ARCH
A Regional Collaboration for Health

Prospectus:
A World-Class Health and Wellbeing Economy for the South West Wales Region

June 2015
# A Regional Collaboration for Health (ARCH)

## Prospectus Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary</td>
<td>1</td>
</tr>
<tr>
<td>1. Vision</td>
<td>3</td>
</tr>
<tr>
<td>2. National and Regional Context</td>
<td>4</td>
</tr>
<tr>
<td>3. Partners and Stakeholders</td>
<td>6</td>
</tr>
<tr>
<td>4. Aims</td>
<td>8</td>
</tr>
<tr>
<td>5. The Collaborative Construct</td>
<td>9</td>
</tr>
<tr>
<td>6. Health Service Provision</td>
<td>10</td>
</tr>
<tr>
<td>6.1 ARCH – The Whole System</td>
<td>10</td>
</tr>
<tr>
<td>6.2 ABM &amp; Hywel Dda University Health Boards</td>
<td>11</td>
</tr>
<tr>
<td>6.3 Health Service Need</td>
<td>13</td>
</tr>
<tr>
<td>6.4 Health and Wellbeing</td>
<td>14</td>
</tr>
<tr>
<td>6.5 Primary and Community Care</td>
<td>15</td>
</tr>
<tr>
<td>6.6 Singleton Health Campus</td>
<td>16</td>
</tr>
<tr>
<td>6.7 Morriston Health Campus</td>
<td>19</td>
</tr>
<tr>
<td>6.8 Precision and Personalised Medicine</td>
<td>22</td>
</tr>
<tr>
<td>6.9 Public Health Wales</td>
<td>23</td>
</tr>
<tr>
<td>6.10 South West Wales Cancer Service</td>
<td>24</td>
</tr>
<tr>
<td>6.11 Welsh Ambulance Services Trust</td>
<td>25</td>
</tr>
<tr>
<td>6.12 Centre of Excellence for Cardiovascular, Bariatric, Thoracic &amp; Reconstructive Surgery</td>
<td>26</td>
</tr>
<tr>
<td>6.13 Collaborative Healthcare Management</td>
<td>27</td>
</tr>
<tr>
<td>7. Economic Development: ILS Medi-Park</td>
<td>28</td>
</tr>
<tr>
<td>7.1 ILS Medi-Park Concept Across the Health Campuses</td>
<td>28</td>
</tr>
<tr>
<td>7.2 International Partnerships of Excellence</td>
<td>29</td>
</tr>
<tr>
<td>7.3 Healthcare Technology Centre (HTC) and Joint Clinical Research Facility (J-CRF)</td>
<td>29</td>
</tr>
<tr>
<td>7.4 Guest@ILS</td>
<td>30</td>
</tr>
<tr>
<td>7.5 Health &amp; Wellbeing Centre</td>
<td>31</td>
</tr>
<tr>
<td>7.6 Healthcare and Life Science Skills Centre</td>
<td>32</td>
</tr>
<tr>
<td>8. The Skilled Workforce</td>
<td>33</td>
</tr>
<tr>
<td>8.1 Context</td>
<td>33</td>
</tr>
<tr>
<td>8.2 The Changes Required</td>
<td>34</td>
</tr>
<tr>
<td>8.3 Education and Talent Development</td>
<td>35</td>
</tr>
</tbody>
</table>
## Prospectus Contents (Continued)

9. Rural Health 36
   9.1 Wales Centre for Rural Health 36

10. Bevan Academy for Leadership & Innovation 37
   10.1 Context 37
   10.2 Wales Prudent Health Centre 38

11. The ARCH Programme 39
   11.1 Site Developments and Planning 39
       11.1.1 Morriston Health Campus 39
       11.1.2 Singleton Health Campus 40
       11.1.3 Hywel Dda Health Campus 41
   11.2 Finance 42
       11.2.1 Financing Principles 42
       11.2.2 Maximising Component and Collaborative Benefits 42
       11.2.3 Managing Successful Programmes (MSP) 43
       11.2.4 Financial Arrangements 43
       11.2.5 Estimated Capital costs 43
       11.2.6 Disposal Strategy 43
   11.3 Governance and Leadership 44
   11.4 Programme Management 45
   11.5 Risk Management 46
       11.5.1 Risk Management Policy 46
       11.5.2 Risk Appetite 46
       11.5.3 Risk Management Cycle 46
       11.5.4 Risk, Assumptions, Issues, Decisions Log 46
   11.6 Benefits and Impact 47
       11.6.1 Healthcare 48
       11.6.2 People and Communities 48
       11.6.3 Health Economy 48
       11.6.4 Workforce 48
       11.6.5 Research and Science 48
       11.6.6 Regional Economy 48
       11.6.7 Wales’ Reputation 48
Executive Summary
ARCH: A Regional Collaboration for Health

An integrated, open, collaborative medical and life sciences regional ecosystem, delivering high quality patient care, developing doctors, healthcare 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 and beyond.

1. Abertawe Bro Morgannwg University Health Board (ABMU) and Hywel Dda University Health Board (Hywel Dda UHB) have been invited by Welsh Government to propose a transformative plan for an integrated healthcare service that reflects the current and future demands of the region.
2. The NHS in Wales faces challenges of population and workforce demography, chronic disease, expectation and technological advance which demand a bold “paradigm shift” in service provision with an urgent need for primary and community-based care and service reconfiguration for sustainability and excellence.
3. “Prudent healthcare has to be more than an idea and more than a set of principles. It has to change the way health services are used and provided. It has to make a real practical difference to the broad sweep of those millions of encounters which take place every year between Welsh people and their health service.” Prof. Mark Drakeford, Minster for Health and Social Services, Welsh Government.
4. Reducing health inequality, improved quality of care and access to services, greater efficiencies and patient focus through prudent healthcare and the attraction and retention of leading professionals will represent key healthcare benefits. The expanded science base will produce economic outputs that will result in long-term, sustainable impact.
5. Collaborative investment strategies including the use of Innovative Finance will lever investment into the region making the programme a sustainable health, education, science, innovation and translation endeavour.
6. ABMU, Hywel Dda UHB and Swansea University (SU), through ARCH will further enhance the reputation of the region and Wales as a centre of excellence in service delivery, research, education and innovation in Healthcare and Life Sciences, through a carefully planned and managed brand strategy for the long-term benefit of the communities they serve.
7. The Welsh Government’s Department of Economy, Science and Transport has identified Life Sciences as a key economic sector. Building on this the Ministers, Mrs. Edwina Hart and Prof. Mark Drakeford have stressed the need to develop the positive dynamic between the economy and health.
8. The ABMU and SU Partnership Board, established in 2012, has already delivered a Joint Clinical Research Facility, a common Intellectual Property and Commercialisation Policy and collaborative education and skills development. Building on this, the parties are now embarking upon A Regional Collaboration for Health (ARCH).
9. Swansea University’s Colleges of Medicine and Human & Health Science jointly are developing the concept of ILS MediPark to build upon the successes of the first decade of the ILS initiative. The recent Research Excellence Framework confirmed the world-class nature of the research and translation undertaken in the two Colleges with, for example, the College of Medicine being rated second of ninety five throughout the UK in its unit of assessment.
10. Through a vertically-integrated skills and education strategy across clinical and non-clinical professions, ARCH will focus on the development and retention of a talented and dynamic workforce for both ABMU and Hywel Dda UHB and the wider Life Sciences and Health regional ecosystem that recognises the challenges of rural healthcare as well as urban.

Benefits of ARCH
- More Care provided closer to people’s home
- Keeping People Well longer
- More care being delivered in the appropriate setting
- Preventing people from dying prematurely
- Improved quality of life for people with long-term conditions
- Improved outcomes for people recovering from episodes of ill health or injury
- Appropriate care provided in specialist centre
- Improved patient / carer experience of care,
- Improved environments for the safe care and treatment of people protecting them from avoidable harm
- Increased efficiencies
- Improved access to services
- Long term sustainable multi professional workforce
- Increase in high skill jobs,
- Increase in new companies,
- Increase % of growing companies,
- Increase intellectual property,
- Improved investment,
- Improved market capitalisation
- Increase in research income,
- International centres of excellence,
- Increase in academic publications,
- Increased research impact,
- International collaborations
- Increased percentage of qualified workforce,
- Increase number of multidisciplinary employees,
- Increase the number of qualification pathways
11. ARCH will see the creation of health campuses: the Singleton Health Campus which will integrate a number of strategic initiatives enabling significantly more care to be provided outside an acute hospital and developing seamless care pathways with primary care and the Morriston Health Campus: a major acute health and science centre for the South West Wales region. Additionally, there will be the development of facilities and services across Hywel Dda to support both existing and innovative healthcare delivery for their population including the creation of ILS@Hywel Dda.

12. Underpinned by research excellence in the partner SU Colleges and broader networks, ARCH will develop and translate leading healthcare innovation to the benefit of the population of the region and beyond.

13. Working in partnership with key stakeholders across the Swansea Bay City Region, ARCH will deliver an integrated regional approach to addressing its economic and health needs.

14. The intention is for ARCH to become active from 2015 onwards, delivering a combined impact which is far greater than the sum of its parts.

15. ARCH has been designed to act as an umbrella - individual elements can be taken forward independently as funding becomes available. ARCH organises, enables and enhances the health and wellbeing economy.

ARCH: A Regional Collaboration for Health

Regional Collaborative Health, Social Care & Wellbeing Model

ARCH will deliver a holistic regional model for health built on the principles of cooperation and collaboration across Hywel Dda UHB, ABMU H8 and Swansea University. The core of this model is based upon establishing a relationship with our citizens, working together to develop local values, focused on the health and wellbeing of our communities.

Working with the wider public, third and private sectors, ARCH will develop and implement in new service models based on the principle of care being provided closer to home. Expanding access through the development of new infrastructure and redeveloping and redefining the use of existing infrastructure will radically transform patient pathways across the region.

Within this new model our Hospitals will be dedicated to those who are acutely unwell and require specialist care. When required, this will be delivered in environments which are comparable with the best in the world delivering improved patient outcomes within this holistic model, always supporting improved health and enabling care closer to home.

ARCH is fully aligned to the Integrated Medium Terms Plans for both ABMU and Hywel Dda Health Boards. ARCH is the vehicle that develops and enables the regional collaboration to deliver for the populations of South West Wales.
1. Vision
A Regional Collaboration for Health

Vision Statement
An integrated, open, collaborative health and life sciences regional ecosystem, delivering high quality patient care, developing healthcare and life science professionals, working locally with a global perspective for the sustainable benefit of the health, well-being and wealth of South West Wales and beyond.

We will improve population health by reducing variation and equalising access to excellent care, and promote a vibrant economy through investment, innovation and sustainability of employment.

Radical and innovative solutions for challenges insurmountable with traditional approaches.

Regional
ARCH covers six Local Authority Boundaries, Ceredigion, Pembrokeshire, Carmarthenshire, Bridgend, Neath Port Talbot and Swansea. There is a complex set of boundaries across the different sectors of the Economy but ARCH will deliver benefits across all six Local Authority areas.

Welsh Government has established the Swansea Bay City Region to offer a new approach to economic regeneration; - Larger and more efficient labour markets; - 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.

Collaboration
The WG Minister for Health and Social Services has made Prudent Healthcare 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 ecosystem. Such a radical innovation would truly break the mould allowing new solutions to challenges that are proving insurmountable with traditional approaches. ARCH seeks to capture the opportunity to radically re-engineer disparate activities into one integrated innovative strategy to enable co-production in a much broader domain.

ABMU, Hywel Dda UHB and SU are all significant actors, innovators, employers and influencers over the health, well-being and wealth of the region, which is manifested in a number of ways. There is already collaborative work delivering measurable benefits in terms of service delivery, education, research, innovation, and enterprise. It is natural therefore that these partners lead the development and delivery of the ARCH strategy. Clearly, this cannot be achieved without embracing all entities currently active in the health economy, within an inclusive dynamic strategy.

