
- **2020**
- **2021**

#### SE8: Wider Professions Development: Development of the pipeline of wider associated roles
- **2016**
- **2017**
- **2018**
- **2019**
- **2020**
- **2021**

#### SE9: Welsh Domiciled Students: Attract & retain welsh domiciled students to remain in Wales.
- **2016**
- **2017**
- **2018**
- **2019**
- **2020**
- **2021**

#### SE10: Digital Literacy/E-Learning: Ensure ARCH population is tech savvy by providing right training
- **2016**
- **2017**
- **2018**
- **2019**
- **2020**
- **2021**

#### SE11: GP/Primary Care Academy: Provide innovative practice-based learning in a multi-professional context
- **2016**
- **2017**
- **2018**
- **2019**
- **2020**
- **2021**

#### SE12: Health & Wellbeing Academy: Skills dev. and innovative practice-based learning
- **2016**
- **2017**
- **2018**
- **2019**
- **2020**
- **2021**

#### SE13: Therapies & Health Science: Career development & support
- **2016**
- **2017**
- **2018**
- **2019**
- **2020**
- **2021**

#### SE14: Healthcare Support Worker: To deliver the All Wales HCSW Career Framework across region
- **2016**
- **2017**
- **2018**
- **2019**
- **2020**
- **2021**

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### Other Skills & Education-linked projects:
- Llanelli Wellness & Life Science Village (R,E,&I component) - see page 49
- Talent Bank (R,E,&I component) - see page 49
- Health & Wellbeing Academy (wellbeing component) - see page 45

### City Deal case study:
**The Swansea Bay City Region has put a proposal together for UK and Welsh Government to secure a funding package for the region.**

The City Deal will accelerate projects within ARCH such as Talent Bank.

Global tech firm Fujitsu has opened its new Education Innovation Hub at Swansea University’s Bay Campus. The technology-focused hub is supported by Talent Bank. Talent Bank, which is led by Gower College in a partnership with the ILS through ARCH, is a bespoke FE programme designed to support the evolving life and health science sector in South West Wales.

The project will ensure young people in Swansea graduate with the necessary work-based skills to progress to university, go on to work-based learning or directly into employment.

ARCH recognises the rising demand for STEM subject students across all sectors and this industry-led programme is designed to grow local talent and skill supply across the region.

Students across South West Wales will be able to get hands-on, world-class exposure to industry experts from across the UK.

Talent Bank will provide a dynamic learning experience which will help us ensure we are creating our workforce of the future. Fujitsu director Joe Durran said: “By using technology and harnessing innovation we can redesign the future of healthcare. “ARCH is an exciting vehicle to help deliver this.”
The ARCH partners believe that achieving comprehensive use of digital technology by people, patients and staff across the region is an essential component in meeting the three tests of a sustainable health and care organisation strategy.

The three tests are:

✓ Viability: It appears that trying to continue serving the rising demand and expectations and addressing the health inequities with currently deployed ways of working will become unaffordable for a shrinking population of taxpayers to bear.

✓ Demographic changes:
  - More of us are going to live longer;
  - There will be more of us in total;
  - There will be more chronic conditions and disability;

✓ Expectations of the range, quality and timeliness of treatments to be available to us to continue to rise; and:

✓ The actions taken in the past to tackle health inequity have not had the impact required.

✓ Feasibility: The current manual/paper-based ways of working will become operationally unsustainable due to the impact of the above demographics on our Health Board workforce, and the difficulties of attracting and retaining staff (yet there is more than enough capacity already if our staff are able to do just those things that only people can do, and we use all forms of technology to do the rest).

✓ Desirability: As the use of digital technology becomes more pervasive in health and care, it is foreseen (Gartner, Dec 2016) that organisations not keeping up in utilising digital technology in the provision of individual health and care services will leave themselves open to medical malpractice lawsuits.

Therefore, in line with the national digital health and social care strategy, Informed Health and Care (December 2015), both health boards intend to place becoming ‘digitally-enabled’ organisations at the heart of their organisation strategies.

Digitally-enabled means that all of the following will be accessible in digital form and on appropriate devices:

- Information: Healthy living, patients’ records, images and test results, prescriptions, vital signs, item location;

- Communication: Messages, appointments, virtual clinics, dictation, telecommunications;

- Entertainment: While in care as an aid to recuperation;

- Workflow: Clinical and business processes, for example bed and medicines management, documentation and tools;

- Intelligence: Decision-support information needed to run the Health Board and provide clinical services; and,

- Analytics: Decision-support information needed to improve our services and systems in line with national digital strategy.

Becoming a digitally-enabled health economy is the only business change where the economics of investment can scale exponentially and everyone benefits. This is because the marginal cost of serving one more person is close to zero, and people can consume digital services whenever convenient and without the service provider having to be present.

Both health board’s current plans to achieve their new health and care system include:

- Digitally-enabling the system by weaving digital into the fabric of the system so that in due course physical tasks and decision-making will be digitally-guided and workflow processes will be digital end-to-end.

This will reduce unwarranted variation in service provision with the aim of improving service outcomes and service user experience. In so doing, both health boards recognise the issue of digital exclusion affecting some of our citizens, and will seek to provide assisted digital support to those who can’t, don’t or won’t access digital services themselves.

The aim is that all people and patients should have the right information at the right time to increase their knowledge and understanding of their health matters, and the right tools at the right time to enable them to take action for their own, or their family’s benefit. Working together with people in our communities and our patients to achieve this, all health and care organisations in our economy will provide support, assessment, care and treatment, and coaching so that people spend more of their lives in good health.

The digital technology projects which have been included in this ARCH Portfolio Delivery Plan are those that provide the common components in all ARCH partner organisation digital strategies.

ARCH and the Swansea Bay City Deal:

A £1.3billion investment plan for South West Wales will help accelerate the progress of the ARCH partnership.

Funding from the multi-million pound Swansea Bay City Region City Deal would enable the delivery of certain projects within the ARCH Portfolio. The City Deal bid has seen four local authorities, two health boards and Higher and Further Education come together with the private sector to secure a funding package which will help boost the economy, create new jobs and improve healthcare in South West Wales.

The bid is made up of three elements – energy, economic growth and health and wellbeing. ARCH forms the health and wellbeing strand.

The City Deal is first time that the NHS in Wales has been involved in a regional economic development project at this level. ARCH Board members have played an integral role in driving forward the City Deal proposition. Our aim is to access funding from Westminster which will allow this region to become a “living laboratory” for innovation.

It is estimated approval of the City Deal would deliver a £3.3billion boost to the regional economy over 15 years, generating over 9,500 new jobs.

£40million of City Deal funding would be dedicated to developing the health & wellbeing village in Llanelli while £15million would enable the first phase of the Morriston and Singleton health campus developments.

The City Deal bid, known as the Internet Coast proposal, will kick-start a new digital industry for the region focusing on a growing world market. The aim is to create a truly smart, efficient and connected region which can maximise innovation and digital technologies.

The ARCH partners aim to maximise the digital capability on offer through the deal to transform the way we deliver health care. Through the creation of the health & wellbeing schemes and the development of our health campuses, ARCH will maximise the world-class connectivity offered by the City Deal to create an integrated patient pathway and to strengthen links between healthcare providers, community, voluntary and local authority sectors and increase research capability across the region.

Case study: Electronic appointments

Morriston Hospital’s £60million outpatient is now using a self check-in service.

The self check-in kiosks allow patients to electronically scan their appointment card, their name then appears on a screen and patients are directed to a waiting area.

With over 1,000 outpatient appointments every day, there was a need to evolve a system that was future-proofed for the new building.

The solution was a fully integrated patient flow solution helping nurses, doctors and other staff effectively manage the entire patient journey, improving efficiencies and, most importantly, making the patient’s experience as positive as possible. The aim was also to develop better, more efficient ways of capturing patient data and making visits to the hospital as seamless as possible for patients.
Developing plans to ensure the stabilisation and sustainability of our NHS workforce is a key element of ARCH. However, the region itself can be used as an attractor to recruit new staff.

The power of the ARCH partnership brings many added value factors for all three partners. By working together, the university and health boards can help create an area which can attract encourage new partnerships and investment, become a leader in innovation and research, work across many sectors in an integrated way to meaningfully help improve the health and wellbeing of every person living here. We are also lucky to be able to showcase the unrivalled setting that is the South West Wales.

The world is now driven by rapid innovation, and these changes demand dynamic talent which can be rapidly configured and reconfigured. What is really important in this new era — is access to talent — and more importantly ownership of that talent. As a region we must be able to draw talented people in.

Personal mobility, connected markets, social media, mobile technology, and analytics are already the global forces which affect almost everyone in every industry. Doing business as if these forces don’t exist is like operating by gaslight. This means it’s time to reframe the way we do business.

We are entering a future where businesses will relocate to where the talent is — it is a complete shift in the way we must operate and communicate as a region. Wales has never faced this kind of challenge before — the “new world” is about attracting talent and retaining that talent right here in the ARCH region.

People, talented people, will be prepared to live here because of the quality of life. The place - and what it can offer - will attract talent. And South West Wales really is a great place to live!

Just think about our outstanding coastlines, Areas of Outstanding National Beauty, National Park – just some of our exceptional natural assets. This place ... this region, is the magnet for talent – but how can we offer them even more?

ARCH and the City Deal bid:
The unique ARCH collaboration which brings together health and science along with the Swansea Bay City Region City Deal bid, can be this region’s tools to attract - and keep talent not only within the NHS but across many sectors. We are to transform our economy we must secure talent.

The City Deal bid will kick start a new digital industry for the region focusing on a growing world market. We want the region to become a “living laboratory” — essentially a test bed for 5G Broadband.

The university offers us an amazing opportunity.

With the fantastic new Swansea University Bay Campus now open for business and the plans to create a £31 million Computational Foundry at the Fabian Way site as well as the University of Wales Trinity St David’s SA1 Innovation Zone well underway, we are in a prime position to start creating the future right here in South West Wales.

ARCH through the City Deal is working to create a new environment, capability and experience - fit for this ever demanding health and life science landscape and in an ever changing digital age. Any proposition such as this must always start with a compelling set of human issues – how can we make our region healthier, richer, more connected - and ultimately happier?

One of the main aims of the City Deal is to accelerate growth in our region for the benefit of the people who live here. We aim to create more well-paid jobs, more opportunity, deliver pioneering world-class healthcare, and ensure a better quality of life for you and your family.

People make any community work – we want to create an environment where everyone has the opportunity to realise their ambitions. We really do believe, that with a lot of hard work, some blue sky thinking and by working together, we really can start to create the future – right here in South West Wales.

Why work in ARCH region?
The region is characterised by an already vibrant life science sector and the close alignment of education, research, innovation and clinical care, puts us in an ideal position to compete in recruiting and retaining staff who can capitalise on opportunities for significant career progression in their chosen fields.

Both health boards are highly ambitious and are driven to deliver excellence. Staff will work and train in a highly innovative health service, with great opportunities for professional development and collaboration, and the support to drive innovation and service improvements for the benefit of patients.