Health
In line with the Welsh Government Public Health Strategy, ‘Our Healthy Future’, improving the Health of the Communities in South West Wales is at the heart of the ARCH Programme. ARCH recognises that fundamental to excellence in health for the individual and our communities is ensuring the provision of:
- Excellent health services, focused on keeping people well and caring for them as close to home as possible, with in-patient care delivered from high quality hospitals where necessary;
- Education and skill development for the population, recognizing distinctive rural and urban need; and
- Meaningful employment.

ARCH delivers solutions to the main commitments set out in Together for Health, Prudent Healthcare, the Primary Care Delivery Plan, the emerging e-health strategy, the South Wales Programme, the Mid Wales Healthcare Collaborative and the Future Hospitals Commission:
- Service modernisation, including providing care closer to home and developing specialist ‘centres of excellence’;
- Addressing health inequalities;
- Better IT systems and an information strategy ensuring improved information, access and care for patients;
- Improving quality of care;
- Developing the workforce of the future;
- Coproduction with the our citizens;
- A changed financial regime.

ARCH addresses each of these commitments in an innovative way that extends the interface between health service provision and the knowledge economy of the region to drive improvement in our population’s health. There is also an undoubted reciprocity in that innovation offers solutions to the challenges of health service provision and actors in the health service are a largely untapped source of innovation for economic and commercial benefit.
2. National and Regional Context

A Regional Collaboration for Health

National Context

The Welsh Government’s priorities are clear:
- growth and jobs
- educational attainment
- improving health and well-being for all of our citizens
- support children, families and deprived communities.

ARCH – A Regional Centre for Health will directly support Welsh Government in the delivery of these priorities. The Innovation Wales Strategy (2014) confirms the vital role that the life sciences and health sector has for business growth, but also in delivering significant social and economic benefits, which offers a dual gain. It notes that changing demographics of the country are creating a different demand for care – which in itself drives innovation through technology, new treatments and new ways of delivering care. Organisations in Wales need to identify these opportunities and identify ways of exploiting these areas of advantage.

Innovation has been at the heart of the NHS since its creation. The NHS “works at the limits of science – bringing the highest levels of human knowledge and skill to save lives and improve health. It touches our lives at times of basic human need, when care and compassion are what matter most.” But whilst NHS staff are good at identifying innovations and new treatment methods that lead to better outcomes and improve the health of the population, wide implementation can sometimes be frustratingly slow. The NHS is identified in Innovation Wales as “a sleeping giant” in these developments – this partnership, provides just such an opportunity for exploiting these opportunities.

Strategic Health Context

The strategic drivers below describe a transformed Health Economy. This prospectus will demonstrate how ARCH will enable this transformation to become reality at pace.

Together for Health commits the NHS in Wales to:
- addressing health inequalities
- instigating a ‘compact with the public’
- service modernisation, including provided care closer to home and developing specialist ‘centres of excellence’ with improved quality of care.
- better IT systems and an information strategy ensuring improved care for patients
- workforce development
- A changed financial regime – comments as before.

The South Wales Programme [now the NHS Wales Collaborative] created three Acute Care Alliances, based around three “major acute” centres. One, at Morriston Hospital (Morriston Health Campus), for the citizens of ABMU and the Hywel Dda and South Powys Health Board areas. The work of the South Wales Health and Pathology Collaboratives will place even greater importance on Morriston as centre for care.

The Andrews Report “Trusted to Care” emphasised the need to eliminate variable standards of care, improve the culture of care, involve and empower patients and carers in all aspects of their care and service development, improve the level of suitably qualified motivated staff day and night and improve leadership and accountability as part of joining up the strategies on workforce and capacity development, patient safety and quality.

Mid Wales Healthcare Collaborative seeks to ensure that accessible and high-quality healthcare are provided for the population of Hywel Dda given its geography in terms of rurality and demographics.

The Primary Care Delivery Plan challenges organisations to develop a more “social” model of health, which promotes physical, mental and social wellbeing, rather than just the absence of ill health and draws in all relevant organisations, services and people to ensure the root causes of poor health are addressed. ARCH will support the principles of this plan by enabling a focus on
- Prevention, early intervention and improving health, not just treatment
- Co-ordinated care where generalists work closely with specialists and wider support in the community to prevent ill-health, reduce dependency and effectively treat illness
- Active involvement of the public, patients and their carers in decisions about their care and wellbeing.

Our Healthy Future sets the Public Health agenda for Wales. It calls for a commitment to improve the quality and length of a healthy life for all people in Wales. It makes recommendations across the life course emphasising prevention and early intervention with a focus on our most deprived communities; all based on a foundation of research and evidence.
National and Regional Context

A Regional Collaboration for Health

Health
The Social Services and Wellbeing Act ensures that all Public Authorities play their role in improving the outcome for people and the carers who need care and support and focuses the public organisations on the prevention agenda in order to promote wellbeing.

The Future Generations and Well Being Bill sets an ambitious, long-term goals to reflect the Wales we want to see, both now and in the future. These are for a prosperous; resilient; healthier; more equal Wales; with cohesive communities; and a vibrant culture and thriving Welsh language. ARCH has, as a primary aim, the goal of delivering a more equal and healthy society. It will use research, service provision and education to improve prosperity and reduce inequality.

Prudent Healthcare: It is accepted that the challenges of rising costs and increasing demand, while continuing to improve the quality of care requires transformed methods of service delivery.

The Bevan Commission, with others around the world, has challenged the NHS in Wales to adopt the principles of prudent healthcare. Prudent healthcare puts NHS Wales at the front of a growing international effort to get greater value from healthcare systems for patients. As this prospectus will show Prudent health principles are at the heart of the ARCH Programme. Not least through the Wales Centre for Prudent Health Care being an integral part of the collaboration.

Rural Healthcare Plan and the Mid Wales Healthcare Collaborative: Many of the factors and conditions affecting health and well-being in rural South West Wales are also common to urban communities. Yet there are many factors and conditions whose effect in the rural community is harsher than in the urban setting. The circumstances of the individual are compounded by the reduced capacity of the rural community to alleviate that person’s hardship. Later in this document, ARCH explores how some of these issues can be transformed through a different approach to managing health in rural settings.

Skills
Much has been written about lack of integration in the education and skills development system across the UK and in Wales. ARCH seeks to address this identified need for change. The region has 3 universities, a number of Further Education colleges, provision within the NHS and provision within the private sector. The life science sector requires a specialist multidisciplinary, interdisciplinary, skilled, motivated and inspired workforce. The region, therefore, represents a unique environment to design a collaborative, integrated skills development strategy to support and sustain the vision. The Minister for the Economy, Science and Transport has approved the establishment of the All Wales Life Science Skills Group with the region playing a major role, recognising the emergence of a stakeholder-informed strategy to respond to the identified need for change.

Hywel Dda UHB has strong historical links with all three Universities in the region. As well as the links built upon the professional education delivered through Swansea University, the UHB has forged partnership working with Aberystwyth University and University of Wales Trinity St David’s, through partnership arrangements around rural health and wellbeing developments, and through formal membership of Universities, along with Swansea, onto their R&D committee.

Economy
The Minister of Economy Science and Transport has defined 9 Key Sectors for the Welsh economy and they are: Advanced Materials and Manufacturing; Construction; Creative Industries; Energy and Environment; Financial and Professional Services; Food and Farming; Information and Communication Technology; Tourism; and Life Sciences.

Each Key Sector is led by a Sector Panel charged with advising the minister regarding strategic priority. This national strategy has seen the creation of the Life Sciences Hub Wales, the Arthurian Life Science Fund, The Life Science Bridging Fund, The Sêr Cymru Research Network, in all of which the ARCH partners have a governance and strategic role.

The life science and health sector in Wales employs 11,000 high-value people in more than 350 companies. Overwhelmingly, these companies are SMEs with a modest number of large global enterprises creating significant employment. The majority of economic activity is in a subset 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 ICT, advanced manufacturing and tourism.

ARCH builds upon and embeds the Institute of Life Science 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 £50m of incremental inward investment. ARCH therefore has a proven track record of innovation, translation and entrepreneurship within the life science sector.

The ILS has also created a research and translation environment which houses the UK Centre for Mass Spectrometry, the MRC Farr Institute, the ESRC Administrative Data Research Centre, the MRC CLIMB Centre, the Centre for NanoHealth, the SAIL Databank, and other Centres of Excellence which were acknowledged in REF2014 as being 100% world-leading.

ARCH: A Regional Collaboration for Health
3. Partners and Stakeholders

ARCH has consciously adopted the following definition of Partner and Stakeholder for this prospectus.

**Partner:** organisations with which a department works to deliver their objectives, with a formal agreement of roles which may often be a long-term relationship (HM Treasury 2004)

**Stakeholder:** A stakeholder is a person or group having an investment or interest in an enterprise. They may share in some risk or reward, particularly if their investment is monetary, but what they stand to gain may not be tied directly to their contribution in the same way as that of the project partners. Stakeholders are often those who are vested in how a project is designed and whether it is successful, but they may not have direct responsibilities and tasks that influence project completion. (US DOJ 2014)

A world-class health and wellbeing Economy for the region
<table>
<thead>
<tr>
<th>Stakeholder Group</th>
<th>Potential Role in ARCH</th>
<th>Impact of ARCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welsh Government</td>
<td>Alignment of policy and strategy. Commitment to development in accordance with policy alignment. NHS capital funding where required, or supports identification of innovative funding opportunities. Co-ordination with Swansea Bay City Region.</td>
<td>Health, wellbeing and wealth of the communities. Delivering against WG Policy enhancing quality and efficiency. Supporting the development of the Wales brand(s).</td>
</tr>
<tr>
<td>Elected Representatives</td>
<td>Advise strategic direction through engagement and consultation. Participate in governance and delivery. Provide feedback on operational matters.</td>
<td>Visibility and involvement enhancing quality and efficiency in support of the citizens, families and communities they serve.</td>
</tr>
<tr>
<td>Local authorities</td>
<td>Alignment of local policy and strategy. Help Communicate the overall needs of their populations and of service development priorities. Facilitate development of strategic infrastructure and collaborative service provision. Communicate to populations and stakeholders.</td>
<td>Full participation in an innovative and collaborative initiative. More vibrant healthier and economically sustainable community. More impactful and efficient use of resources. Support the building of a global brand.</td>
</tr>
<tr>
<td>Schools and Further Education</td>
<td>Integration of the skills development pipeline with the health and wellbeing ecosystem of the region. Educational programmes to support the promotion of good health and wellbeing.</td>
<td>Enhanced learning and employment opportunities for learners and leavers. Enhanced support and information for programme delivery. Enhanced long-term health awareness and lifestyle for staff, learners and collaborators. Enhance relationships with private/3rd sectors.</td>
</tr>
<tr>
<td>NHS organisations</td>
<td>Example roles for NHS organisations are: - Being part of the Acute Care Alliance, with Morriston as a significant provider of services to their population. - Hywel Dda UHB seeks to further deploy telehealth and telemedicine solutions to support patients and staff. - Public Health Wales are keen to explore provision of services recognising the broader public health benefits. - Working together with NWIS to deliver innovative IT solutions, supporting and enabling the wider service model. - Welsh Ambulance Services Trust see this as an opportunity to develop a major hub for emergency transport services across the region.</td>
<td>Contribute to reduced inequalities in health. Enhanced value through improved efficiency of healthcare delivery. Improved quality of care for the region. Greater effectiveness of delivering Welsh Government Prudential Healthcare principles. Improved patient access to specialist services. Catalyst for innovative and transformational change for integration of the regional healthcare value and supply chain.</td>
</tr>
<tr>
<td>Collaborative healthcare providers</td>
<td>Two potential opportunities that are being explored: - A local private health care provider which is looking to develop new purpose built premises in a geographical accessible location. - A provider of high specification cardiac, bariatric and reconstructive facilities.</td>
<td>Enhanced capacity for healthcare delivery. Enhanced workforce retention &amp; development. Improved equality of access to healthcare provision through co-production. Opportunity for long-term sustainable planning &amp; commissioning within the ecosystem.</td>
</tr>
<tr>
<td>Higher Education</td>
<td>Development of talent within the health and wellbeing ecosystem. World-leading research activity within the healthcare ecosystem. Innovation and translation activity in partnership with all stakeholders. Driving international collaboration in R&amp;D &amp; Innovation.</td>
<td>A virtuous circle of enhanced research leading to improvements in service delivery. Enhanced impact of research activity. Enhanced workforce retention/development. At the forefront of talent development for changing modern healthcare requirements. Enhanced reputation nationally/internationally.</td>
</tr>
<tr>
<td>Bevan Commission</td>
<td>Create and operate its Academy for Leadership and Innovation, incorporating centres of excellence for: - Rural Health. - Prudent Health.</td>
<td>Integration of the Bevan Academy in a state of the art ecosystem with rich research potential. The ability to promote Prudent Healthcare practices into healthcare delivery.</td>
</tr>
<tr>
<td>Private Sector Organisations</td>
<td>Support the ARCH strategy for the development of the health economy of the region.Actively participate in the delivery of ARCH.</td>
<td>Facilitate better integration of private sector healthcare within the region. Sharing of best-practice across sectors.</td>
</tr>
</tbody>
</table>
4. Aims
A Regional Collaboration for Health

ARCH

ARCH is a regional partnership which will facilitate the engagement of a wide range of stakeholders functioning within an open, innovative and multidisciplinary, collaborative structure. The impact of this collaboration will act as a multiplier greatly enhancing the benefits of ARCH.