Staff will benefit markedly from the full integration of primary, community and hospital care and the close co-operation with our local authorities and third and private sector partners, enabling a ‘whole clinical pathway’ approach that accounts not only for high-end interventions but also opportunities to get involved at the interface between healthcare and local communities in the form of prevention and early intervention.

ARCH builds substantially upon these solid foundations to transform further the way its staff delivers care, promotes wellbeing and develops its skills-set. It is fully committed to bringing care closer to people’s homes, to developing the next generation of doctors, nurses and healthcare workers, and to partnering first-class health, research and life science, with innovative approaches from our partners in leisure, the voluntary sector and beyond, to help people live healthy lives and to support our staff in delivering high-quality, multidisciplinary care.

ARCH brings together the region’s two University Health Boards and Wales’s number one university to create a future of unprecedented innovation and excellence, aimed at delivering better health, skills and economic outcomes for its population and excellent employment, training and research opportunities for its staff.

Tapping into the decade of success delivered through Swansea University’s Institute of Life Science (ILS) and the establishment and future expansion of the Joint Clinical Research Facility (J-CRF) staff will have unmissable opportunities to undertake world-class medical research and to work alongside a growing cluster of innovative life science and healthcare companies, and for our doctors to develop portfolio careers.

The development of the Service Transformation Programme will establish a culture of regional planning providing staff with opportunities to practice and deliver appropriate service models for a population of a million people.

While over time ARCH will enable a planned investment in our Health Campuses which will also ensure clinical staff are provided with state-of-the-art infrastructure. ARCH enables service delivery, research and innovation to be intertwined, so all staff with the ideas or concepts that will improve outcomes for the people of the region, the nation and further afield have a structure to support them to achieve their ideas.

This way ARCH will emphasise that South West Wales is a great place to develop your career and retain staff who want to work in the region.
A Regional Collaboration for Health: Portfolio Delivery Plan 2017

Service Transformation Vision & Aims:

The ARCH Service Transformation Programme will take a system approach to implement new service models based on population needs:
- Health and social care wellbeing schemes across the region. This network will capitalise on the latest advancements to help people access advice and connect to virtual support and treatment. It will support people to care for themselves and transform the way they access services, maximising the ability to receive their care at home or in the community;
- This new model will be based on GP cluster networks where a number of GP practices will work with a whole range of services (health, social and third sector) to bolster support for peoples homes and encourage greater personal responsibility for health;
- Digital exclusion will be addressed through the rollout of innovative healthcare solutions to allow people to monitor their own care at home and receive advice from healthcare professionals;
- Our regional network of local hospitals will provide the right level of care in the right setting;
- Establish Morriston Health Campus as the regional centre for acute and critical care;
- Develop new regional models for a number of fragile services;
- Develop elective facilities which can deliver higher throughput and drive down waiting times;
- Streamline patient pathways throughout the region to become more efficient, patient-focused, as well as reducing variability and improving sustainability of services.

The Service Transformation Programme will focus on what, when and how our population requires health and care support.

Services need to be based on what our populations need and with the least intervention possible using the principles of Prudent Health. This requires a different approach to how we currently deliver health and care services, and the organisational boundaries about who delivers that care and where. We need to change our system to provide services to meet the needs of local people and deliver better outcomes.

This means our plans have to be built around the current and future needs of the people who live in our communities. Hywel Dda and Abertawe Bro Morgannwg Health Boards have voluntarily come together and agreed to collaborate on several areas for regional solutions.

The need to change the way many of our clinical services are delivered is determined by five key weaknesses in the current infrastructure:

1. An inability to adequately cope with the rise in unscheduled demand – as manifested in long waits for treatment in Emergency Departments, overloaded services, long lengths of stay in hospital (often due to a lack of services out of hospital) and an ageing population with a high incidence of chronic disease who sometimes struggle to access the right service at the right time.
2. The rise in demand for elective services outstripping capacity, leading to longer waits for elective treatment.
3. Longstanding shortages in health personnel for certain specialties that drive up costs by having to use premium rate temporary staff and threaten the viability of services.
4. Service location reflecting historical decisions and patterns of working which are not always relevant to the needs of the population in the 21st Century.
5. The current service provides sub-optimal outcomes in some areas but overall is also spending more money than the budget allocated by Welsh Assembly Government.

The current service will support people to care for themselves and transform the way they access services, maximising the ability for them to receive their care at home or in the community, through digital solutions;

What approach will we take?

It is recognised new services, models and pathways will underpin much of the wholesale service change required. Through the Service Transformation Programme, a number of underlying service planning principles have been agreed that will need to underpin new service models. These include the need to:

- Address rurality and accessibility issues;
- Provide care as close as possible to home where practical;
- Help people take more responsibility of their own health and wellbeing;
- Target prevention as a presumption rather than waiting for health problems to appear;
- Digital solutions first;
- Unlock innovation in the NHS;
- Develop and maximise research excellence;
- Services must be safe and sustainable;
- Regional perspective where this is required to deliver a practical solution;
- Actively involve people and communities;
- Be able to attract talent and ensure the region takes ownership of retaining that talent;
- Reflect population needs;
- Work as a whole system.

What do we need to do next?

- Improve health and wellbeing and planning on the basis of our regional one million population, to support people to care for themselves and transform the way they access services, maximising the ability for them to receive their care at home or in the community, through digital solutions;
- Accelerate, across the entire region, new models of integrated care - across all settings to meet population needs and enable people to live healthier, independent lives which also allows us to stabilise and sustain primary care services;
- Enable our network of local hospitals to provide the right level of care in the right setting, supported by access to specialist advice and care from the regional acute centre of excellence;
- Develop a regional base for specialist services that provides a high class training environment for doctors, nurses and Allied Health Professionals leading research, innovation and training.

What does success look like?

- Putting the patient first and not letting organisational barriers get in the way;
- Stabilisation and then improvement of core clinical services throughout the region;
- Improved waiting times in Emergency Departments;
- Improved waiting times for elective procedures;
- Delivery of cancer wait times standards and improved outcomes;
- Improved access to primary care and more clinical care delivered locally rather than in hospitals;
- Reduction in unscheduled care admissions;
- Reduction of stay in hospital once acute care completed;
- Co-ordinated, evidence based care making use of technology and doing ‘what works’;
- Moving the two health boards back to financial sustainability;
- Ultimately an improved health & wellbeing status for the population.

What do we need to do next?

- Fully develop and implement the South West Wales Non-Surgical Cancer Strategy which will include a regional approach to addressing key shortages in the workforce.
- Developing a strategic case for development of the Regional Cancer Centre within Morriston Health Campus, undertake a scoping study with regard to a strategic intention for a satellite
service transformation

Service Transformation Programme: Tranche 1 Projects & Timelines

<table>
<thead>
<tr>
<th>Key</th>
<th>Scoping</th>
<th>Project Live</th>
<th>Handover</th>
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<tbody>
<tr>
<td>ST1 Regional Non-surgical Cancer Services: Developing South West Wales Non-surgical Cancer Strategy.</td>
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<td>ST2 Cardiology Services: Developing regional, integrated pathways to improve access to specialist care.</td>
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<td>ST3 Regional Ophthalmology Centre: Explore options to establish regional elective centre to serve ABMU &amp; Hywel Dda.</td>
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<td>ST4 Dermatology Services: Developing regional, integrated pathways to improve access to specialist care.</td>
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<td>ST5 Neurology Services: Developing regional, integrated pathways to improve access to specialist care.</td>
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<td>ST6 Vascular Services: Developing regional, integrated pathways to improve access to specialist care.</td>
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<tr>
<td>ST7 Interventional Radiology: Developing regional, integrated pathways to improve access to specialist care.</td>
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<td>ST7 Regional Pathology: Regional state-of-the-art facility for service, research, teaching.</td>
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<tr>
<td>ST8 Regional Stroke Model: Developing regional, integrated model to stroke centre.</td>
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<td>ST9 Standalone Orthopaedics: Regional facility: A dedicated unit for Morriston &amp; NPT elective activity.</td>
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<td>ST10 Morriston Enabling Site Development: Development of Morriston site to become acute hub.</td>
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<td>ST11 Combine Acute Medical take at Morriston Campus: Transfer medical take from Singleton to Morriston.</td>
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<td>ST12: Singleton Enabling Site Development: Establishing new model for admissions, rapid access to diagnostics to avoid admissions.</td>
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Service transformation

linear accelerator (LINAC) service to be provided in Hywel Dda; As part of a regional response to an improvement of stroke services establish a Hyper Acute Stroke Unit (HASU) at Morriston Health Campus; Significantly improve planned care within the region through establishing a standalone orthopaedic unit at Morriston Health Campus. The unit will provide a regional service for certain procedures – for example spinal surgery; Complete a feasibility study into a regional elective ophthalmology treatment facility to provide improved performance, quality and safety; Finalising and then implementing a new clinical model for combined acute medicine on Morriston Health Campus site which will include the transfer of acute inpatient medicine from Singleton to Morriston Health Campus; Develop out of hospital services to reduce reliance on secondary care and facilitate early discharge; Develop Pathology Laboratory services at Morriston Health Campus, ensuring local clinical service interfaces are maintained, with equitable access across the region. Agree a series of regional service models for dermatology, ophthalmology and orthopaedics; Deliver the first phase of Singleton to enable it to focus on admission avoidance and allow Medical School expansion; We will continue our essential planning work so that beyond the first tranche (0-3 years), we can achieve the following: Implement South West Wales cancer service including a regional cancer centre; Co-locate obstetric, neonatology, acute gynaecology, paediatric services for ABMU; Establish a new regional cardiac/cardiology centre at Morriston and Cardiac Catheter lab in Hywel Dda.

Service Transformation Programme: Tranche 1 Projects & Timelines

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<tr>
<td>ST13 Service Digitisation: Technology Enabled Care &amp; Citizen Held Portal.</td>
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<tr>
<td>ST14 Regional South West Cancer regional centre to serve ABMU &amp; Hywel Dda patients.</td>
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<td>ST15 Pharmacy Relocation inc Regional Asceptic: Regional aseptic facility to serve both ABMU &amp; HDa.</td>
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<td>ST16 Obstetrics/Neonatal &amp; Gynae relocation: Regional base for ABMU women’s &amp; children’s services, relocation of ABMU Obs, Neonatal, Gynae to Morriston.</td>
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<td>ST17 Paediatric Unit Relocation: Relocation of paeds unit at Morriston Health Campus.</td>
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<td>ST18 Cardiology/Cardiac Centre: Establish regional Cardiac Centre South West Wales.</td>
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<td>ST19: Major Trauma Centre: Establishing Morriston as major regional trauma centre.</td>
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**Wellbeing Vision & Aims:**

The Wellbeing Programme will make a quantifiable improvement to the health and wellbeing of the population of South West Wales, when compared with other regions. The programme will make a substantial contribution to:

- Contributing to the reduction of health inequalities between population groups;
- Affecting a tangible step-change in our approach to prevention and early intervention across all ARCH programmes;
- Reducing inappropriate demand on key healthcare services by influencing the key social determinants of health and supporting people to remain well within their communities.