The Approach
The ARCH vision will be achieved through a series of high level aims each delivered by fulfilling a series of related objectives. The vision has three primary strands: health, skills and economy, and each has three high level aims to be achieved through collaborative working.

Generic Aims
- Design, establish and maintain an inclusive, 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, appropriately and honestly communicate the benefits and impacts of ARCH to all stakeholders.

Health
- 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; recognising the challenges of rural and urban healthcare
- Deliver 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
- Transform services so they are integrated, easy to access and navigate with health, social care providers, public, private and third sector working together for citizens within coherent framework.

Economy
- Mobilise the NHS capacity to innovate and translate ideas for the economic benefit of the 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.

Skills & Education
- Create a multi professional learning and training environment to support a shaped and talented workforce designed to deliver and sustain ARCH
- Recruit, develop, inspire and retain the best talent including the promotion of increased opportunities for the 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.
5. The Collaborative Construct

ARCH will represent an inclusive regional partnership led by ABMUHB, Hywel Dda UHB and SU which will facilitate the engagement of a wide range of stakeholders functioning within an open innovation, multi-disciplinary, collaborative structure.

5.1 Context

Collaboration is often understood to mean a group of individuals or organisations exerting a collective effort to address a particular identified challenge. However, the ARCH view of its collaborative construct is more than this and is intended to be sustainable and long-term. Its collaborative construct brings together:

- **People**: the talented individuals with skills and experience that reside within the ARCH stakeholder group
- **Knowhow**: the individual and organisational knowledge that has been established over generations
- **Resources**: the financial and physical assets that each stakeholder owns that may be underutilised and of value to others
- **Infrastructure**: the physical and digital attributes which are often inaccessible to others
- **Practices**: ways of working with strengths and weaknesses which are ripe for systems innovation to develop best practice
- **Networks**: regional, national and global networks and relationships which can be leveraged for the common good
- **Stakeholders**: expanding the friends and allies whilst sharing risk and reward
- **Problem domains**: A problem domain is often simply looking at only the topics of an individual’s or organisation’s interest, and excluding everything else. Sharing challenges can create a very rich and dynamic innovation environment

ARCH’s philosophy will be to fuse the interests of the partners and stakeholders into one community of action. Fusion is the process of combining two or more distinct entities into a new whole. Energy is required to assemble the constituent parts but having done so, the environment generates energy far greater than the sum of its separate individual components.

Fusion is also characterised by the need to continually expend effort and energy to keep the components assembled in order to deliver positive impact.

Such a structure also encourages models of innovation allowing challenges to be addressed in novel ways. Not only does ARCH bring together stakeholders to work collaboratively, but it also assembles disparate problem domains which are not often addressed in the one environment. This in itself can be a great source of innovation.

Sharing a set of common core values among the partners and stakeholders will be key to the success of ARCH. These core values will be defined, reviewed and refreshed by the ARCH Programme Board which will lead the embedding of these throughout the organisation and activities of ARCH. This will ensure that a common ethos will diffuse throughout the initiative leading to the efficient and effective delivery of the vision.
6. Health Service Provision
A Regional Collaboration for Health

ARCH – Model of Healthcare
A new model of healthcare that places the individual at its centre and works together with patients and citizens to co-produce healthier people and communities and deliver better outcomes.

6.1 ARCH – The Whole System

ARCH will accelerate a new model of integrated care across primary, social and secondary care sectors supported by a technology-enabled population health model. ARCH will place greater emphasis on Integrated Primary and Community care teams in order to reduce admissions and support people to remain at home through primary/secondary care collaboration. The new model will work by identifying people who are at potential risk and with the approval of the patient, and working with third sector partners, care plans will be developed, home assessments carried out and action taken to improve independence and promote health and wellbeing.

ARCH recognises that there needs to be a focus on pathways that cross organisational boundaries, between our Health Boards, between primary, community and acute care, and between health care and other partners, including social care. We know that a focus on pathways produces both better outcomes and a better patient experience. The model of care that the ARCH Programme will implement places the person at its centre and works together with patients and citizens to co-produce healthier people and communities and deliver better outcomes that matter to people.

Quality Improvement
Continuous quality improvement underpins quality healthcare in and out of hospital. ARCH will draw upon the quality improvement foundations established in areas like the Qulturum in Jönköping in Sweden and Ko Awatea in New Zealand but also look to other countries to learn from their experiences to enable world class quality on a solid and sustainable long-term basis. ARCH will take the learning from best practice and establish quality improvement into all aspects of work. ARCH recognises principles of best practice from around the world which include:

- Vertical integration of a quality improvement approach to healthcare.
- Corporate approach to systems improvement that enables cross-departmental process development
- Aggressive and all-inclusive approach to training and education in Quality Improvement
- Cohesion and consistency between the delivery of healthcare and public health and social care.
- A strong and agreed set of values which are manifest at all levels of work, clear leadership which has held to those values and stability which has allowed practice and requisite skills to be embedded.
- A strong link between systems development and the financial reporting required to service any change in systems reporting that might result from the improvement work.

ARCH will embed a system of quality improvement across the region which will include the development of a physical space/s which evidence shows demonstrates the benefit of a physical centre/s that brings together clinicians and experts in quality improvement. Both Health Boards have already taken action to enhance quality improvement across their organisations, through the development of quality improvement strategies and investment in quality improvement teams. These values of quality improvement which are strongly supported by 1000Lives will be extended across sectors including education and Social Services.

ARCH: A Regional Collaboration for Health
6. Health Service Provision

A Regional Collaboration for Health

ABM and Hywel Dda University Health Boards

ABM and Hywel Dda Health University Boards, together with Swansea University is committed to develop a state of the art Health Economy that delivers safe, sustainable and efficient services, that are comparable with the best and to deliver these as locally and prudently as possible.

6.2 Hywel Dda UHB & ABMU - IMTPs Health Service Provision

Transforming the Health of South West Wales

Hywel Dda UHB and ABMU Health Boards have committed within their Integrated Medium Term Plans (IMTP) to work with their populations and wider stakeholders to develop healthier communities.

“We will promote health & wellbeing and invest in prevention” (extract from Hywel Dda UHB Mission Statement IMTP 15/18)

Transforming the health of the communities in South West Wales is at the heart of the ARCH Programme. In her recent Annual report the Chief Medical Officer challenged Public Services not to lose sight of the socio economic factors which are underlying causes of material disadvantage. ARCH will improve the socioeconomic environment of South Wales through:

- Reducing inequalities by enhancing the socioeconomic outcomes of our most deprived communities
- Targeting our communities where there is significant differences in life expectancy and healthy life expectancy between our least and most deprived communities.
- Improved education including health education and health literacy
- Developing a higher skilled workforce contributing to the knowledge economy
- Develop a range of quality employment across the health and social care system.
- Recognise the impact of the inverse care law on our most deprived communities through implementing improved access to care for these citizens
- Promoting health & independence in our rural populations, which have higher proportions of older people who face additional challenges to access health and wellbeing services.

Care Closer to People’s Homes

Hywel Dda UHB and ABMU Health Boards have committed within their IMTP to develop and deliver services closer to people’s homes providing more community based models of care. (Hywel Dda UHB IMTP 15/18 & ABMU IMTP 15/18)

- The challenges for the NHS in Wales are real and unprecedented. The Nuffield Trust confirms that we face pressure from a growing and ageing population (Hywel Dda UHB 10.1%, ABMU 8.7% of population aged 75%+) with many more people living with chronic illnesses, (Hywel Dda UHB 34%, ABMU 36% of adults whose life is limited by health Problem /disability) including dementia. This will require a model of care for the population of South West Wales that delivers as many services as close to home as possible.
- Developing innovative digital solutions that support citizens in caring for themselves and transform the way they access services, maximising the ability to receive their care at home or in the community.
- Working with the population to empower in order to deliver improved self-management of chronic conditions and increased levels of health literacy
- Developing transformed models of primary and community services, which will include of a range networked services, Primary and Community resource hubs and wider community support services recognising the challenges of rural and remote healthcare and wellbeing
- There is increasing complexity and a growing volume of care that primary and community services are required to manage; 90% of NHS contacts are delivered in primary care. Within their IMTPs, both Health Boards have prioritised the further enhancement of primary care planning in partnership with Local Authorities, the third sector and other partners.
- Develop models of care to increase access, 7 days per week where possible via face-to-face and digital solutions including telehealth and telemedicine.
- Developing new models of service provision based on best practice, research & innovation with available resources.
- Educating and developing a workforce for a health and social care system where continuity and seamless care for all patients is expected.

Both organisations recognise that strengthened Care Closer to Home is both what our populations want, and will also help stabilise our hospitals’ unscheduled care systems and optimise planned care delivery to make significant improvements in access and waiting times.
Hospital Networks Delivering clinically sustainable, high quality services & excellent patient outcomes

Hywel Dda UHB and ABMU Health Boards have both committed within their IMTPs to develop service delivery model which ensures no hospital works in an isolated way, and instead, will form part of a network in the provision of services.

- The South Wales Programme recommended the establishment of three Acute Care Alliances for the wider South Wales area (including Hywel Dda) based around three “major acute” centres, one of which should be at Morriston Hospital. ABMU have already committed to relocating more services from Singleton to Morriston as part of its strategic direction and the work of the South Wales Health and Pathology Collaboratives enhances further the important role of Morriston in the region. Wales Ambulance Services NHS Trust (WAST) & Public Health Wales (PHW) NHS Trust have also indicated that they would look favourably upon an opportunity to co-locate services at a regional acute hub at Morriston.

- Hywel Dda UHB are developing the service delivery model where hospitals function as ‘One Hospital over four sites’ The aim of this is to ensure that the ‘right processes’ are in place throughout the whole patient pathway, in order to capture all opportunities for positive change and eliminate poor processes. This will help improve the flow of patients through both planned care and unscheduled care pathways, in such a way as to secure best value in the use of our resources to ensure that patients will receive safe, efficient and timely services.

- **Morrison Health Campus**, with excellent road and air access will become the Major Acute Centre for South West Wales providing acute and complex surgical and medical services with expanded critical care and specialised diagnostic capacity. Supra-regional services such as Burns, Reconstructive Plastic surgery, Cardiothoracic and Bariatric Surgery will continue to be centred at Morriston, supported by new research and education facilities and opportunities for regional pathology hubs.