“ARCH is a brilliant example of actually putting into practice the interconnections between social, economic, environmental and cultural wellbeing the Wellbeing of Future Generations Act requires. Health challenges will not be met by looking at the medical model alone”

**Wellbeing of Future Generations Commissioner Sophie Howe**

Wellbeing and wellbeing are inextricably linked; many of the drivers of better health such as income, housing and education, are the same as those associated with increased wellbeing.

Transforming the wellbeing of the ARCH population offers significant potential to address increased demand on health services and to fully embrace prevention and early intervention.

The three following work packages have been developed as areas for concerted project activity within this programme:

1. **Understanding**:
   - ARCH is developing a robust ‘Case for Change’. We will develop a thorough understanding and baseline level of health and wellbeing throughout the ARCH region. ARCH will then embark on a longitudinal evaluation of the impact on health and wellbeing of projects under the Wellbeing Programme and the service delivery changes to be implemented; a full report will be delivered in the Service Transformation Programme.

2. **Rebalancing**:
   - Development of a pan-region network of health & wellbeing schemes, which bring together education and enterprise capacity with multi-partner service provision to address health and wellbeing, focused around a re-balancing of services between hospital and community settings and between service providers.

3. **Preventing**:
   - Implementation of a programme assurance function throughout ARCH to ensure the application of a wellbeing focus to project activity. Develop an ARCH Wellbeing Bond to promote new partnerships that will deliver preventative programmes to reduce demand on the health service.

**What approach will we take?**

Our design principles fully embrace The Wellbeing of Future Generations Act (Wales) 2015 & The Social Services & Well-being Act (Wales) 2014. Specifically, the Wellbeing Programme will:

- Seek to address the wider determinants of health and wellbeing, such as employment and education where they manifest within a regional & local government context;
- Focus on issues and activities beyond the scope of any existing partnership to resolve or implement;
- Be driven directly by robust data linkage and analysis work;
- Scale up approaches which are securing improved wellbeing in one part of the region, to secure similar benefits for the region as a whole;
- Identify gaps in regional activities to improve wellbeing and adopt meaningful approaches to address them;
- Act as an assurance mechanism, supporting all programmes to adopt enhanced wellbeing, using a preventative and early intervention approach;
- Help partners to share risk, financial costs and benefits; to realise economies of scale when investing in initiatives to improve health and wellbeing.

**What will we do?**

1. Evaluate how the ARCH portfolio as a whole is impacting and improving the Wellbeing of the population of South West Wales;
2. Develop ARCH place-based regeneration projects, including developing the health and wellbeing centre model, which brings together service delivery, education and enterprise in local population contexts. We will develop specific projects in: Llanelli, Neath, Bridgend and Swansea; and are assessing the feasibility of schemes in Hywel Dda area;
3. Develop an investment model for early intervention and prevention, including assessing the feasibility of a region-wide Wellbeing Bond based on the Social Impact Bonds that have been successfully developed in other parts of the UK.

**Wellbeing scheme as part of the Swansea City Centre Digital District;**

1. Develop and enhance the Neath and Bridgend Health & Wellbeing schemes;
2. Actively explore the development of further Health & Wellbeing schemes in each of the Hywel Dda counties;
3. Implement a Regional Wellbeing Social Impact Bond;
4. Establish the Regional Wellbeing Intelligence Centre.

**Beyond the first tranche (years 0-3) we will:**

- Rollout the Health & Wellbeing Schemes to other areas in the region;
- Expand the reach of the Regional Social Impact Bond.

**What is a Health & Wellbeing scheme?**

The Health & Wellbeing schemes will be tailored to meet local needs, and will be called different things such as a village or hub or centre, but for them to be considered by the ARCH partners they will have the following characteristics:

- Deliver and support new models of care - the models will address some or all of population, community, primary, secondary or regional health and social care provision;
- Create enhanced care environments;
- Offer patients access to 21st Century healthcare in a community setting;
- Provide innovative education and skills programmes delivered by FE and HE at the schemes to equip current and future generations to deliver new service delivery models;
- Increase and maximise high-quality research, innovation and enterprise, with the potential for R.E.&I activity to translate clinical research into economic benefit through IP generation, incubation and commercialisation;
- Develop strong cross sector partnerships and ensure co-location with other services;
- Deliver a powerful and positive influence on people’s emotional, mental and physical health and wellbeing;
- Provide GPs with an opportunity to specialise and offer advice and treatments on conditions previously dealt with in a hospital setting;
- Maximise digital technology systems and processes to allow seamless flow of advice and information between people, the schemes and health & wellbeing services delivered in other settings;
- Accelerate current investment strategies, allowing partners to come together and target investments and activity at scale and pace.
## A Regional Collaboration for Health: Portfolio Delivery Plan 2017

### Wellbeing Programme: Tranche 1 Projects & Timelines

<table>
<thead>
<tr>
<th>W1: Understanding: Case for Change: Develop the ARCH Case for Change through a systematic regional health and wellbeing assessment.</th>
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<tr>
<th>W2: Understanding: Evaluation capability: Aligned work with the Prudent Healthcare Intelligence Unit to provide longitudinal linked data platform using SAIL data.</th>
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<th>W3: Rebalancing: Llanelli Wellness &amp; Life Science Village: Includes a Wellness Hub, Sports Academy, Wellness Hotel, Neuro Rehab Village, Outdoor Wellbeing, research capability.</th>
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<th>W5: Rebalancing: Swansea City H&amp;W Scheme: State-of-the-art facility which integrates healthcare, wellbeing, research with training facilities.</th>
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<th>W6: Rebalancing: Bridgend H&amp;W Scheme: Multi-agency partnership will co-locate primary &amp; community care with rehab &amp; therapy services, ILS satellite.</th>
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<th>W8 &amp; W9: Preventing: Prevention/Early intervention and Social Impact Bonds: Initial focus on obesity and develop investment model for prevention, including a regional Wellbeing Bond.</th>
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### City Deal case study: The Swansea Bay City Region has put a proposal together for UK and Welsh Government to secure a multi-million pound funding package.

The City Deal aims to accelerate growth in our region for the benefit of the people who live here, creating more well-paid jobs, more opportunity, deliver pioneering world-class healthcare, and ensure a better quality of life for our population. A City Deal, can accelerate ARCH projects such as the Llanelli Wellness & Life Science Village at Delta Lakes.

The village is one example of what can be delivered by our regional Health & Wellbeing schemes. The Llanelli Village will receive £40 million of City Deal funding.

The project will improve the prosperity of the local area by creating life science and health employment and investment opportunities based around primary and community care, educational facilities, leisure and tourism facilities.

### Health & Wellbeing Academy:

The Health & Wellbeing Academy is an innovative concept which encapsulates everything ARCH aims to achieve in terms of transforming the way the NHS delivers care and allowing students get hands on patient experience.

The Academy which opened in early 2017 at the Singleton Campus aims to ease pressure on the health service. It is a unique approach aimed at improving health and wellbeing through a range of treatments and alternative ways for patients to manage their care. It will also help improve care for patients who face delays in diagnosis and assessments by providing them with alternative options.

Led by the College for Human and Health Science, the Academy will assist primary care by taking referrals for assessment. It will also enrich the experience of students by providing new opportunities for students including patient interaction.

Phase one of the academy is now live with future phases looking to scale up and roll out the concept across the ARCH region. The Llanelli Village is just one of the health & wellbeing schemes which will house an academy within the development.
A Regional Collaboration for Health: Portfolio Delivery Plan 2017

R,E&I Vision & Aims:
The Research, Enterprise & Innovation Programme will create and undertake regional, world-leading, multidisciplinary, collaborative, research, to drive an ecosystem of vibrant life sciences & health activity to deliver improved health, wellbeing and prosperity for current and future generations:

- Develop the region as a living laboratory which would allow close to a million people to participate in clinical research and trials offering a unique capability to global companies and independent enterprises;

- Kick-start a culture change to ensure the region can capitalise on the open innovation system, to deliver economic benefits and improved health and wellbeing;

- Consolidate and expand successful collaborations and partnership working with the public and private sector;

- "The ARCH AgorIP project is a practical example of how we are helping to drive forward new concepts and research to grow our knowledge economy”

Finance Secretary
Prof Mark Drakeford

- The programme will establish the region as a globally significant actor for integrated open innovation in health;

- Innovate within the health and life science sector to develop entrepreneurial and innovation skills;

- Support the development of an integrated innovation network across the partnership for creation, capture and commercialisation of new knowledge;

- Identify opportunities for the development and retention of Intellectual property (IP);

- Manage and co-ordinate the development of MediPark;

The region needs to sustain and create new employment, whilst at the same time, driving productivity and growth.

If we grow our employment base as forecast to 2030, and over that time, return to 90 per cent of the UK’s productivity level, where we traditionally been, then we would be a £15 billion economy. If we could match the UK level, we would be a £15 billion economy, around 30% larger than if we stand still. Through the R,E, & I programme and its specific projects, we will contribute to this goal.

The aim of the R,E, & I Programme is to effectively drive the delivery of R,E, & I activity on behalf of the three partners.

What approach will we take?
We aim to increase R,E, &I opportunities in the region. Therefore, appropriate planning principles have been used to design our projects, all aligned with the following:

- Swansea Bay City Region (SBCR) aims to develop the region into a globally relevant area for open innovation in health & wellbeing;

- UK Government’s Strategy for UK Life Sciences aims to stimulate innovation and growth for start-ups and SMEs through to large global enterprises;

- UK Government’s Innovation UK – Digital Economy Strategy to encourage innovators in different sectors to share knowledge, develop common approaches and translate experience from other industries;

- Welsh Government’s Innovation Wales Strategy seeks to build up on established infrastructure by creating and accelerating new economic development and skills opportunities for the region;

- Welsh Government’s Economic Renewal Programme encourages more innovative approaches across the health sector through collaboration;

- The Wellbeing of Future Generations Act wants Wales to be the best place to live, learn, work and do business in the future;

- The Catapult Programme – transforming the UK’s capability for innovation in specific areas, and help drive economic growth.

What will we do?
1. Embed an open access, open innovation framework to support clinicians, postgraduate and the wider R&D community in the commercialisation of ideas, driving innovation from university health boards and Higher Education institutions and across our region into enterprises, with absorptive capacity to bring them effectively to market.

2. Develop the ILS MediPark, propelling the Institute of Life Science (ILS) from its current business incubator role to one of a science park network. Currently constrained at Swansea University Singleton campus, the ILS will expand to reach across the health and wellbeing campus and villages network.

3. Establish the regional expansion of the Joint-Clinical Research Facility (J-CRF). J-CRF is an innovative construct and would become the single portal for all clinical research within the ARCH region. It will provide an important platform for translation of research into clinical innovation.