- **Singleton Health Campus** will become a state of the art co-production environment comprising the Singleton Rapid Assessment and Ambulatory Care Centre, Ambulatory Surgery and Oncology Centre, Urgent Care Centre, Eye centre, Outpatient and Diagnostic centre and an Integrated Reablement and Recovery Centre. Immersed in a teaching, research, innovation and translation culture. Options for some Mental Health facilities for this site are being explored.

**ARCH - Excellent Care Environments**

- Health care services will be delivered in health care environments fit for the 21st Century supported by technology and innovation.
- Our in-patient environments will be designed to provide around 50% single rooms to improve infection control and promote dignified care. All the facilities will reflect the needs of our patients, particularly but not exclusively the frail elderly and those with cognitive impairment.
- Both new and existing estate will be developed in line with the highest environmental standards maximizing energy efficiency and utilising digital technologies to support effective and safe clinical care in the 21st century, particularly in rural and remote communities.
- Managing how patients’ health is managed is revolutionised by enabling all health professions to operate in a paper-free environment. This will allow the capture of clinical data electronically which benefits staff and patients by reducing costs and capturing data to support efficiency, business analysis & research. The development of telehealth and telemedicine solutions will allow patients to be supported where they live.
- World class care environments will be established which promote the specialist training of the doctors, nurses, social workers, therapists and other health professionals of the next generation that recognises the distinctive challenges for rural and urban communities.
- A Prudent Health Care approach at the heart of South West Wales ecosystem that counters the “Inverse Care Law” by providing the best patient-centred healthcare system, informed by high quality research and education, both stimulating the economy and improving population health.

These radical changes to the delivery system will become a reality only if the implementation of new models of care is given serious attention. This will involve decommissioning outdated models of care to create resources and space for new ones to emerge; supporting NHS organisations to innovate and adopt established best practices; and making it easier for new providers to enter the market where this is appropriate. Attitudes towards risk-taking need to change to support the transformation of the delivery system and to actively encourage experimentation.

*The King’s Fund, 2012*
Health Service Provision
A Regional Collaboration for Health

6.3 The Need

- Increased demand from a larger and older population. By 2025: 79% increase in males who are over 85 and 34% increase in females over 85 (Nuffield Trust June 2014)
- More people living with multiple chronic disease
- Identity new models of care for patients, to improve the integration of primary, community and social care and move it closer to home
- Ensure that the right balance is struck in our communities between redesigning services and making sure patients are treated near to where they live
- Innovative and flexible solutions to workforce shortages across the health & social care professions
- Ensure patients benefit from more appropriate treatment, and where appropriate eliminate admissions by developing ambulatory and rapid access care seven days a week, ensure senior decision makers are available to see patients at an early stage in their care.
- To develop 21st Century digital solutions to improve the quality of care, access to care, increase the efficiency and value of our current resources & empower citizens
- Challenges of rural populations
  - Dispersed communities, limited access to services increased travel times to access basic healthcare
  - Limited IT access
  - Relatively older demographics
- Fragmented Services as a result of historical developments across hospital sites in South West Wales
- Requirement for sustainable provision of specialist services delivered 24 hours a day 7 days a week.
- Specialist Centres accessible for conditions that require treatments that are time critical
- Maintain the most of medical advances: the ability to prevent, diagnose and treat medical conditions is constantly improving. Much of this advanced medical treatment depends on better technology and equipment, operated by more specialist clinicians.
- 21st Century Ward environment including an increase in single rooms that promotes infection control and patient dignity.
- Hospital environments that are designed to meet the needs of the frail elderly
- Sustainable workforce and training through centralising some services from across the region
- Shortage of Critical Care beds – Demand for critical care is increasing and, as a result of changing demography, is projected to continue to do so at around 4-5% per year (A Strategic Vision for Critical Care Services in Wales)
- To deliver recognised national quality standards across all specialties

ARCH will build on the platform that has been established by Changing for the Better, and Your Health Your Future and ARCH is only possible because of the thorough engagement carried out through both of these service change programmes.

ARCH has ensured that the services described in this document are all in line with those described and engaged on through both Your Health Your Future and Changing for the Better Programmes.

ARCH enables the Health Boards to progress elements of the change programmes that have been constrained to date.

Your Health: Your Future
And
Changing for the Better

During 2012 both Hywel Dda UHB and ABMU began programmes of listening and engaging with their populations with regard to service change in response to the growing and changing need that the health economy across Wales is facing.

At that time both Health Boards undertook and completed an extensive public consultation. The public gave the Health Boards clear direction that they wanted more integrated services, with care being provided close to their homes. The public also recognised that there was a need for some specialist services to be more centralised.

The Health Boards have responded and in the last year alone, ABMU Health Board has provided a significant investment in integrated Community services which enables more people to be cared for in their homes. Along with this investment the Health Board has placed a greater focus on improving population health through establishing a range of community and hospital based smoking cessation programmes.

Hywel Dda UHB has invested significantly in community services with the further rollout of Educational Programmes for Patients; the introduction of the Designed to Smile Programme; and the development of initiatives to tackle lifestyle factors including overweight / obesity, smoking cessation and through the Foundations for Change Programme.
6.4 The Solution: Health and Wellbeing

We will promote health & wellbeing and invest in prevention (extract from Hywel Dda UHB Mission Statement IMTP 15/18)
We will improve the health of our communities, & reducing health inequalities (adapted from the first strategic aim of ABMU Health Board IMTP 15/18)

ARCH recognises that the health of the population of South West Wales, as with other areas, is variable. Whilst it is true that life expectancy continues to increase for both men and women, many within the communities of South West Wales are living with comorbidities and the difference in healthy life expectancy between the most and least deprived communities is unacceptably high; this is coupled with the growing demand for health services from an ageing population. Therefore, ARCH recognises that one of the most complex and biggest challenges faced by the collaboration is how we work with the population across many different types of communities to see improvement in population health and reduction in health inequality.

Building Community Assets
ARCH is bringing together partners from across the public, private and 3rd sectors. ARCH will work with stakeholders from across these sectors at a Primary Care Cluster level to develop and fully utilise community assets as part of new integrated solutions and services for areas of increasing concern, such as obesity and dementia. For example, community / leisure facilities in the 3rd, private or public sector, primary care and research into behaviour change and information from the SAIL database relating to obesogenic environments will be brought together to develop new approaches to working with communities in South West Wales in regard to obesity.

Life course Approach
ARCH will consider using a ‘life course approach’ as a helpful way to consider people’s changing needs at different stages of their lives and within the different environments that they live.

Improving intelligence of health and wellbeing need
Through the development of a Prudent Healthcare Centre and Intelligence unit which is part of the ILS Medi-Park. ARCH will develop an improved picture of the current and future health and wellbeing needs of communities. While this will help primary care clusters to develop appropriate local plans, the information could also be used to inform housing strategy and city and town planning, licensing, and transport policy all supporting improved health across South West Wales.

Preventative Services
In line with the responsibilities set out in the Social Services & Wellbeing Act ARCH provides the opportunity to utilise the partnership and links to key stakeholders across the sectors to develop preventative services which support people within our community to be independent and promotes wellbeing to the large number of carers within our communities.

Health Literacy
Health literacy is the ability and motivation level of an individual to access, understand, communicate and evaluate both narrative and numeric information to promote, manage and improve their health status throughout their life time.

Health literacy is more than just the ability to read and understand health related information; it also includes the motivation, ability and confidence to make informed decisions to help manage and improve health.

ARCH will harness the expertise across the collaborative to improve levels of health literacy across South West Wales. ARCH recognises that inadequate health literacy levels are most prevalent in disadvantage communities and innovative solutions will be required to improve levels.

Reducing the Burden of Tobacco Use
Cigarette smoking remains the leading cause of preventable ill health in Wales and a major cause of health inequalities. (Adults who Smoke ABMU 23% Hywel Dda 20.4%)

Improving Health at Work
A total of 1.3 million contracted days of work are lost annually to sickness or absence in NHS Wales alone. An improvement of 0.3 per cent would release a further 73,000 days back to the system.

Reducing the Burden of Obesity
Obesity is a major public health concern, obesity can impair a person’s wellbeing and quality of life. Obesity contributes to a range of Acute and Long Term Conditions (Adults Obese / overweight – ABMU: 59%, Hywel Dda: 57.4%)

Emotional Wellbeing
Improving the mental wellbeing of the population so that individuals recognise their abilities, are able to cope with the normal stresses of life, work productively and fruitfully, and make a contribution to their communities’
Primary Care

Austerity is driving a wave of demand into primary care on an unprecedented scale. Wales has 19 million contacts with GP services every year in Wales for a population of just three million people.

Plan for Primary Care in Wales

6.5 The Solution: Primary & Community Care

Hywel Dda UHB & ABMU HB both plan through their IMTPs, to develop Primary & Community Care models built on local experience & perspective working with Local Authorities, 3rd Sector Partners & other key stakeholders.

Primary & Community Care Leadership & Information

The ARCH programme will have a focus on increasing and improving the status of primary care. It will work with the primary care clusters to establish mechanisms for the development of primary care leadership and innovation, and will provide an opportunity through its key partnership with Swansea University to enhance primary care research. This will provide many benefits, one of which will be contributing to the recruitment and retention of General Practitioners.

ARCH will stimulate and support Primary Care clusters as they plan their services for local populations. ARCH will accelerate the development of local clinical, workforce, financial and community health information which will be used to develop community health and wellbeing needs assessments.

Infrastructure

ARCH will develop infrastructure that improves access and availability of primary care, supports an improved interface between primary, secondary and social care and bring appropriate diagnostics, investigations and treatment closer to peoples’ homes and located within their community.

Crucial to this will be developing digital systems that enable information to flow between service providers and between service providers and patients. In order to achieve safe, convenient and personalised health and care service, this will require improvements the Primary and Community digital infrastructure.

These digital and ICT systems will support a system where the patient remains the overall responsibility of primary care even if they do require a referral to hospital.

Multi Professional Workforce

ARCH will promote the development of extended Primary Care teams, recognising that there many professions who are working at the community level in the primary care field, (nurses, pharmacists, health visitors, therapists etc.). ARCH will support the Primary Care Clusters to develop multidisciplinary teams. This will support the prudent principle that all people working in for the NHS should operate at the top of their clinical competence.

Maintain Health and wellbeing

ARCH will work with Primary Care Clusters to understand and implement the best ways to supporting Behaviour Change / Education people to manage their own physical, mental and social health and wellbeing and make best use of the NHS.

ARCH is a collaboration between patients, and the public, private, and third sector. Within Primary Care this provides an opportunity for all the sectors to work together at a local level to develop new integrated solutions and services for areas of increasing concern such as obesity or dementia, drawing on the local resources from across sectors to model very different service provision for example bring the leisure sector, health sector and research sectors together to deliver new models for tackling obesity.

This will include fully utilising the SAIL database and other data to improve our understanding about individual patient needs, in order to identify at an earlier stage those patients whose health risks are increasing.

Primary & Community Care Infrastructure

Development of skills simulation centres, in Hywel Dda UHB & ABMU. These will provide clinical skills training emphasising multi-disciplinary teams and collaborative team development.

Develop community & primary care resource centres to support the shift away from hospital settings, allow easier patient access; to develop prudent healthcare based interventions; and improve patient empowerment and self-care.

Develop of dementia friendly living centres, introducing the innovative life cafe concept whereby important person-centred facilities are co-located, enabling people to be at the core of service delivery this will support the delivery of Hywel Dda UHB Dementia & Frailty Strategy.

Roll-out of Telehealth and telemedicine solutions at scale based on the findings of innovative projects such as European Commission funded United for Health currently being undertaken in Hywel Dda. This will focus on ensuring that appropriate infrastructure is in place to support new and improved ways of working for healthcare professionals, and adapting solutions to make them more individually appropriate to our population.
6.6 The Solution: Singleton Health Campus

A Health Resource for Primary and Community Care

Rapid Assessment & Ambulatory Care Centre: Access to state of the art diagnostics including advanced imaging and laboratory facilities. Open seven days per week and accessible to the public through primary care referral.