For patient and economic benefit. J-CRF will become the vehicle for championing innovation and Intellectual Property (IP) from ABMU and Hywel Dda Health Boards through the university’s innovation system enabling commercialisation and thereby contributing to the regional and wider economies. We will expand J-CRF to enhance its capacity and capability to undertake a broader and larger portfolio of projects.

4. Establish a joint pathway from further education and higher education into the health and life science economy, fostering a culture of innovation and entrepreneurship.

What have we already done?
- Established the Joint Clinical Research Facility demonstrating that the concept works ahead of scaling up across the region;

- Phase 1 of establishing a joint IP harmonisation policy across the three partner organisations an enabling foundation for research, enterprise and innovation in our region;

- Secured £11.5million of funding from Welsh European Partnership Programme (SBCR) aims to develop the ILS Data Science Centre at Singleton Morriston Health Campus and the Swansea University Health and Wellbeing Campus and villages.

- Created the ILS provision at Singleton Health Campus;

- Established an ILS Data Science Centre at Singleton Campus including the establishment of a Prudential Health Unit linking health board to Big Data including the SAIL Database;

- Developed the R,E, & I components of the Health and Wellbeing Academy which went live in January 2017;

- Completion of the ILS Data Science Centre at Singleton Campus including the establishment of a Prudential Health Unit linking health board to Big Data including the SAIL Database;

- Created two Institute of Life Sciences (ILS), which have created 800 highly-skilled jobs and secured £42 million of investment;

What does success look like?
Within 5 years we will:
- Establish an ILS @ Morriston Health Campus;
- Establish an ILS @ Llanelli Wellness & Life Science Village;
- Expanding the ILS provision at Singleton Health Campus;
- Expanded the J-CRF at Morriston Health Campus;
- Established a J-CRF at Llanelli;
- Maximized the regional open innovation framework.

We will also:
- Support the creation of 2,563 jobs in Life Science, Health and associated sectors in the first 10 years;

- Increase GVA in the South West Wales economy by £347 million in the first 10 years;

- Develop a further 50 research collaborations between academic, clinical and industrial research partners;

- Creation of a further 25 new enterprises within the ILS ecosystem, together with significant inward investment;

- Increase registered IP opportunities and progress new ideas through experimental and industrial development ensuring further investment into research;

- Improve research links across the ARCH region by expanding the number and breadth of trials open to health boards;

- Assist with the delivery of a multi-professional learning and training environment to develop and support a talented workforce; designed to recruit, inspire and

What is MediPark?
Swansea University’s Healthcare Technology Centre (HTC) is a core component of the ARCH MediPark vision. The ILS has already created new businesses and highly skilled jobs over past 10 years, ARCH aims to upscale this success through MediPark. It will focus on science and technology and will help:

- Grow the Medical School’s under and postgraduate student numbers;

- Support the growth of research scale, quality, environment and impact cases to sustain strong REF performance;

- Create diversification of income through greater attraction of industrial and other income;

- Enhance facilities;

- Provide a platform for companies, researchers and students;

- Support growth of the regional Health Technology Network by catalysing the development of products, processes and services;
A Regional Collaboration for Health: Portfolio Delivery Plan 2017

research, enterprise & innovation

retain the best talent;

Facilitate the development of wider and new funding streams, including private sector investment for research and innovation.

What do we need to do next?

1. Deliver next phase (Phase 1) of the Singleton Health Campus specifically the Health Technology Centre (HTC);
2. Deliver (Phase 1) of Morriston Health Campus specifically ILS@Morriston;
3. Work with BDP master site planners to develop & integrate MediPark components of Morriston Health Campus;
4. Submit to Welsh European Funding Office £5million submission for the expansion of health technology network in our region;
5. Initiate the development of the Institute of Life Science (ILS) in the Hywel Dda region;
6. Establish Precision Medicine Catapult satellite within South West Wales;
7. Regional expansion of the Joint Clinical Research Facility (J-CRF).

Rural communities

J-CRF expansion: Clinical trials are a vital tool for healthcare. Without this evidence, there is a risk people could be given treatments with no advantage, waste NHS resources, and which might even be harmful. Regional expansion of the J-CRF will enhance its capacity and capability to undertake a larger portfolio of projects. The Hywel Dda population will be able to positively take part and feed into important research. Regional expansion will see increased trials, recruitment and project delivery across the entire ARCH region.

City Deal case study: Unlocking innovation within the NHS

The Swansea Bay City Region has put a proposal together for UK and Welsh Government to secure a multi-million pound funding package.

The City Deal can accelerate ARCH projects such as AgorIP. The aim of AgorIP is to unlock innovation in the NHS and to provide a support service to drive this innovation and realise the huge value from IP generated across ARCH region. It will provide a support framework to bring ideas to market and support our health boards in realising their commercial value.

AgorIP will open a pipeline of untapped valuable opportunities to work with researchers and NHS staff to disclose concepts with development potential. AgorIP is a £13.5milion EU-supported scheme which brings together clinicians, academics, and industry to pioneer research into cutting-edge technologies.

Led by Swansea University through ARCH, AgorIP will work with NHS and industrial collaborators across North and West Wales and the South Wales Valleys to turn innovative research into new products, processes and services.

An example of how this works in practice is the work being carried out by ABMU’s Rehab Engineering Unit. Dr Lorna Tasker and her team are developing an app to improve patient care and reduce the huge challenges caused by pressure ulcers.

The app is being developed in partnership with Welsh Government and Fujitsu and will provide accessible expert advice to prevent ulcers getting worse and to promote healing without surgery, allow clinicians to remotely screen patients and help decide who needs to be seen most urgently.

PROJECT BACKING: Finance Secretary Professor Mark Drakeford (centre) announces the £13.5million AgorIP project with ARCH’s Professor Marc Clement (right) and Gerry Ronan, Swansea University’s Director of Commercialisation.
implementation: governance

We acknowledge the breadth and ambition of ARCH and recognise that a portfolio of this scale requires excellence in governance. To that end, the ARCH Board requested the governance structure was externally reviewed in August / September 2016 to ensure that current governance processes were efficient and fit for purpose, and to recommend changes required as ARCH moves into a new phase (post approval of the PDP).

Much of this new structure has been approved by the partners and is already in operation. In order for effective management and accountability across the portfolio we have established an ARCH Portfolio Board (PB) which meets monthly. The PB has delegated authority from the sovereign partner organisations to oversee, co-ordinate, and review the strategic direction of the ARCH portfolio.

The ARCH Board is supported by the Delivery Leadership Group (DLG) that meets weekly and is chaired by the Portfolio Director.

The DLG oversees the delivery of the ARCH portfolio of projects. The DLG reports directly to the board and onto the governing bodies of each sovereign partner organisation and the Welsh NHS Wales/Welsh Government

*Westminster (for City Deal)

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*Westminster (for City Deal)

implementation: governance

Government to provide assurance against the delivery of these areas. The ARCH portfolio consists of four ARCH programmes.

Their purpose is to develop, drive delivery and monitor progress of their respective ARCH projects. The programmes are co-chaired by senior executives from across the partnership.

The PMO has two key functions:

- **Keeping score**: This involves maintaining a suite of tools, processes and governance structures to report, monitor and govern the delivery of programmes.
- **Supporting delivery**: This involves providing a flexible and focused resource to support individual project managers in the delivery of their schemes. As well as providing a “challenge” role, this includes supporting the sharing of good practice across the portfolio and, where necessary, the reallocation of targeted resources to accelerate the delivery of projects.

**Portfolio assurance:**

We have established Portfolio Assurance which is our discipline to provide an independent and objective oversight of the future performance of our major projects.

The appropriate people who have a responsibility and accountability for sanctioning, financing and monitoring our projects (DLG and the programme chairs) have had to consider the information they have available to them to help reduce risk, resolve issues and limit the chances of project failure. As part of our overall approach to assurance we will also use the important existing mechanisms across the region, such as the Community Health Councils (CHCs) in both health boards. We will also test with our colleagues in the CHCs all projects that involve new service models or service changes.

We recognise ARCH has a significant rural population, therefore another key assurance function is to consider major projects from a rural perspective. As such, we have established a Rural Assurance which meets regularly to ensure we are addressing the needs of our rural communities. This will ensure equity to access of services, along with improving the health care and wellbeing outcomes of people living across our entire region.

The Rural Assurance Board will ensure all ARCH activity is “rural proofed” via Rural Assurance Criteria being developed at the time of writing. The board will consider the impact and implications of issues faced by rural communities are often different from those in urban areas.

Tracking progress across the portfolio:

To support all the projects we have established a standardised Portfolio Management Framework that ensures there is standardised project documentation and clear project approval processes.

This approval process includes clear and validated criteria describing what constitutes an ARCH project and how a project receives its mandate.

As projects progress through each stage of development our Portfolio Management Office review the content of all PID and business case stages, prior to executive review (through DLG) to ensure the information presented is accurate and of high enough quality to clearly capture the aims of the project, milestones, risks and interdependencies.

The PMO has central oversight and responsibility and accountability for project assurance which is our discipline to consider the appropriateness of schemes for approval (through EMG, PB) and further approval (through PB and Partner Boards).

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The ARCH partners have adopted an "engaged approach" through 2016. Engagement builds on the work carried out through the strategic programmes Changing for the Better in ABMU and Your Health, Your Future in Hywel Dda health boards.

These extensive engagement programmes were launched in 2012 to listen and engage with our populations with regard to service change in response to our growing and changing need that the health economy across Wales is facing.

We are working across the three partner organisations to ensure:
- Key stakeholders are clear on the direction and aims of the ARCH partnership
- We encourage early to produce higher-quality outcomes
- Involve the right people at the right time
- Use the right channels and tools to create constructive conversations and as the portfolio moves forward demonstrate impact to show involvement has been influential in the evolution of the portfolio and its related programmes of work.

ARCH has worked with a range of key stakeholders across our region within the health and social care sector, under the following areas:
- The ARCH vision and aims
- The direction of ARCH and the service changes we are proposing
- The scope of projects included in the ARCH Portfolio
- The principles of co-production embedded in ARCH and our commitment to turn intent into practice.

Early on in the life of ARCH six collaborative teams were established representing Service Transformation, Skills & Education, Wellbeing, RE&I, Rural Communities and Infrastructure.

The teams were made up of cross-sector, multi-organisational membership and were brought together to provide not only stakeholder reference and engagement but to provide strategic direction and advice, work with the PMO to develop a list of projects and challenge assumptions about how health and social care is delivered, who delivers it and where it takes place.

The Collaborative Teams were crucial in the design stage of the ARCH portfolio. Membership was carefully selected from key stakeholders and influencers within the health & life science sector.

The teams also allowed ARCH to begin to bring the principles of co-production to life and proved to be a key part of our engagement process to date.

By sharing our thinking early on in the life of ARCH and working closely with our stakeholders we determined to ensure they are part of building and realising our vision for the future of health in South West Wales. Within each of the ARCH Programme Initiation Documents (PIDs) we outline our specific deliverables in years one, two and three and higher level deliverables for years four, five and beyond. This will ensure we can continue to engage on these projects which will allow us to review, refine and if necessary refresh our work in reflecting changing needs.

Appendix 2 lists all the projects the ARCH Board will be accountable for over the first three years.

We have developed 14 engagement objectives which have guided our approach (see appendix 12), these include:
- Building public awareness of the challenges faced by providers of health and care
- Build awareness of ARCH journey, aims and vision and intentions
- Engage with clinicians and senior team members to ensure clearly aligned priorities are delivered through ARCH
- Gather feedback and insights to inform ARCH projects, partner strategies and any future plans

We carried out ARCH stakeholder mapping which identified our core stakeholders for this first developmental phase of ARCH.

Our key stakeholders were identified within the following sectors: Health Service, Education & Academia, Government, other Public Sectors, Private Sector and the Third Sector. For a full list of stakeholders we have engaged with over the past 12 months and a full engagement calendar (see appendix 12)

ARCH held its flagship engagement event on October 14, 2016 bringing together over 250 stakeholders from across NHS, academia, industry, Welsh Government, local authorities and the third sector.

The event updated key stakeholders on the progress of the ARCH partnership and also allowed us to engage with them on the next phase of projects ARCH will deliver in this region.

Among the high-profile speakers were the Secretary for Public Health and Social Care Rebecca Evans AM, the Wellbeing of Future Generations Commissioner Sophie Howe, Adam Roberts, head epidemiologist from the Health Foundation Health Foundation, The Health Foundation’s report Path to Sustainability was discussed during a productive debate which featured panelists such as Hywel Dda University Health Board’s deputy CEO Joe Teape, Public Health Wales’s Professor Ronan Lyons, Hywel Dda Director of R&D Professor Keir Lewis and The Bevan Commission’s chair Sir Mansel Aylward.

We carried out a series of workshops focused on the ARCH programmes of work. Stakeholders were asked to consider the following areas:
- Do you agree with the strategic priorities as set out by the four programmes?
- Are you agreed with the planning principles used by the ARCH Portfolio?
- What is missing? Are there any gaps which have not been identified?
- What is currently taking place in your area/ organisation which could potentially be scaled up and rolled out to benefit health services, skills and education development, improve population wellbeing or increase R&E?

Key points raised include:
- R,E, & I:
  - Innovation needs to filter down into social care sector as well as health & life science sector
  - With Welsh Government funding now limited – looking at other funding routes and partnerships is now critical
  - How can we support health professionals to be involved in R&D due to workloads? There is a need to backfill their clinical work to allow this innovation & research to flourish;
  - Transparent IP process needed which is centralised for all ARCH partners (per project, per partner);
- Regular regional conferences, round tables and workshops will help set the local research agenda in line with ARCH projects/aims;
- Increased and consistent future public engagement to stimulate new and impactful research;
- Need to create new facilities as “test beds” across region for innovating and testing new ways of working;
- Encourage diversity of people/sectors to work together – find ways to encourage innovation at all levels of the health economy;
- NHS has potential to drive economic prospects of region by linking with ILS capability.

Skills & Education:
- Talent Bank is really positive for future workforce planning – need to ensure there is removal of red tape to allow true integration;
- Must consider multiple entry routes to training, such as vocational, apprentice, HE and distance/E-learning with placement;
- Must continue to ensure FE is fully aligned to ARCH aims;
- Rotate staff throughout the community to ensure upskilling, job satisfaction;
- An increase in student numbers and breadth of courses must be aligned with corresponding job opportunities within region;
- Maximising the “digital economy” will only work if our population are digitally literate and there is the infrastructure to support it – across whole of region;
- In the future how can ARCH collaborate with more potential partners across more sectors;
- GEN curriculum review – potential of community content in curriculum, ARCH is a opportunity for change;
- Curriculum for Talent Bank could be adopted more widely i.e. develop content focused on different aspects of health & wellbeing; and,
- Developing apprenticeships in health sector.

Service Transformation:
- Local care should be rapid care;
- Transfers need to be more agile in system;
- Think differently, include social capacity – it’s about community resilience and community; ownership – contributing to their own solutions
- If wellbeing is the priority, need to make sure services from Tier 0 to tertiary; and,
- Co-produce these services from Tier 0 to tertiary.

How has engagement help shape the portfolio?

In July 2015, a Wellness Round Table was held attended by 37 leaders in six fields from across medical, policy and business professors and researchers, government, private and third sector. The Round Table identified the key interventions Wales could make a leader in wellness among small nations.

The Llandelli Wellness & Life Science Village idea was conceived as a direct result of the Round Table. It developed through ideas and innovations discussed during and after the event. The engagement with such a diverse group revealed the complete alignment of vision from all partners and the added value a collaborative approach could deliver.

The Round Table report made seven recommendations:
1. Train a new generation of life scientists in wellbeing and wellness.
2. Spur inter-governmental and public-private collaborations.
3. Embed a culture of wellness;
4. Develop wellness tourism for a world that increasingly craves what Wales offers;
5. Bring life science and tourism together;
6. Focus on everyday “settings”; and,
7. Appoint a Minister of Wellness.

The Llandelli Wellness & Life Science Village addresses recommendations 1-6 very clearly. The
CAPTURING ENGAGEMENT: The key themes from the ARCH flagship engagement event were captured in this visual graphic. Visual illustrator Eleanor Beer created the visual representation of the discussions, feedback and engagement throughout the event.

7th was for Wales to appoint a dedicated Minster of Wellness. In last year’s Welsh Assembly election 7th was for Wales to appoint a dedicated Minster of Services was changed to Cabinet Secretary for Health, Sport and Wellbeing and Wales has now also appointed a Wellbeing of Future Generations Commissioner.

Carmarthenshire Councillor Meryl Gravell, who is chair of the ARCH Wellbeing Programme has been a driving force in not only developing the idea for the wellness village, but in making sure it is delivered. Councillor Gravell said: “We knew as a council that we needed to invest in building a new leisure centre facility in Llanelli.

“Following the round table event which discussed the wellness agenda in Wales, we saw an opportunity to work together and think in very a different way. Now we are proving that when we work together with an open mind – anything is possible.”

Skills & Education: Recent engagement across the ARCH partner’s key corporate departments and with our wider stakeholders has helped develop the first tranche project list for the programme. Specifically engaging ABM and Hywel Dda University Health Board finance, strategy and planning departments has brought to fore the importance of tackling the variable pay issue associated with workforce recruitment issues.

Following these conversations, direct engagement has now taken place between Workforce, Education and Development Services (WEDS) which has resulted in the development of Skills & Education projects SE17, 18, & 19 (see page 33) namely: Increasing Medical School numbers (GEM) respectively.

This approach of fully engaging with both internal and external stakeholders has been a cornerstone of the evolution of the ARCH Skills & Education Programme. Engagement, testing and validation of project ideas has been a constant element with stakeholders such as local authorities (social care), primary care practitioners, NWIS, WEDS, WAST, FE and HE (over and above Swansea University) being involved in said programme activity.

Service Transformation: The Regional Pathology Service project is progressing at pace. Engagement between internal and external stakeholders has allowed ARCH to help partners reach consensus, broker the position between two health boards and Public Health Wales.

Additionally, engagement has (and continues to) take place with Swansea University’s Medical School and NHS pathology colleagues, in the development of a Biomedical Science qualification and a flexibly taught MSc in Medical Education.

Research, Enterprise & Innovation: The ARCH partners made the case to include health and wellbeing within the Swansea Bay City Region City Deal proposal. Through continued engagement across the region with local authorities, private sector and wider stakeholders, the R&E component of ARCH and its wider health & wellbeing agenda is now an integral part of City Deal.

As part of this process we have led the engagement with each of the 6 Public Service Boards (PSBs) across our region which has demonstrated how this work intergrates with their own wellbeing remit and linking it back to other projects within ARCH such as Wellbeing Case for Change and the Health & Wellbeing schemes.

The PDP has set out how our four interdependent programmes meet the vision of transforming the Health, Wealth and Wellbeing of South West Wales.

Many of these projects listed will require no additional approval or support from Welsh Government rather they will require the two health boards and the university to work differently to deliver change. The ARCH Board has mandated these projects and will now be accountable for their delivery.

There are however a number of projects that require appropriate support from government in order to progress.

1. We are requesting to continue our regional plan to develop health and wellbeing schemes at a number of sites in South West Wales. We want to work with government to develop a robust alternative financial model (“Public, Private, Partnership”) as a pace setter which we believe has the potential to be utilised across Wales. We will require appropriate support to develop this model. In appendix 16 we have detailed what support we think is required;

2. Continued departmental government support for the WEFO (Welsh European Funding Organisation) Innovation Health Technology Network bid, which is currently progressing through the application phase. This will support the development of the Health Technology Centres in Singleton and at Llanelli;

3. Support to stabilise the current workforce deficits and develop a sustainable workforce in the long term that widens access and retains current staff. ARCH wants to be a pace setter for the new commissioning landscape emerging through the creation of Health Education Wales (HEW). To that end, we request Welsh Government support with the expansion of both the Graduate Entry Medical (GEM) and Physician Associate courses as well as permission to work with Workforce, Education and Development Services (WEDS) to increase the number of nurses who are trained each year. We seek support for both, the steps that the university is taking to increase recruitment of welsh domiciled students and the retention of those trained within the Welsh workforce;

4. At the heart of the ARCH Portfolio is the commitment to work regionally to transform our health services. We have identified a series of services which the two health boards are committed to develop as regional services. In some
cases the drive for clinical and financial sustainabil-
ity will require specific investment in infrastructure, we
will submit to government Strategic Outline
Business Cases for the following services in the first
quarter of 2017/18:
  a. Regional Pathology Centre
  b. Regional Orthopaedic Centre
  c. Combined Acute Medical Facility.

These new facilities will be set in Morriston Health
Campus the master site plan of which has now
been completed. Support is now required to prepare
detailed service and capital planning and legal,
financial and commercial frameworks required to
prepare a Programme Business Case for the
Morriston Health Campus Site, ahead of develop-
tment.

Therefore with appropriate support from Welsh
Government we will develop a strategic case for
Morriston Health Campus including all the
preparation required to develop a Public, Private
Partnership (PPP) to fund the development of the
site. In appendix 23-27 we have detailed the sup-
port we think is required.

The effective management of the ARCH Portfo-
lio has required clear accountability between
partners and our appropriate stakeholders.
This has required the management of the overall
portfolio to have sufficient, suitably skilled
leadership, in order to recognise risk, understand
interdependencies and manage the critical timeline
that has already been set out in this document.

ARCH is managed as a single portfolio divided into
four programmes delivering their benefits locally,
regionally and nationally. As already described each
programme will comprise 15 to 20 individual
projects and initiatives, all interlinked into a
coherent programme and portfolio.