Step-up & Step-down Facility: Bedded wards under the care of GP and nurse practitioners available 24 hours a day designed to ease pressure on acute beds and supporting out of hospital care and the wider care closer to home model.

Urgent Care Centre: non emergency patients provided with rapid treatment and assessment via an urgent care pathway.

Mental Health: Older people assessment beds, relocated from Cefn Coed Hospital.

Integrated Reablement and Recovery Centre: A state of the art co-production environment integrating the services of public, third sector and private providers.

E-Infrastructure: Integrating all actors and stakeholders, enhancing accessibility and ensuring safe, effective and efficient delivery of care and services and promoting research in this area.

College of Medicine: The education and training of doctors and life scientists immersed in a healthcare delivery ecosystem, fit for the needs of the NHS.

College of Human & Health Sciences: The education and training of healthcare professionals immersed including a Health and Wellbeing Centre, fit for the needs of the NHS.

Clinical Research: Expansion of J-CRF including co-ordinated trials facility and ultrasound training facility to provide greater scope and scale for trials activity.

ILS: Expansion of ILS Medi-Park including research, innovation translation and commercialisation for the benefit of the health and wealth across the region.

Indicative Development Image for Singleton Health Campus linking the NHS and the University:

The Singleton Health Campus will become a state of the art co-production environment containing the Singleton Ambulatory Centre, Step-up/Step-down facility, an integrated re-ablement and recovery centre, immersed in a teaching, research, innovation and translation culture.

Physical Infrastructure:

A reconfiguring and refurbishment of the current hospital estate combined with new build to place patient care and service delivery at the heart of a new Health Campus enabling the delivery of high-quality state of the art co-production health and social care services.

A reconfiguration of current hospital estate to:
- Develop a state of the art healthcare facility delivering the services set out in this section.
- Locate activity of the Swansea University College of Medicine including elements of ILS Medi-Park.
- Locate activity of the Swansea University College of Human & Health Science including the Health and Wellbeing Centre.
- Support synergistic services, including prudent, collaborative health and social care provision.

A world-class e-infrastructure seamlessly interconnecting all aspects of service delivery, creating access to high-quality care across the region, supporting research, innovation and translation.

The Singleton Health Campus Masterplan, through design and architecture will seamlessly integrate elements of the current hospital and new facilities with the infrastructure already established and planned new developments of its University partner.
The Solution: Singleton Health Campus

Integrated Primary & Community Health Model

At its heart this model has a strong population health orientation with a commitment to meet the specific needs of disadvantaged communities and address health inequalities. This model of service provision would incorporate GP practices / Networks, third sector organisations, the Singleton Health Campus and social care.

This Integrated Community Health Model would seek to use greater organisational scale to develop an extended range of local health and social care services (including, for example, welfare rights advice, housing support, employment training and parenting support) based on analysis of local needs.

Patient Focused

Singleton Health Campus will serve as a bridge between primary care, delivered in the community, and acute care in our specialist centre at Morriston, by building the conditions for integrated, patient-centred local services which are safer and more effective than our current model. We will place the patient at the heart of the model by building the confidence and skills of patients and carers to manage their own health. Patients will receive the right care in the right place at the right time by the right professional.

Rapid Access & Ambulatory Care

Ambulatory care is a patient focused approach where many conditions can be treated without the need for an overnight stay in hospital. The Health Campus will be an exemplar model putting into practice the aim of providing ambulatory care and rapid access to diagnostics and appropriate services as the default mode of care. Workforce planning will be organised for a seven day presence, providing outpatient clinics either remotely via digital solutions or face to face consultations, and hot slots that General Practice can refer into.

Our patients will receive the same care they would have previously received as an inpatient. Singleton Health Campus will have at its heart the ability to provide patients with the care and treatment required during scheduled ambulatory care opening hours. Taking an integrated approach with social services patients will then be able to return home and if further treatment is required they would return to the unit to receive this the following day or within a specified timeframe.

Diagnostic Centre

The evidence that ambulatory care significantly reduces unnecessary admissions and meets patient expectations is well understood. Essential to the effectiveness of Ambulatory Care is appropriate diagnostics. Singleton Health Campus will have a full range of diagnostic capability, organised to enable routine schedules and allow rapid access via refer from General Practice. Diagnostics will be operational seven days a week.

Digital / E Infrastructure

We will make use of interconnected technologies to embrace patients / public across public health, primary care the Health Campus, and social care, settings combined with research to ensure the delivery of cutting-edge care that’s comprehensive, collaborative, efficient, and individualised to the patient and family’s needs. In order to deliver better acute and chronic disease management and to empower our population to prevent ill-health.

---

Low levels of admissions for ambulatory care sensitive conditions indicates good coordination between the different elements of the healthcare system, in particular, between primary and secondary care.

The Kings Fund, 2013
The Solution: Singleton Health Campus

Step Up Beds

As part of the bridge between primary care and acute secondary care, Singleton Health Campus will have step-up beds providing care for patients who have nursing needs which require a limited number of days of enhanced nursing/medical intervention but do not require acute hospital admission. Patients will be supported to return to their home either self-caring or with an existing package of care. A GP practice could be commissioned to take on governance arrangements for these beds to remove the need for a patient’s GP to make changes to medications or visit patients whilst in the beds.

Ambulatory Oncology

Singleton Health Campus would be a core part of the South West Wales Cancer Centre providing Ambulatory Oncology (radiotherapy) and appropriate systemic therapy provision to the population of Swansea and linked closely with the University for research and education purposes.

Mental Health

The Health Board described in its plan “Changing Mental Health Service for the Better”, that in order to meet national standards for the provision of older peoples in-patient assessment beds there should be the co-location of physical and mental health services. Singleton Health Campus site will provide a fit for purpose therapeutic environment with readily available access to diagnostics and specialist medical advice.

Ophthalmology

Rising demand and opportunities to reconfigure care to provide an excellent experience and outcomes for patients with a predominantly ambulatory approach create a platform for an eye centre that meets the expectations of patients and attracts the best clinicians with facilities purpose designed and integrated between community and hospital eye care.

Life Science and Health Research

The integration of the existing University Campus and the Singleton Hospital site into a new Singleton Health Campus will provide physical infrastructure changes designed to enhance the collaborative research and innovation activity between the partners. ILS Medi-Park will realise the growth of the existing ILS1, ILS2 and ILS Data Science facilities to a new science park environment where life science research and commerce can drive the development of the local cluster, whilst simultaneously attracting other world-leading organisations to the region. In December 2014, Swansea University’s research standing was elevated substantially by the system which assess University research in the United Kingdom; the Research Excellence Framework. The College of Medicine in particular contributed significantly to the University’s improved research standing with its research environment (the ILS facilities) being identified as 100% world-leading, and with 95% of its research being identified as either world-leading or world-class. The College of Medicine’s overall standing in its Unit of Assessment (the Allied Health Professions) is now number 2 of 95 institutions across the UK. This fantastic result is testament to the health research already underway jointly between the University and ABMU. ARCH will capitalise on this impressive foundation by expanding the scale and breadth of research excellence.
6.7 The Solution: Morriston Health Campus

A regionally accessible integrated Centre of Excellence in major acute care at Morriston Hospital:

- Acute Complex Surgery Centre
- Delivering for the population of South West Wales in the South Wales Major Trauma Network
- An Acute Hub incorporating Emergency Department, Acute Medical Unit, GP Out of Hours, Acute GP Unit acute ambulatory care with appropriate rapid access to imaging and diagnostic tests, providing the single medical take for Swansea and Neath Port Talbot.
- A Hyper Acute Stroke Centre ensuring stroke patients receive rapid treatment in line with National standards
- Centre for Obstetric, Maternity, Neonatology, & Acute Gynaecology
- Increased and sustainable Critical Care capacity
- Morriston will continue to provide supra regional services in Burns & Plastic surgery
- Regional pathology laboratories using state of the art techniques
- Elective orthopaedic capacity

World class specialist training environment for doctors, nurses and therapists of the next generation.

Indicative Site Development Plan for Morriston Health Campus which incorporates land adjacent to existing hospital:

- Physical Infrastructure
  - A new women and Children unit incorporating Paediatrics, Obstetric, Maternity, Neonatology, & Acute Gynaecology
  - Expand the Emergency Department which will include incorporating a high speed CT Scanner to improve the pathway for major Trauma and Stroke patients
  - Develop an Acute Hub: co-locating ED, Acute GP unit, Acute medical Unit and GP Out of Hours
  - The South West Wales Cancer Centre with 4 LINAC machines providing treatment for acute ambulatory oncology patients
  - Increase ward capacity for both surgical and medical services
  - Increase Critical Care Capacity to meet current & future demand.
  - A hostel for nocturnal Dialysis and Oncology patients

- Impact
  - Improved fast & effective cancer treatment
  - Improved access to specialist cancer services for population of Hywel Dda
  - Significantly reduced cancelled operations due to lack of critical care beds
  - Provide a seven day surgical and medical service ensuring patients have improved outcomes and discharged sooner
  - Reduced mortality for Major Trauma patients.
Health Service Provision
A Regional Collaboration for Health

The Solution: Morriston Health Campus

Medical Intake
Establish a single medical intake for the populations of Swansea and Neath Port Talbot. Allow senior medical staff to provide 7 day a week input across a range of medical specialties (Respiratory, Cardiology, Gastroenterology, Acute Care Physicians, Geriatricians, Stroke) all supported with appropriate scale of diagnostics for rapid assessment. Increase medical ward capacity at Morriston with improved environment.

Hyper Acute Stroke Centre
Establish a Hyper Acute Stroke Centre accessible 24/7 to receive all potential stroke patients directly into a specialist stroke service for rapid assessment / diagnosis of a stroke. Establish appropriate stoke treatment within 90 minutes of the emergency services being called. Patients managed within the Hyper Acute Stroke Centre for up to the first 3 days of their admission, in line with national standards. This service will be provided for ABMU HB residents with the opportunity to accept some of Hywel Dda UHB patients as well.

Obstetric, Neonatology, Acute Gynaecology, Paediatrics
Modernise Women & Children’s services and re-locate Swansea’s Obstetric, Gynaecology, Regional Neonatology services, Inpatient and Urgent Paediatrics and Paediatric Surgery together on one site in purpose built state of the art facilities. This will deliver best practice standards, best efficiency gains and a seamless model where the services are co-located and expert advice and investigation is always on hand.

Acute Hub (AGPU, GPOOH, ED)
The acute hub will provide a single / focused point of access for patients into acute medicine for Swansea and Neath Port Talbot 24 hours – 7 days a week, bringing together the clinical areas of Medicine that focus on the initial diagnostics, assessment and stabilisation of acutely ill medical patients. These include the Clinical Decision Unit (acute medical unit), the ambulatory care provision, short-stay beds, the Acute General Practice Unit, the Out of Hours General Practice service and the Emergency Department and close collaboration with the Welsh Ambulance Service. The Acute Care Hub will focus on patients for the first 48 hours of their care.

ED Capacity, Trauma Network and Helipad
Morriston will provide a crucial contribution to the South Wales Major Trauma Network. An Emergency Department with increased capacity and immediate CT imagining will have experienced staffed trained to provide the reception, management and stabilisation of Major Trauma patients from across the region received by air or road. All complementing the burns and plastic surgery supra regional services already based at Morriston. This will ensure that South Wales and the rural populations of south west and mid Wales are served by a centre that meets the national major trauma standards and is comparable with the best care from the across the world.

Surgical Capacity
The South Wales Health Collaborative anticipates the need for reconfiguration of surgical services with much greater centralisation across South Wales of unscheduled surgery and some elective surgery for most specialties, particularly general surgery, orthopaedic surgery, ENT, maxillofacial surgery and emergency surgery in children; all of which will require additional beds, diagnostic and theatre capacity. Vascular surgery, pancreatic surgery and some complex orthopaedic surgery are already delivered by Morriston for the region. The presence of 24/7 critical care, imaging and children’s anaesthesia is crucial to support these centralised services in the future.