An appropriately resourced PMO, led by a Portfolio
Director has already enabled the programme to
progress with effective management, co-ordination
and delivery within the ambitious and appropriate
timescale. The strength of ARCH has been to give
the three partner’s a vehicle to develop joint
solutions which meet the challenges we face across
the health & life science economy in South West
Wales. This has been facilitated by the ARCH
Portfolio Management Office (PMO). We request
continued support for the ARCH PMO as set out in

With the appropriate support from Welsh
Government, for a 12-month period starting in
April 2017 (or following agreement of the PDP by
Government) the ARCH partners will:

- Develop an Outline Business Case for a "bundle"
of health & wellbeing schemes which would include
the preferred financial model for delivery;
- Develop a Strategic Programme Business Case
for the Morriston Health Campus;
- Deliver Strategic and Outline Business Cases for:
  -Regional Pathology Centre;
  -Standalone Orthopaedic Centre;
  -Combined Acute Medical Facility.

Over the next four pages we will illustrate our ARCH
roadmap. The chart (see pages 56-59) does not
show every project, but it does demonstrate our
critical path of project delivery which will enable
change in other parts of the ARCH Portfolio and
the wider health and life science ecosystem. Our
roadmap shows when we plan our projects to
complete the different stages of development,
and when the project will be handed over to “business
as usual”.

It shows where projects are interdependent on each
other and the sequence with which projects will
be delivered. The roadmap also demonstrates the
breadth of ARCH and the interdependencies
between different projects. Delays in the
development, implementation or decision-making
on a number of critical projects within the portfolio
will lead to an amplification of delay with potentially
terminal effects to projects in later quarters or future
tranches.

The ARCH Board has deployed the PMO and an
appropriate management system to reduce the risk
of these delays and is committed to making timely
decisions. We value the scrutiny and due diligence
projects are required to go through before they can
be approved, we recognise that this leads to the
better use of the public pound and more effective
decision making. We want to work with Government
and key stakeholders to ensure we can
demonstrate a new way of delivering change at the
pace our population, patients, clinicians, private
sector partners expect, require and deserve.

Example of time-urgent process with the ARCH portfolio:

-Our estate transformed from service provision
to teaching space

-Time-urgent process due to interdependencies
  between projects within tranche 1

-Increasing student numbers

-Increasing permanent staff reducing variable pay

February - December 2016:
-Planning of ARCH Portfolio
-Detailed planning of tranche 1 projects
-Delivery of ARCH Phase 0 (pathfinder projects)

January 2017 - September 2018:
-All tranche 1 projects
  mandated and live including:
  *Completed Outline Business Cases for
  appropriate projects
  *Projects across 4 programmes completed
  and handed over to business as usual
  *Detailed planning work completed to
  prepare Morriston Health Campus ahead
  of development
  *Detailed planning/prep for tranche 2
  projects

Pre-February 2016:
-Combining ARCH partner organisational strategies
to develop ARCH prospectus
-Identifying pathfinder projects
A Regional Collaboration for Health: Portfolio Delivery Plan 2017

Implementation: Roadmap

**Llanelli Wellness Village**
- Site Master Planning
- Securing of Finance
- Full Business Case
- Outline Planning permission
- Link to increase in medical school recruitment GEM

**Skills & Education**
- Regional Workforce Planning
- Health & Wellbeing Academy
- Increase in Medical School Numbers - Non GEM
- GP/Primary Care Academy prep
- Nurse Recruitment & Training prep
- Talent Bank commences
- Physician’s Associates commences
- Overseas Nurses CPD prep
- School of Pharmacy

**Research, Enterprise & Innovation**
- AGOR-IP commenced
- J-CRF Commenced
- ILS@Morrison
- ILS@Singleton Commenced
- HTC@Singleton Commenced
- ILS@Hywel Dda

**Roadmap Key**
- Wellbeing
- Skills & Workforce
- Service Transformation
- REI
- Complete

**Singleton Health Campus**
- Projects
  - Business Case
  - 5 Implement moves to Singleton
  - 6 4-6 demountable wards
  - 7 New therapies accommodation
  - 8 Morrston New Car Park
  - 9 Morrston new car park
  - 10 New HSDU
  - 11 Complete therapies and MSK
  - 12 Extended critical care space
  - 13 CT Scanner
  - 14 Pathology move to Morriston
  - 15 Centralised medical take & new stoke model for Swansea

**Singleton & Llanelli**
- Various Sites across the region

**Projects**
- 1 Temporary car park
- 2 Singleton Enabling Site
- 3 Aseptic Unit in place
- 4 New surgical model for Singleton
- 5 New admissions unit
- 6 New MRI scanner
- 7 Medical move to Morriston
- 8 SUMs in to Pathology
- 9 Ambulatory Care unit

**Roadmap**
- 2017/18
- Q1 Q2 Q3 Q4
- 2018/19
- Q1 Q2 Q3 Q4
- 2019
- Q1 Q2

- 2020/21
- Q3 Q4
- 2021/22+
- 2022/23
- 2023/24
- 2024/25
- 2025/26

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**Roadmap**
- Implementation: Roadmap
ARCH brings together four powerful strands:
- **Skills & Education**
- **Service Transformation**
- **Wellbeing**
- **Research, Enterprise and Innovation**

Quantifiable improvement within all four of these areas will lead to both direct and indirect benefits to the wellbeing of the population within the region. The aim of this section is to provide a high-level indication of the extent of benefits that are likely to emerge as a result of the ARCH programme, using the four strands as the basis for such an analysis.

**Wellbeing:**

The metric that is widely used to demonstrate improvements in patient outcomes, in general terms, is that of the quality adjusted life year (QALY). One QALY equates to one year of perfect health and is a fundamental requirement of health technology assessments in UK settings, with widespread application across other healthcare systems. The table below presents a series of scenarios that highlight the potential value added as a result of QALY gains arising from the seventeen schemes that comprise the ARCH service transformation programme. The current value attached to one QALY equates to £20,000.

The scenarios have been developed to take account of potential QALY gains, the time taken to generate such gains, and the value placed on a QALY gain (which, to err on the conservative side, is lower than the accepted NICE threshold value). The first row therefore depicts the position whereby 10% of the ARCH population each ‘receive’ an additional one year of perfect health, which is valued at £10,000 and which will require 5, 10 or 25 years to be delivered – and conservatively basing these estimates on the gains being achieved at the end of these time periods.

If every person within the ARCH region were to benefit to the extent of one additional year of perfect health, the value attached to that was £20,000 (as per NICE threshold) and these were generated within a 10-year timescale the potential value added would equate to £14.18 billion.

Given the number of areas classed as being in the most deprived communities in both ABMU and Hywel Dda University Health Boards, and the differential between rich and poor communities in terms of health life expectancy approaching 20 years for males and 18 years for females within ABMU, for example, these estimates are aligned to those generated by the Public Health Wales Observatory.

It has been estimated that reducing overall mortality from circulatory disease to levels seen in the least deprived areas of Wales would increase life expectancy in the most deprived areas by 1.5 years in males and 1.3 years in females, while similar gains could be made if cancer mortality rates were reduced (1.3 years in males, 1.2 in females). Further, reducing excess deaths from external causes (e.g. accidents, suicide) could have a particularly large effect on males living in the most deprived areas, potentially adding nearly a year to their life expectancy.

**Service Transformation:**

The proposed model of care places the patient at its centre and works together with patients and people to co-produce healthier people and communities and deliver better outcomes that matter to people.

We will work with our population to develop local values, focused on the health of our communities. Working with the wider public, third and private sectors, the health boards will implement new regional service models based on the principle of care being provided closer to home.

Expanding access through the development of new infrastructure and redeploying and redeploying the use of existing infrastructure will radically transform patient pathways across the region. The success indicators for this particular strand are highlighted on page 29. The achievement of these is likely to secure improvements in patient outcomes and narrowing of health inequalities that currently exist across the region.

Furthermore both health boards (and particularly Hywel Dda) are trying to maintain services which in the long term could lead to financial gains. For example, these estimates are aligned to those generated by the Public Health Wales Observatory.

In the South West Wales economy by £347 million over the same period.

**Research, Enterprise and Innovation:**

The Research, Enterprise and Innovation (R,E&I) strand builds on the successes achieved by the ILS network – whereby 800 skilled jobs and £42 million of investment have been secured. The expectation is that delivery of the nine schemes within the R,E&I strand will translate to an additional 2,563 jobs in the life sciences sector within 10 years and an increase GVA in the South West Wales economy by £347 million over the same period.

The scenarios have been developed to take account of potential QALY gains, the time taken to generate such gains, and the value placed on a QALY gain (which, to err on the conservative side, is lower than the accepted NICE threshold value). A 10% improvement would result in a net benefit of £1.25 million, and this would be in addition to the reduction in locum and agency costs incurred due to supply deficits.

Further, utilising resources released from the variable pay budgets from paying premium rate agencies, coupled with a determination to increase education and training budgets to facilitate short-term and medium-long-term increases in the supply of staff, will generate significant returns on investment.

**Skills & Education:**

£620 million.

The Evans Review - Health Professions Education Investment Review - highlighted that the rate of return on investment in higher education and training of health professions workforce in Wales was sub-optimal. With supply shortages across many professions and grades being a major cause of concern, coupled with recruitment problems and sickness rates resulting in significant sums being used to finance agency and locum provision across all health boards, which in relation to ABMU and Hywel Dda have amounted to nearly £96 million over the past three years.

Expenditure to support health professionals’ education and training in Wales currently amounts to £390 million per annum, but with considerable variation in the cost to educate and train healthcare professionals – for example, the cost of training a medical student to registration has been estimated to be £235,000, while for a physiotherapist the estimated cost is £88,000 and £79,000 for a nurse. However, it has been estimated that, for example, 33% of Welsh medical graduates pursue their postgraduate courses outside Wales, while a similar percentage of those who undertook their medical training in Wales moved away for their first career post.

To illustrate this a £9 million investment – only 10% of the current expenditure on agency and locum staff – in staff development will produce an additional supply of 112 nurse registrants, and 132 physiotherapists (for example).

There are also short-term measures that can be implemented to increase supply of registered workforce, with appropriate funding being offered to health care support workers, for example, to acquire registrant status.

These new employees will gradually reduce the expenditure on variable pay, resulting in a stability and sustainability of workforce that will be aligned to the population needs of the region.

The above illustrate the considerable benefits of investing in workforce development and increasing the pool of potential labour to the region.

This section highlights the huge gains that are potentially available from delivery of ARCH and the pressing need to take a more joined-up approach to the problems each of the four programme areas faces.

### Portfolio Delivery Plan 2017

**Value of 1 year of perfect health (£)**

<table>
<thead>
<tr>
<th>No residents who will benefit from additional 1 year of perfect health</th>
<th>5 years</th>
<th>10 years</th>
<th>25 years</th>
<th>5 years</th>
<th>10 years</th>
<th>25 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>100,000</td>
<td>10,000</td>
<td>842m</td>
<td>709m</td>
<td>438m</td>
<td>1.26bn</td>
<td>1.06bn</td>
</tr>
<tr>
<td>100,000</td>
<td>15,000</td>
<td>1.68bn</td>
<td>1.42bn</td>
<td>876m</td>
<td>2.53bn</td>
<td>2.13bn</td>
</tr>
<tr>
<td>500,000</td>
<td>10,000</td>
<td>4.21bn</td>
<td>3.54bn</td>
<td>2.19bn</td>
<td>6.31bn</td>
<td>5.32bn</td>
</tr>
<tr>
<td>500,000</td>
<td>15,000</td>
<td>6.31bn</td>
<td>5.32bn</td>
<td>3.28bn</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
benefit & impact

“ARCH is a unique proposition which can provide a pioneering framework to deliver Welsh Government’s commitment to create a Wales which is prosperous and secure, healthy and active, ambitious and learning, united and connected”

To deliver Welsh Government’s key priorities ambitious measures are required, aimed at making a difference to everyone, at every stage of their life which will involve working across traditional boundaries.