Pathology
Centralising the cellular pathology and blood science laboratory Services on the Morriston Health Campus alongside a regional microbiology laboratory (Public Health Wales) supports the outcome of an appraisal exercise completed by the South Wales Pathology Collaborative and would provide opportunities for state of the art techniques, national reference expertise as well as research and teaching in Swansea University (Medicine, nursing and health science students).

Isolation and Infection Control
All new and existing wards developed or redeveloped at Morriston Health Campus to have 50% single room occupancy to support improved infection control and an environment that promotes dignity and meets expectation. Standard compliant negative pressure isolation facilities would also be incorporated to meet national need and anticipate growing problems of multi-resistant pathogens and virulent organisms.
The Solution: Morriston Health Campus

Critical Care
Establish a centre of excellence for Critical Care with expanded capacity to manage prolonged level 3 and specialist critical care patients led by the appropriate Critical Care Consultant and supported by all relevant health professions. The current capacity of 28 level 3 beds would be expanded, allowing for the increased demand created by:

- Emergency Medical Retrieval Service and Major Trauma.
- Increasing centralization of surgical procedures across south Wales from ABMU and Hywel Dda Health Boards
- Organ donation services
- Centralising acute medicine with transfer of the “take” from Singleton
- Providing specialised isolation facilities to meet national infection control standards
- Supporting the critical care network and WG plan for the critically ill

Hospital Sterilisation and Decontamination Unit
Opportunity to centralize Hospital Sterilisation and Decontamination which is currently situated in several sites within both the main Hospitals. A future HSDU would be incorporated into the overall Morriston Health Campus but not directly situated within the Hospital thus freeing space for clinical activity. The development of a new HSDU with the latest technology in sterilisation and decontamination would deliver significant economies of scale and efficiencies and could support neighbouring hospitals.

Staff Facilities
Develop facilities for staff wellbeing which encourage healthy behaviours, promote the recruitment and retention of staff, demonstrate strong role modelling and lead to reduced absence from work due to sickness and ill health.

South Wales Major Trauma Centre
In 2013 Health Boards across South Wales agreed, through the South Wales Programme (now Collaborative) to establish a Major Trauma Network for the population of South Wales. Information commissioned through the South Wales Collaborative can be seen in the map adjacent. The isochrones demonstrate that a Major Trauma Centre in Morriston would ensure that nearly all the citizens in South Wales could access a Major Trauma Centre within the ‘Golden Hour’ if needed. Information developed through the Collaborative also shows that a third of all Major Trauma patients in Wales originate in Hywel Dda and ABMU Health Boards.

Modelling of patient numbers and flow which is informed by the operational experience of Trauma Networks in England and which has been presented to the South Wales Collaborative indicates that a Major Trauma Centre serving the South Wales population would require additional theatre capacity, 10 ITU beds and 50-60 trauma beds, all of which ARCH could deliver.

The nascent major trauma network for South Wales and South Powys offers a golden opportunity for us to establish a research strategy with a unique scope, building upon established research strengths, while breaking new ground. Existing research activity spans phases of care, from pre-hospital to recovery, and the education of surgeons in the execution of procedures in simulation. This strategy would provide the opportunity to develop world-leading facilities for the on-going education and review of all clinicians throughout the trauma network. Hosting major research studies, would allow evidence based care to be coupled with local expertise, which could then be translated into education and training programmes to enhance care throughout the network. Expertise has been developed specifically in these fields, drawing heavily upon the experiences of the Defence Medical Services, with whom strong research and education links have already been established.
6.8 Precision and Personalised medicine

Clinical medicine has changed significantly over the last ten years. In the past there has been a fundamentally ‘intuitive’ approach towards diagnosis and treatment, but new tools and techniques are available to allow more accurate diagnosis and precision treatment to be tailored to an individual patient. ARCH recognises the importance of this because people differ in the way they respond to a medicine.

Precision medicine combines the use of new tools allowing more accurate diagnosis of disease with the tailored selection and use of therapeutics to have maximum benefit and minimal side effects for an individual patient. The main objective of this ‘precision medicine’ approach is to provide the right drug at the right dose to the right patient at the right time. This speaks directly to principles of prudent healthcare, particularly to the principles of do no harm, undertaking the minimum appropriate intervention, and including the patient in making clinical decisions. It means applying technology and know-how to making the right diagnosis and selecting the right treatment for an individual patient, at the first attempt.

ARCH recognises that Precision and Personalised medicine provides the opportunity to revolutionise patient care by translating molecular diagnostics and big-data informatics to inform and to deliver sophisticated personalised management for care.

The ARCH Programme would propose to collaborate with global experts in this industry placing the NHS in South West Wales and its population of nearly a million people at the pioneering centre of excellence of this transformation of medicine and the treatment of diseases such as cancer, our ambition is to be a locus of innovation and world-class research in this field that others will follow.

The study and treatment of diseases such as cancer, (and increasingly long term conditions) is greatly enhanced from a detailed understanding of how the disease is affecting an individual patient at the molecular level.

Recent developments in genetic testing and molecular profiling technologies are heralding in a new era of personalised and predictive medicine. Up to now, tests have often been prone to subjective interpretation, and genetic testing has involved only a fraction of the human genome. This is changing rapidly through great improvements in the efficiency in testing with the combination of population based information systems.

The partners in ARCH consider Precision and Personalised Medicine to be a potential revolution in identification, management and treatment of disease. ARCH desires the NHS in South West Wales and more broadly across Wales to be at the centre of this revolution.

The precision medicine pathway is different from the essentially intuitive nature of 20th century medicine which is based on a sequential trial and error approach, in which the risk of side effects from using the wrong drug is traded for the benefit that will eventually come from selecting the right one.

In precision and personalised medicine the doctor draws blood and tissue and a central laboratory then sequences the patient’s entire genome from the sample. This data is then analysed and compared to a secure global ‘bank’ of DNA/other tissue samples, and the outcomes of previous therapies. The completed analysis gives the doctor personalised information about the patient, in the case of cancer the tumor, and an individual therapeutic combination for that individual, including dosage and treatment regimen. These tools are available now for a small but increasing number of illnesses and drugs.
Health Service Provision
A Regional Collaboration for Health

Vision
Wales faces considerable challenges in relation to our health and wellbeing. These are likely to increase in the coming years if what we do in the future is the same as we have done in the past. Public Health Wales’ vision is to achieve a healthier happier and fairer Wales and we have set out a bold new strategy based on a whole public health system drive to tackle inequalities in health and early years’ development, shifting to a partnership model of prevention, improving healthcare outcomes for our patients and protecting the public and continuously improving the services we provide.

6.9 Public Health Wales
The Need
While people in Wales are living longer, and for a greater length of time in good health, these health gains are not distributed equally. A substantial gap continues between the health and wellbeing of our people living in areas of low deprivation compared to people living in areas of high deprivation. People in Wales are also living in greater numbers with multiple long term conditions, as gains in life expectancy have overtaken gains in healthy life expectancy. The origins of many health inequalities lie in early childhood and before birth and must become an increasing focus if we want to improve the health of our population.

Our efforts to tackle the influences on health simply have not had the impact that is required to begin to change the destiny for our population. The way our health system is currently designed simply cannot meet increasing demands. Nor is it financially viable for it to do so in its current model. Our health services are predominantly organised around our hospitals. Yet much of healthcare can and should be provided in the community through primary and community care services.

Such care and support should be driven by a partnership ethos that is about tackling the factors that affect people’s health. Helping people to prevent their ill health in the first place and then preventing their exacerbations of ill health must be thoroughly addressed through good self-care with the provision of excellent health and social care based on best available evidence.

The Solution
Supporting and empowering people to make healthy choices and reduce levels of health risk behaviours remains a key challenge.

Something needs to change and this change, fundamentally involves the NHS. But, it is more about how we embrace an integrated approach to societal health and wellbeing as a country. If we want to become a country where we live to an old age in good physical and mental health, receive healthcare that delivers the best outcomes for us when we are unwell and contributes towards achieving a healthier, happier and fairer society then we need to make fundamental changes to how:

- we actively ensure that our children and young people have a healthy start in life and are enabled to achieve their educational potential to prepare them for a healthier future and a sense of greater wellbeing
- we work with communities and individuals to enable people to make better choices for themselves and their children, feel more confident and can exercise a greater degree of control of their lives
- public services and other partners work in an integrated way to make sure that every contact counts to help people make healthy choices
- we design and organise our health and social care services to become more focused on primary and community services
- we focus strategies to stimulate employment, improve housing and reduce poverty in areas of high deprivation
- public policy drives an integrated approach to our population’s health through a strong and proactive approach that ensures health in all policies.

Physical Infrastructure
- Integrated Health Protection Service (Health Protection and Microbiology)
- Health Intelligence
- Local public health services (ABMU & Hywel Dda UHB Health Boards and Public Health Wales)
- Partnerships with local government, other public sector bodies, third sector organisations, universities and private sector organisations

Impact
- Helping people in Wales to live healthier, longer and fulfilling lives
- Reduction in health inequalities and improvement in healthy life expectancy
- Effective partnership working to support good self-care
- Improved outcomes for patients across a wide range of conditions
- Reduced avoidable harm from healthcare interventions
- Modernised health protection, microbiology and screening services
6.10 South West Wales Cancer Service

The Need
Cancer remains a top priority for Wales. Over the coming years, around 1 in 3 people will be diagnosed with cancer before age 75 and around 4 in 10 at some stage during their lifetime. Cancer is a common diagnosis and the incidence is increasing. Historically, cancer survival rates have been poor, in recent years more and more people live with cancer for many years. Cancer treatment has changed. This good news brings with it a set of new challenges. More care needs to be carried out both in and outside of hospital settings by cancer teams and by generalists such as those in primary and community care including third sector partners, GPs, and care workers.

People living with cancer, need support.
There are big variations in outcomes for people depending on different types of cancer. Of particular concern is the higher number of people who develop or die from cancer among the more deprived communities of South West Wales.

In SWW we have a rising demand for radiotherapy. South West Wales will require a doubling of Linear Accelerators in the next 15 years.

The Solution
ARCH will deliver new service models of cancer treatment:
- Centre of Excellence at Morriston Health Campus (SWWCC) includes
  Patients requiring in-patient care in the SWWCC would be admitted into specialist beds with access to approximately four additional LINAC machines
  - Offering improved access to patients who are travelling from further distances in Hywel Dda.
  - Ambulatory patients requiring overnight accommodation would be able to access the Morriston Campus hotel/hostel.
  - Acute Haematology patients would receive their treatment at the SWWCC at Morriston and this would include at least two specialised cubicles with Laminar flow facility for the treatment of haematological and immunological malignancy.

ARCH brings together service delivery and research: ARCH will build on current cancer research to ensure better treatment in the future comparable with the best in the world. Including increasing the number of appropriate patients included in Clinical trials.

ARCH is working with colleagues developing the Strategic Programme for Cancer Services in South East Wales to ensure all opportunities for collaboration are exploited.

ARCH will engage with the population of SWW as part of a review of services to ensure service design meets their needs with services being delivered as locally as possible.

Research & Technology
Use digital technology to:
- Integrate effective diagnostic screening tools and digital technology to find new ways of researching and treating cancer close to people’s homes
- Improve clinician to clinician and patient communication
- Improve information for patients
- Bring together expertise from clinicians, mathematicians, physicists and engineers to further develop cancer research

Prevention
ARCH will seek to develop:
- Improved information to reduce risk
- Partnerships across service delivery and academia that improve levels of physical activity, reduce smoking, improve diet

Impact
Reduced risk of cancer in the population
Improved cancer detection
Improved quality and access to the best specialist treatment and care
Improved Cancer Research
6.11 Welsh Ambulance Services Trust

The Need

The Trust’s draft Integrated Medium Term Plan sets out a plan to provide an Ambulance Resource Centre (ARC) in Swansea during 2016/17. This will enable the rationalisation of the current estate, which requires investment, and the historic locations are not aligned to meet the increasing operational demand. Social deployment points will be introduced to support delivery of the clinical model, with Ambulances being deployed strategically from the right place at the right time. Existing buildings can be rationalised to shed leasehold buildings and to reduce revenue expenditure on the estate. The preferred location for the ARC is inside the footprint of hospital sites with A&E facilities or as close as possible to them. A&E departments naturally offer a focal point for all ambulance staff and vehicles. A&E’s are a place where all staff and vehicles in the area can be deployed with minimal down time to rest breaks, training, make ready or vehicle servicing.

The Trust’s Headquarters and Training centre at Cefn Coed is lacking basic standard amenities and is inferior property condition. The proposed redevelopment of the larger site by ABMU means that for WAST to remain on that site significant capital investment is required to construct a new energy centre and to bring the building up to property condition B.

The Solution

Ambulance Resource Centre

An Ambulance Resource Centre (ARC) will be required for operational service delivery. An ARC is designed to accommodate a range of ambulance service functions including reporting base for front line staff, office and welfare facilities, local training facilities, parking and garaging for operational vehicles, Make Ready Depot and Fleet Workshop. The Make Ready and Fleet elements provide for the cleaning, restocking, servicing, maintenance and repair of vehicles within the area.

It is proposed that the new Swansea area ARC will support the reconfiguration of WAST’s operational Estate in line with service demand.

Regional Administrative Hub:

Replace the regional administrative base which is currently provided at Cefn Coed.

Training Development:

The Welsh Ambulance Services NHS Trust is in discussion with Swansea University regarding the context surrounding the expansion of Paramedic Science student numbers and the move to degree-level education. We are jointly looking at the provision of Continued Professional Development for registrant staff and opportunities for joint delivery of education. In line with this, we also need to include the requirements for the National Ambulance Training College for the provision of training facilities for non-registrant staff and statutory & mandatory education.

With regard to the proposed joint venture with ARCH at the Morriston Health Campus, the Trust would welcome the development of a new training and education centre and also the opportunity to work collaboratively with both the Health Boards and the University. In addition, plans for future ARCs and MRDs should include a Training facility (similar to the HART centre) with classroom and ICT facilities, to enable local delivery of professional, statutory and mandatory training.

Impact

- Improved emergency service response times.
- Improved quality of care and clinical outcomes for patients.
- Improved synergy with other services
- Higher quality premises including staff welfare
- Introduction of standardised cleaning process
- Better front line staff resource utilisation
- Estates infrastructure which supports WAST’s training and administrative needs locally and nationally

Health Service Provision
A Regional Collaboration for Health
Health Service Provision
A Regional Collaboration for Health

Vision
A world-leading Centre in cardiac, thoracic bariatric and Reconstructive surgery delivering healthcare benefits to patients through the most advanced techniques in surgery and patient care, enabled by integrated hybrid facilities and underpinned by leading research, innovation, translation and training.

Physical Infrastructure
A purpose-built specialist Centre with all the attributes of a global centre of excellence

Hybrid Operating Theatres integrating imaging and surgical facilities co-located with radiographic suites, catheter labs.

Extensive critical care capacity for cardiac surgical intensive and high dependency care, coronary care, recovery from bariatric and reconstructive surgery, interventional radiological and cardiac techniques.

50 beds (25 male and 25 female) with associated in-patient facilities

Research, translation, skills development and educational facility

Impact
- Improved quality and experience of care
- Improved access to care for the Welsh population to meet the highest standards
- Shortened waiting lists and move towards their elimination
- Attract/retain the best global talent in these disciplines
- Develop multi-professional skills and knowledge
- Avoid the need to source capacity from NHS England
- Support the Wales brand through the creation and sustained operation of a world-leading Centre of Excellence

6.12 Centre of Excellence for Cardiac, Thoracic, Bariatric and Reconstructive Surgery

The Need
South Wales has two cardiac surgery centres which together have capacity to deliver of the order of 1400 procedures per annum. The current demand is closer to 2000 procedures per annum. This leads to extended waiting lists (best practice suggests no cardiac patient should wait for more than 6 weeks) which can currently only be mitigated by patients being treated outside Wales.

ABMU is the national Centre for bariatric surgery. Recent NICE guidance is likely to exacerbate already growing un-met demand: the commissioning intentions are already to triple the current activity.

In each of these areas, technological advances and modern procedures are requiring new facilities which are not currently available and cannot be provided without significant capital investment. The use of up-to-date techniques not only improves patient outcomes and experience but also enhances efficiency and develops new skills and knowledge at the leading edge of the disciplines and attracts the best staff. Evidence shows that benefits in quality of healthcare emerge from delivery in higher volumes.

The current infrastructure could be developed incrementally to try and satisfy demand. However, what is needed is a paradigm shift creating a truly global centre of excellence, delivering first-class patient care, and enhancing the skills and knowledge of the staff in a sustainable model of delivery.

The Solution
ARCH to work with the Commissioner to identify solutions to meeting the needs of patients groups in order to:
- provide the capital investment necessary to make the Centre a reality
- facilitate the design of a Centre to the high level specification expected by the ARCH programme
- to facilitate and project manage through the investors supply chain the construction of the Centre
- to equip the state-of-the-art facilities
- to design the physical, technological and human infrastructure necessary to deliver the scale and quality of care required.

The National Assembly for Wales Finance Committee has noted the challenges of financing large capital schemes during a period of austerity and recognises the opportunity for innovative funding models involving the private sector. The recommendation of the Finance Committee was that “Welsh Government should consider using revenue-financed models… subject to robust value for money assessments.” (NAFW Finance Committee 2012)

ARCH as advised by the Commissioner would work to explore delivery solutions across South Wales

“The effective leaders challenge the status quo by insisting that the current system cannot remain and by offering clear ideas about superior alternatives.”
Prof Donald M Berwick, President & CEO, Institute of Healthcare Improvement, Harvard
6.13 Collaborative Healthcare Management

The Need

There is a long standing history of independent healthcare providers within Swansea and the South West Wales region. The current private providers deliver care to private and NHS patients in south wales. ABMU and Hywel Dda UHB, as with all Health Boards, in Wales are challenged with regard to the demand for elective and planned surgical and medical procedures. This is exacerbated by the increasing demand for unscheduled surgical and medical procedures which are forced to occupy theatre time originally allocated to elected procedures. There has been a significant increase in the annual frequency that patients have to wait beyond 26 weeks for a referral to treatment.

Currently, as with other areas within south Wales, there is a growing demand for independent healthcare providers. Independent providers are currently developing innovative ways to increase existing capacity to cater for this rise in demand.

The Health Boards in the south west Wales region have a long-standing tradition of recruiting the UK’s best consultants. Many of these consultants undertake elements of their professional work within a private sector healthcare environment to support the growing demand on independent service providers.

The Solution

ARCH will increase private healthcare capacity using a collaborative service delivery model with the location of a new generation, state-of-the-art facility located on the Morriston Health Campus which will:

- Increase efficiency in the use of the healthcare professional skilled workforce.
- Contribute to the recruitment and retention of high quality staff by recognising and embracing the attractiveness of working across sectors
- Benefit the citizen through the streamlining and simplification of the established pathways across the private and public sectors.
- Providing additional income streams to diversify and supplement the existing health board financial and sustainability plans
- Sharing of world-leading best practice across sectors and disseminate internationally
- Increased flexibility for capacity of service delivery at times of peak demand

This new development will deliver a new and improved level of patient experience to both independent and NHS patients, combining award-winning building design with high quality clinical care and five-star hospitality.

The building itself would be designed to ensure it has leading energy efficiency and sustainability at its core. The new facility, coupled with the high calibre workforce, will ensure that the highest standard of care will be provided for patients.

Impact

- Improved access to healthcare for citizens of the region
- Improved employment opportunities for the health and social care workforce of the region, contributing to retention of talent
- Improved financial sustainability for the Health Boards
- Enhanced value for the health economy and the wider economy of the region
- Enhanced learning opportunities for the workforce

Physical Infrastructure

- Additional ultra-clean laminar flow theatres which reduce infection and accelerate recovery
- Individual en-suite in-patient capacity (including High Dependency Unit)
- Provision of a high-quality MRI scanner capable of detecting the early stages of serious health complications
- Additional capacity in consulting room suites including dedicated rooms for ophthalmology patients and ENT patients.
- State-of-the-art cardiology suite with leading edge diagnostics capability
- Integral endoscopy suite and associated treatment room
- Day ward capacity
7. Economic Development: ILS Medi-Park

Building capacity and partnerships

Vision
An integrated, open, collaborative medical and life sciences ecosystem, developing doctors, healthcare professionals and life scientists working globally to drive research capacity, enterprise and innovation, and skills for the sustainable benefit of the health, wellbeing and wealth of the region and beyond.

7.1 ILS Medi-Park Concept across the Health Campuses

ILS was established as the vehicle for the College of Medicine’s Research, Enterprise and Innovation activities in 2004 and celebrated its 10th anniversary in 2014. The ILS strategy implemented by the College of Medicine has secured £42m infrastructure funding delivering to time and budget, creating in excess of 800 new jobs, attracting more than £50m incremental investment. Medi-Park will transform this momentum into a regional network of centres and activity reaching from Swansea to Pembrok.

Building upon this track-record, the Medi-Park is a regional vision is to support the delivery of ARCH through transformation of skills development and research & innovation capacity to the benefits of its combined healthcare, academic and industrial community. Planned over a period of 24 months it draws upon strengths of each partner to deliver an impact greater than the sum of its parts. Working with its ARCH partners, ILS Medi-Park will realise the following;

- Healthcare Technology Centre
- The Bevan Academy for Leadership and Innovation in Healthcare
- Expanded Joint Clinical Research Facility
- Healthcare and Life Science Skills Centre
- ILS@Morriston, building upon the existing infrastructure of J-CRF
- ILS@Hywel Dda, developing R&D activity in West Wales
- Guest@ILS
- Health and Wellbeing Centre
- Prudent Healthcare centre and intelligence unit

Wider collaboration across and beyond the region will be facilitated through partnerships. Building upon strengths such as mass spectrometry in Swansea and clinical biomedical research in Hywel Dda, Medi-Park will support bench to bedside research across south west Wales.

This will extend beyond the region to include the Welsh Wound Innovation Centre, where another satellite of ILS Medi-Park is being scoped, along with broader engagement through the regional Academic Health Science Collaboration (AHSC). This will build upon the core capacity within the partnership, including engagement with sectors beyond Life Sciences and Health. ILS has adopted the philosophy of open innovation and has developed strong partnerships internally with the Colleges of Human & Health Sciences, Engineering, Science, along with emerging initiatives with Colleges of Business & Management, and Arts & Humanities. Externally, ILS has developed seamless collaborations with Welsh Government (Departments of HSS and EST), NHS, ABMU and Hywel Dda UHB.

Planned Impact:
The Medi-Park will provide significant economic impact through:

- Healthcare Technology Centre
  Job creation: Growth of the research activity within HTC will create new employment opportunities.

- Life Sciences and Healthcare Skills Centre
  Job Creation: Working with employers to support their growth, targeting employment opportunities across Life Sciences and healthcare sectors.

- Employment growth in supported enterprises:
  Continued efforts of the ILS Enterprise and Innovation team will support companies in exploiting research output from HTC, creating more employment across the sector.

Medi-Park will contribute to ARCH as a long-term transformative initiative with impact extending beyond its 10-15 year time horizon.

ARCH: A Regional Collaboration for Health
Economic Development: ILS Medi-Park

Building capacity and partnerships

7.2 International Partnerships of Excellence

ILS Medi-Park will build upon collaborations with knowledge regions including Massachusetts, Texas, Grenoble, Sweden and Ireland to lead and participate in research consortia. The Healthcare Technology Centre aligns with Swansea University’s strategic plan to secure competitive and private research funding from across the globe, and will continue to build partnerships with centres of excellence.