ARCH’s ethos is based on collaboration to find innovative ways of working. The Wellbeing of Future Generations Act offers Wales a unique opportunity to work collectively as a region in a meaningful way and with a long-term view.

ARCH sees itself as the vehicle to deliver this pioneering framework to work differently and engage with others to develop innovative solutions to the challenges that we face.

If everyone within ARCH region were to benefit, to the extent of 1 additional year of perfect health, the value attached to that was £20,000 and these were generated within 10 years timescale the potential value added would equate to £14.18bn.

Delivery of the 9 projects within the R,E&I Programme will translate into an additional 2,563 jobs in life science sector within 10 years with an increase in GVA of South West Wales economy by £347million.

If ARCH Skills & Education Programme projects were to generate a 5% improvement in retention of graduates and those who remain in Wales to pursue their careers; the net benefit generated would be in the region of £670,000.

Example projects:
- Graduate Medical Entry;
- Nurse Training (indirect commissioning with WEDS);
- Graduate Nurse Recruitment;
- Overseas Nurse Re-registration;
- GP & Health & Wellbeing Academy;
- Talent Bank.

Benefits:
- An agreed workforce plan for whole health economy of South West Wales;
- A stabilised workforce with a significant reduction in the number vacancies in the region;
- More Welsh domiciled students studying in the appropriate health & life science courses in region;
- Widened access demonstrated through increase in number of 16-18 year olds studying/training on health and life science courses;
- Exploiting life science training opportunities in bioscience, pharmaceuticals and tech such as those in the human genome and genetics;
- Innovation in diagnostics/treatment/robotics and tech.

Example projects:
- Develop regional service models including:
  - Cardiology
  - Dermatology
  - Non-surgical Cancer
  - Pathology
  - Stroke
  - Orthopaedics

Benefits:
- Stabilisation of core clinical services;
- Accelerate new regional models of integrated care;
- Enable our network of local hospitals to provide right level of care in the right setting, supported by access to specialist advice and care from the regional acute centre;
- Improved waiting times in Emergency Departments;
- Improved access to primary care;
- More clinical care locally rather than in hospitals;
- Reduction in unscheduled care admissions;
- Reduction of hospital stay once acute care completed.

Example projects:
- Health & Wellbeing schemes (each individual scheme represents a project)
  - Neath
  - Bridgend
  - Swansea
  - Plus currently working through a number of Hywel Dda area schemes

Benefits:
- Providing an objective, forward looking evidence-base and impact measurement to inform all ARCH projects;
- Addressing key social determinants and inequalities in health and wellbeing, through the development of health and wellbeing schemes across the region;
- A series of individual schemes networked together across the region, providing seamless access to services closer to home, helping people stay well in their communities and avoiding inappropriate visits to hospitals.

Example projects:
- Phase1 of the Singleton Health Campus specifically Health Technology Centre (HTC);
- Phase1 of Morriston Health Campus specifically ILS@Morriston;
- Initiate the development of ILS in the Hywel Dda region;
- Establish Precision Medicine Catapult satellite;
- Expand IP Commercialisation;
- Regional expansion of the Joint Clinical Research Facility (J-CRF).

Benefits:
- Support the creation of 2,563 jobs in health & life science sectors in the first 10 years;
- Increase GVA in the South West Wales economy by £347million in the first 10 years;
- Develop a further 50 research collaborations between academic, clinical and industrial research partners;
- Creation of a further 25 new enterprises within the ILS ecosystem, together with significant inward investment;
- Increase registered IP opportunities;
- Improve research links across region by expanding the number and breadth of trials open to health boards;
- Facilitate development of wider/new funding streams, incl private sector investment for research and innovation.
Some larger finance has been secured through the strategic positioning of the ARCH Portfolio by ARCH Portfolio Board members.

**ARCH capital projects:**

It order to shape the funding and financing proposals ARCH has appointed Price waterhouse and Coopers (PwC) to advise in respect to the different financing options that might be available to ARCH to deliver a number of the health and wellbeing programmes.

The ARCH Portfolio comprises a significant number of projects; however, for the purposes of assessing financing options the focus has been on those schemes that involve significant capital expenditure.

### Some projects already fully or partially financed and source of funding:

<table>
<thead>
<tr>
<th>Project</th>
<th>Indicative Funding</th>
<th>Funding source</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILS @ Hywel Dda part of the Llanelli Wellness &amp; Life Science Village</td>
<td>£40million (split across ILS @ Hywel Dda and Education in Hywel Dda)</td>
<td>Swansea Bay City Deal</td>
</tr>
<tr>
<td>Education Centre in Hywel Dda (part of Llanelli Wellness &amp; Life Science Village)</td>
<td>£40million (split across ILS @ Hywel Dda and Education in Hywel Dda)</td>
<td>Swansea Bay City Deal</td>
</tr>
<tr>
<td>Related Llanelli Wellness &amp; Life Science Village projects, eg: assisted living village &amp; wellness hotel</td>
<td>£150million</td>
<td>Carmarthenshire County Council (£12million land value) &amp; private sector</td>
</tr>
<tr>
<td>ILS @ Morriston</td>
<td>£15million</td>
<td>Swansea Bay City Deal</td>
</tr>
<tr>
<td>Agor-IP</td>
<td>£13million</td>
<td>WEFO and Welsh Government</td>
</tr>
<tr>
<td>Health &amp; Wellbeing Academy Singleton Campus</td>
<td>£1million</td>
<td>College of Human &amp; Health Science at Swansea University</td>
</tr>
<tr>
<td>Physician Associates Phase 1</td>
<td>£650,000</td>
<td>WEDS</td>
</tr>
<tr>
<td>Talent Bank</td>
<td>£2million</td>
<td>Private sector (Fujitsu)</td>
</tr>
</tbody>
</table>

N.B. Currently progressing a WEFO application for the expansion of the Health Technology Centre Network for South West Wales. C=£8million

Tranche one of the ARCH proposals contains c. 50 different projects, the projects divided across the four ARCH programmes.

The breadth of the portfolio makes it likely that there will be a plurality of financing and funding mechanisms in order to deliver the full range of projects. Since submitting the ARCH prospectus in July 2019 the ARCH Portfolio Board has already been successful in securing funding for some of its projects. A number of these projects have been smaller in size but have demonstrated a flexibility across the collaboration enabling them to take place.

Some larger finance has been secured through the strategic positioning of the ARCH Portfolio by ARCH Portfolio Board members.

**Overview of financing options:**

### Potential financing structures:

Based on the objectives and constraints we have identified through developing the ARCH Portfolio, current market conditions and models that have been explored on similar schemes, a shortlist of potential financing structures has been identified. These are:

1. Capital grant from NHS Wales (or another public sector source);
2. Corporate or ‘On-balance sheet’ borrowing by one of the ARCH members;
3. Use of a Public Private Partnership (PPP) structure; and,
4. Real estate based financing.

Each of the structures is outlined in more detail in the full PwC report which is included in the supporting technical document. The table on p69 summarises their comparative features. In addition to these constraints, by its very nature, the total indebtedness of any institution is limited by Higher Education Funding Council of Wales (HEFCW) regulations as well as an assessment by the institution of the sustainability of any corporate debt. Swansea University already has a number of corporate debt arrangements in place to support other strategic priorities. We understand the university does not have significant headroom for additional borrowing without requiring further approval from HEFCW.

While the position of the university may mean that it is able to provide relatively small amounts of finance to specific schemes, this is going to be limited to the ARCH schemes that deliver the greatest return to the University which are likely to be those involving further development of the Singleton Campus.

### Corporate lending:

For most corporate entities that are looking to raise finance, their default position would be to enter into corporate loans which are supported by the balance sheet of the individual entity.

Typically, this type of lending is the most straightforward to put in place and, depending on the structure (tenor, quantum, etc.) of the debt relative to the borrower can be implemented in a relatively short time period. However, all three members of ARCH operate under significant constraints in respect of entering into corporate debt.

These are:

-Health boards are not permitted to enter into corporate debt arrangements; and,
-While universities do have significantly more freedom, the total indebtedness of any institution is limited by Higher Education Funding Council of Wales (HEFCF) regulations across England and Scotland over the last decade.

For most corporate entities that are looking to raise finance, their default position would be to enter into corporate loans which are supported by the balance sheet of the individual entity.

Typically, this type of lending is the most straightforward to put in place and, depending on the structure (tenor, quantum, etc.) of the debt relative to the borrower can be implemented in a relatively short time period. However, all three members of ARCH operate under significant constraints in respect of entering into corporate debt.

These are:

-Health boards are not permitted to enter into corporate debt arrangements; and,
-While universities do have significantly more freedom, the total indebtedness of any institution is limited by Higher Education Funding Council of Wales (HEFCF) regulations across England and Scotland over the last decade.

### Public Private Partnership (PPP):

PPP models have been used as the basis for a significant proportion of health care investment across England and Scotland over the last decade.

In additon, it should be noted that ABMU has an existing Private Finance Initiative (a type of PPP) contract in place.

PPP covers a wide variety of potential delivery.
models but generally have a number of common characteristics:

- The public sector enters into a contract with a partner. The scope of this contract varies from scheme to scheme but typically includes a requirement to build, finance and maintain a new construction;
- Generally, the public sector retains ownership of the land and the PPP provider has a licence to access the land (although this could change if required);
- Typically, the building reverts to the public sector at the end of the PPP period;
- The PPP provider will arrange the financing of the scheme. This is likely to be a mixture of equity and debt financing;
- Typically a Special Purpose Vehicle will be established. This will act as the contractual counterparty with the public sector as well as being the vehicle through which finance is raised; and,
- A Project Agreement is entered into which sets out each party’s rights and responsibilities.

Crucially, PPP schemes have the potential, if appropriately structured, to be considered ‘off balance sheet’ at the national accounts level. This means that they will be accounted for against future revenue budgets rather than counting as an allocation against capital budgets. It should be noted though, that the vast majority of PPP schemes will still be ‘on balance sheet’ for a health board or university (or local authority) that has entered into this type of arrangement.

Based on experience from other healthcare projects, there are a number of criteria which would typically indicate if a scheme is suitable for procuring through a PPP model. These include:

- Capital value per PPP contract of £25+ m to offset comparatively high set up costs;
- Limited transfer of existing buildings with potential latent defects, etc. as part of the contract;
- Ability to determine service requirement for the medium-long term; and,
- Limited and managed interfaces with other service providers/parts of the estate.

In addition to the considerations above, there are a number of different areas that would need to be explored as part of a business case for developing a PPP. These would include:

- Developing the details of the commercial model. This would include risk allocation and the scope of services to be provided by the PPP partner; Preparing a procurement strategy;
- Engaging and testing the market to establish deliverability;
- Developing a public sector comparator to test the value for money position of adopting a PPP route.

Real estate-based lending: Lending that is based on the underlying value of the real estate involved in a transaction is one option for ARCH to consider and is an area that public sector bodies are increasingly looking to explore.

Where this model has traditionally been used in the health sector is in a situation where an individual body has entered into a standard tenancy arrangement for a specific building (e.g. for a GP practice). This may then facilitate a third party developer in obtaining some form of real estate financing. While this approach may be suitable for some projects in the ARCH Portfolio, there is a fundamental distinction between an option where ARCH is acting as a tenant and where it is looking to initiate a development programme. When a real estate based financing opportunity is being assessed by a potential finance provider, there are a number of criteria that they will typically assess in reviewing an opportunity.

These include:
- The development mix and the split between residential, commercial, retail and other uses;
- The market for any residential properties including potential rental and private-for-sale market;
- Presence of any ‘anchor’ tenants who will enter into long term lease arrangements for parts of the development, ideally in advance of financing being committed; and,
- The market for sourcing tenants for any parts of the site that do not have tenants identified in advance.

A public sector body (such as any of the ARCH partners) would be regarded as a very high quality counter party for any lease type arrangement and a typical real estate lender would gladly lend based on a public sector covenant. However, for a specific scheme to be viable (in the absence of an alternative use) this lease would likely need to be of a long term nature. It would be anticipated that there would be some relationship between the length of the lease and the annual rent that would be paid.

The very nature of real estate based financing means that the opportunity and the possible structure will be heavily dependent on the specifics of an individual site. Notwithstanding this, there are a number of typical characteristics that accompany this model:
- Transfer of free hold or long leasehold (99+ years) to the finance provider;
- Debt typically provides up to c. 65% of the total cost so equity also required (although some funds are able to offer a structure where debt/equity has been consolidated at fund level);
- Rent typically increase in line with inflation; and,
- Relatively few restrictive covenants in respect to the development of a site and future options.

Depending on individual sites and requirements, real estate based finance has the potential to open up new models for health care delivery. However, the model has the potential to be most effective when the health body is able to give up surplus land to cross-subsidise a development where there is a clear development case. The relatively low land values of the region mean that there will only be a small number of sites where this is going to be a viable solution.

Sources of finance: The main sources of finance that have been discussed as part of this exercise are:

- Commercial banks;
- Public bonds; and,
- Private placements.

The typical features and preferences of each of these different instruments are shown in the table below:

Alternatives include:

- European Investment Bank (EIB) – the EIB has been a significant lender to UK infrastructure projects in recent years and is generally able to offer a lower cost debt than a commercial provider. EIB has a policy position that it is only able to lend up to 50% of the development cost while its approvals process can be time consuming and onerous. Swansea University has existing lending arrangements in place with EIB.

The impact of the UK leaving the European Union on EIB’s activity in the UK is not currently understood and the position with respect to EIB and the UK should be reviewed as the financing plan for individual projects is prepared;

- Sovereign Wealth Funds (SWFs) – SWFs represent a potential source of finance for projects of the type that the ARCH partnership is envisaging; and,
- Local Authority (LA) – LAs are able to access debt markets without the same constraints that operate for Health Boards. Traditionally LAs have used the Public Works Loan Board (PWLB) to obtain loans. PWLB is able to provide long tenor fixed rate debt at low (under 1%) margins over the underlying gilt rate. The process of obtaining funds is quick and relatively diligence light. Increasingly LAs have examined other ways of raising finance with some (e.g. Aberdeen) having raised public bonds.

Preferred financing options: Initial proposals: The table (on page 68) summarises the preferred financing option for each of the schemes for the purposes of the PDP. This will need to be reviewed and tested as the business case for each individual project is developed.

NHS Wales capital schemes: It is proposed that Regional Pathology, Standalone Orthopaedics and the Relocation of Acute Medicine will all be subject to applications for NHS Wales capital funding. This reflects the fact that:

- There is a requirement for the Regional Pathology scheme to progress over the next 12 months. Given the Health Boards will be the contracting party for

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### Characteristic

<table>
<thead>
<tr>
<th>Source of funds</th>
<th>Commercial Bank</th>
<th>Public Bond</th>
<th>Private placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible to index link?</td>
<td>Yes - experience of all structures</td>
<td>Yes - although rarely used</td>
<td>Yes - experience of all structures</td>
</tr>
<tr>
<td>Fixed or floating debt?</td>
<td>Floating (but often swap interest rates)</td>
<td>Fixed rate</td>
<td>Fixed rate</td>
</tr>
<tr>
<td>Typical size of loan</td>
<td>Up to £75 million per bank</td>
<td>£25-£150 million</td>
<td>£25-£150 million</td>
</tr>
<tr>
<td>Optimal length of loan</td>
<td>Up to 12-15 years</td>
<td>20-30 years</td>
<td>20-35 years</td>
</tr>
<tr>
<td>Transfer of property interest</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Requirement for credit rating</td>
<td>No</td>
<td>Yes (usually 2)</td>
<td>Varies (generally 1 rating)</td>
</tr>
<tr>
<td>Drawdown</td>
<td>Staggered drawdown</td>
<td>Single</td>
<td>Potential for staggered but at a cost</td>
</tr>
<tr>
<td>Flexibility/ Break costs</td>
<td>Most flexible</td>
<td>Limited flexibility</td>
<td>Repayment penalties</td>
</tr>
<tr>
<td>Time to put in place</td>
<td>3 months</td>
<td>6 months</td>
<td>Mid</td>
</tr>
<tr>
<td>Ongoing margin (NB: ignores transaction costs)</td>
<td>Mid</td>
<td>Lowest</td>
<td>Mid</td>
</tr>
</tbody>
</table>
Alternative structures are considered unlikely to be suitable for the Morriston site as the capital requirement is in excess of available capital budgets. ABMU is not able to raise corporate finance and the specialist and constrained nature of the site means that any sort of real estate/lease based model is unlikely to be viable.

It should be noted that there are a number of infrastructure works, most notably a road, that are required to unlock the site to enable development. These are likely to need to be capital funded and as the site plans develop a separate financing stream will be required to cover these costs.

**Health & Wellbeing schemes:**
It is clear that the Wellbeing schemes being proposed under the ARCH model vary significantly in their scale and scope. In the case of the Swansea Wellbeing scheme, it is clear that the scheme is part of a wider regeneration proposal encompassing the establishment of the City’s Digital District. Swansea Council is the sponsoring public sector body for this scheme and it is understood that they will have responsibility for developing the proposals with the ARCH members supporting the proposals and then entering into a commercial arrangement for the specific parts of the site they will use (likely on a traditional rental basis).

The financing of the whole scheme will be dependent on Swansea Council’s overarching objectives but is likely to include a real estate based component.

The other Wellbeing schemes are expected to be smaller developments and will need to be initiated and co-ordinated by ARCH members. As part of the business cases for individual sites, the potential opportunity for any real estate based structure where, for instance, residential units are constructed which are able to subsidise the costs (either upfront or ongoing) of the Wellbeing schemes should be explored. However, it is recognised that the property markets in the vicinity of the proposed Wellbeing schemes is not particularly strong and site constraints may limit the deliverability of this option.

Therefore, it is believed that the most suitable way to utilise innovative financing to deliver a programme of Wellbeing schemes would be through the utilisation of a PPP programme. On a standalone basis, the size of the individual schemes are unlikely to be sufficient to support a PPP project with procurement and transaction costs making the transactions unviable.

However, there could be the potential to develop a batched model for delivering the Wellbeing schemes through a PPP structure. There are a number of elements that would need to be considered but the structure could involve:

- Procurement of a partner on a regional level;
- Partner responsible for design, build, finance and operating schemes (scope of operations to be discussed);
- Initial contract and financing includes the schemes that are mature at that point in time as well as agreeing principles for future schemes;
- Development of a set of standard designs to control costs and allow for transparency in pricing future schemes;
- Partner has a preferred equity provider and undertakes a senior debt funding competition for each tranche of financing;
- Contracting relationship at a regional level with suitable contract management and governance arrangements established; and,
- Potential to be used for other accommodation projects (e.g. school schemes).

**Singleton Campus Phase 2**
Further development of the Singleton Campus is dependent on the delivery of a number of ARCH’s other projects and, in particular, the transfer of NHS services away from the Singleton site in order to make this area available for university development. Notwithstanding this, given there is a desire to increase co-location on the Singleton Campus within an expanded Institute of life sciences, it is plausible that any development would be able to generate an income stream from commercial tenants.

Whether this would be sufficient to provide a commercial return for a lender would need to be assessed once proposals are more mature but it is likely that some form of real estate based financing model could be employed.

**Summary of features:**
The table below aims to summarise some of the key features of each of the different structures.

This information is intended to be indicative and could vary depending on the model that is proposed. There will also be examples of specific projects which contain elements of each of these financing structures. For instance, there are examples of PPP schemes that have been put in place for the area of a development that will have public sector occupier whilst the remainder of the development has been for private sector occupiers and therefore been financed on a real estate basis.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Corporate</th>
<th>PPP</th>
<th>Real estate based lending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical size of project</td>
<td>Flexible - capped based on balance sheet capacity</td>
<td>C~£25-£500million+</td>
<td>£10million+</td>
</tr>
<tr>
<td>Length of arrangement</td>
<td>Flex ible</td>
<td>20-30 years</td>
<td>Long term (30+ years)</td>
</tr>
<tr>
<td>On-balance sheet for national accounts</td>
<td>Yes</td>
<td>Generally no</td>
<td>Generally no for development but any lease may be</td>
</tr>
<tr>
<td>Transfer of property interests</td>
<td>No</td>
<td>No - licence</td>
<td>Yes - long leasehold for freehold</td>
</tr>
<tr>
<td>Require third party equity</td>
<td>No</td>
<td>Yes</td>
<td>Dependent on structure</td>
</tr>
<tr>
<td>Transfer of service provision</td>
<td>No</td>
<td>Generally hard FM/ lifecycle</td>
<td>Dependent on structure</td>
</tr>
<tr>
<td>How is debt repaid?</td>
<td>Debit service directly to service provider</td>
<td>Unitary charge (or equivalent)</td>
<td>Lease payments (generally inflation linked)</td>
</tr>
<tr>
<td>Transfer of development risk</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Management of availability</td>
<td>N/A - retained fully</td>
<td>Through payment mechanism</td>
<td>Through lease arrangements</td>
</tr>
</tbody>
</table>
ARCH (A Regional Collaboration for Health) is made up of Abertawe Bro Morgannwg University Health Board, Hywel Dda University Health Board and Swansea University.