7.3 Healthcare Technology Centre (HTC) and Joint Clinical Research Facility (J-CRF)

Research Excellence

HTC will realise a world-class platform creating a quantum leap in research capacity to a critical mass of ~150 researchers engaged in multi- and interdisciplinary research. Aligned with EU, UK and WG science and research strategies in the Grand Challenge field of Life Sciences and Health, HTC will help realise a target research portfolio annual income of £20m by 2020. Building upon existing Smart Specialisation strengths including mass spectrometry and medical devices, HTC is designed to build research capacity delivering regional and global impact. Long-term sustainable research capacity will be delivered by the refurbishment of the existing real estate, pumpriming of additional research staff and consolidation of the Centre for NanoHealth infrastructure and momentum.

Expansion of research infrastructure and activity across the Hywel Dda region will provide significant scale to the research-led ARCH environment attracting, retaining and developing clinical/academic skills and talent. Efforts will build upon research excellence in fields such as respiratory medicine and tele-health, and establish new fields including through partnership with the Bridge Innovation Centre.

Clinical Research and Translation

Contribution to quality and availability of patient care as well as economic impact of job creation will be supported by translation of research output through the expanded J-CRF activity across ABMU and Hywel Dda sites. The extended reach through Hywel Dda will realise increased scale and scope of research to be undertaken with greater opportunity for patient participation.

This collaboration will expand support for clinical translation and commercialisation of research through an open innovation approach delivered by an integrated Enterprise & Innovation team serving the partnership and wider ecosystem across south west Wales. Existing harmonisation of IP policies between university and health board activities will be extended across partners in the region to facilitate this work. Support from the Bevan Academy for Leadership and Innovation will assist in realising evidence-based developments relevant to and effective for the region’s healthcare system.

Key Collaborations
- Cross-College
  Through the Centre for NanoHealth, HTC will continue to support the growth of research capacity and activity in the Colleges of Engineering and Science.
- ABMU/Hywel Dda/NHS
  Translation of HTC research into health and economic benefit is the pathway to impact realised in collaboration with healthcare partners.
- Private Sector
  J-CRF has become an exemplar of utilising private sector funded research to grow, support and sustain research infrastructure capacity.

ARCH: A Regional Collaboration for Health
Economic Development: ILS Medi-Park

Building capacity and partnerships

7.4 Guest@ILS

The ILS Medi-Park will include a dedicated Life Science hotel and conferencing facility designed to address a current unmet need for an overnight facility in the Swansea region which integrates hospitality, wellness tourism, life science, research and healthcare. Located on the Singleton Health Campus, Guest@ILS will benefit from breath-taking views of Swansea Bay, close proximity to the beach, beautiful parkland surroundings, ABMU ambulatory care resources, the facilities of the Colleges of Medicine and Human & Health Science, and the University’s £20m sports village. Guest@ILS will:

- Be a living expression of world-leading life science and health research excellence undertaken within the region
- Communicate the benefits and impact of ARCH to the public, visitors and guests
- Integrate life science, health and wellness as core themes throughout all aspects of its facilities and resources
- Have medical diagnostics facilities, therapeutic facilities, spa and fitness facilities, as well as food and beverage facilities and a state of the art conferencing centre
- Link with resources in the College of Medicine, the College of Human Health Sciences and ABMU to deliver effective wellness tourism
- Play a part in healthcare delivery through, rest, recuperation, relaxation, exercise and fitness, diagnostics and therapeutics
- Provide comprehensive, personalised health and wellbeing data to guests throughout their stay

The provision of data to guests will be a key defining factor of Guest@ILS. The University’s College of Medicine has world-leading expertise in Health Informatics and can develop sophisticated ways using new and existing technologies to provide meaningful health data to guests during and after their stay.

In addition to data capture and analytics, guests will be afforded the opportunity to engage in meaningful health research programmes underway at the University; these could be trials of new products and services, surveys to help better understand and research healthcare or full clinical trials in the various facilities already available within the ILS.

Guest@ILS will be strategically divided to provide different services for different levels of health tourism within the region, catering for the mid-range high value overnight stay experience, the executive business experience and the high level ultimate health hotel experience. Each division of the facility will utilise common infrastructure and resources which will also be adjoined to an integrated conferencing services centre.

Guest@ILS will be a key driver for a new level of Wellness Tourism in the Swansea City Region which is already gathering momentum and the attention of key stakeholders and government.

Wellbeing

“Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”

World Health Organisation

Guest@ILS infrastructure:

The Ultimate Life Science Hotel experience, including:

- Multiple overnight stay facilities with a range of star ratings
- State of the art conference centre for the region
- Therapeutic treatments
- Exercise and fitness
- Medical diagnostics
- Sleep enhancement
- Rest and relaxation
- Mindfulness and meditation
- Research study participation
- Skills and education

Guest@ILS mission:

“To propel the Swansea City Region to a new level of wellness tourism whilst showcasing its world-leading expertise in healthcare and life science.”

Global Wellness Institute, 2015

Policy and medicine move too slowly, and we cannot wait for WHO to create a wellness division. Private companies and public/private partnerships are not waiting for anybody. We need corporations to invest in wellness, and people who want to create a healthier world need to look to them for investment.

Global Wellness Institute, 2015
7.5 Health & Wellbeing Centre

The Aim
To contribute to the health and social wellbeing of local communities through the provision of a range of services that serve to complement NHS delivery and that offered by a number of relevant partner organisations e.g. local authorities, Grŵp Gwalia.

Mission
To establish a fully integrated approach to health and social care that provides people with an appropriate range of choices and opportunities, allowing them to responsibility and make informed decisions about their own health, in line with the principles of Prudent Healthcare.

Delivery
The successful implementation of prudent healthcare in Wales can only be accomplished through a concerted, cohesive and co-ordinated approach to optimise the health outcomes of the communities within the region and further afield. The Health and Wellbeing Centre will provide an environment that complements the current health and social care landscape, by offering alternative routes for patient diagnostics, assessment and management to complement services provided by the statutory and third sector organisations.

This will be achieved by:

- Delivering health and wellbeing services based on a holistic approach. Health and social care is increasingly about long-term condition management, which includes individual contributions that people can do to improve their own health. The Centre will support and complement service provision from statutory and third sector organisations, to include prevention, assessment, education, treatment, support and on-going management of patients, their families and carers as appropriate.

- Influencing a change in attitudes to health, well-being and care. The Centre will provide the facilities and environment to stimulate behaviour changes, to enable them to choose wisely and alleviate problems associated with unnecessary demands and excessive use of limited health and social care services. It will facilitate public meetings and host educational conferences that allow individuals and communities to be furnished with relevant evidence-based information, to engage with the services available and to be made aware of the opportunities available to enhance their health status.

- Evidencing models of good practice in health and wellbeing through Research & Development. The location of the Centre in the midst of an academic environment affords benefits for patients, communities, professionals, students, educators and the wider stakeholder constituency. The implementation of the ‘only do what only you can do’ maxim emerging from the Prudent Healthcare agenda requires the marriage of evidence, professional skills and judgement and an informed population. The research environments within the School of Medicine and the College of Human and Health Sciences provide the underpinning knowledge and awareness that can enable professionals working in the region to inform their clinical practice and patient management schemes, with the population of the region being the recipients and beneficiaries of a modern, innovative and fully engaged workforce across all aspects of the health and social care system.

- Collaborating with key stakeholders to deliver appropriate health care packages. The notion of co-production is one that has increasing resonance and which the Centre will be keen to develop in conjunction with a range of partner organisations. Provisional discussions are already in progress to assess the feasibility of collaborative ventures and conversations with various professional groups, third sector organisations are indicative of interest and excitement at the prospect of the development of the Centre.
Economic Development: ILS Medi-Park

Building capacity and partnerships

7.6 Healthcare and Life Sciences Skills Centre

Medi-Park will further support ARCH with a 21st century environment for talent and skills development providing a pipeline, delivering the world-class doctors, healthcare professionals and life scientists for the regional and national health, wellbeing and economic ecosystem. Opportunities will be delivered across south west Wales. The Centre will respond to evidence-based workforce development requirements from ABMU and Hywel Dda Health Boards and address the challenges posed by the WG Regional Learning Partnership’s assessment of industrial sector needs.

Although based at the Singleton Health Campus, the Healthcare and Life Sciences Skills Centre will work in harmony with the specialist clinical education centre at Morriston as well as operating across the ABMU and Hywel Dda Health Board regions. The aim is to provide the broad range of initial and ongoing professional development requirements of the Life Science and Healthcare sectors.

Realised as multi-professional development environment, the Centre will support skills development and practice for Graduate Entry Medicine (CoM), and Nursing and Allied Health Professionals (CoHHS), along with a range of other clinical and industrial skills programmes. Through partnership with Gower College Swansea, Medi-Park is creating a vertically-integrated skills development strategy by establishing the Talent Bank for 16-19 year-olds embedded within the Centre. This will allow retention and development of indigenous talent whilst also attracting the brightest and best from outside the region.

The attraction, retention and development of clinical and academic opportunities is an integral element of ARCH alongside the development of an indigenous talent pool. This will be achieved by establishing south west Wales as an environment with world-class opportunities for practice, innovation and professional development at all stages of careers and across the Healthcare and Life Science sectors.

A fully vertical and integrated skills facility will provide for a range of skills development opportunities and sector specialisations for A-Level students through to specialist networks for clinicians and scientists. ILS Medi-Park will exploit its academic, clinical and industrial scope to maximise opportunities across the partnership.

A further element of the integrated skills strategy has led to the development of a foundation degree programme in Life and Health Science as part of a Higher Apprenticeship Framework currently being designed for Wales. The ILS Medi-Park Skills Facility will provide an environment to develop and deliver future strategies to address the gap in the skills development pipeline and widen the access to the region.

The Talent Bank:
- Represents a quantum leap in the calibre of scientific, health and digital talent across the Swansea Bay City Region from Pembrokeshire to Neath Port Talbot
- Has a hand in the shaping of learning and development provision to meet local skills needs
- Develops life science skills in 16-18 year old learners undertaking STEMM-related A-Level studies or newly offered Life Science and Health Higher Apprenticeships.
- Collaborates with industry to offer a range of compulsory work experience placements, as well as real world life science projects embedded within courses
8. The Skilled Workforce
A Regional Collaboration for Health

8.1 Context

The workforce is the primary driver of current and future health and social care costs, with at least 70% of expenditure of Health Boards being consumed by wage and salary payments.

In considering future workforce requirements within health and social care, it has to be remembered that professionals have traditionally been trained and developed to work in a system that is primarily based on hospital-based care, whereas the majority of current and future demands for health and social care arise from an increasingly elderly population with multi-morbidities whose needs require multi-skilled staff working in an integrated environment across professional and organisational boundaries and across different settings. The demographic challenge is one of a number that confronts the shape of the future workforce in health and social care.

- Nurse recruitment represents a significant challenge for Health Boards and commissioners of educational provision and there is little evidence that this will change significantly in the short-medium term.
- The supply of GPs also represents a significant challenge in seeking to re-focus care away from the hospital and move towards a system of delivery nearer to the patient in primary and community care.
- Conversely, the supply of hospital doctors appears to be relatively healthy, but there are noticeable shortages in certain specialities, where needs appear to be greatest, such as paediatrics, emergency medicine, psychiatry and elderly care.

Workforce planning within health and social care has traditionally adopted an incremental approach, has focused on secondary health care and been profession specific. Furthermore it has not fully considered the developmental skill needs for the unregistered health and social care workforce. There is a pressing need for a stepped change in the workforce knowledge and skills requirements to adapt to meet the changing needs of the population and their demands for health and social care services.

The review of health professions education and development (WG 2015) highlights the need for a fundamental change in the approaches to training and development, with greater emphasis on team development, based on a wider range of skills to meet increasingly complex patient needs, but at the same time ensuring that basic care requirements of the population are addressed, using generalist and specialist provision, as near to patients’ locations, so as to avoid the situations clearly evident in today’s context of unnecessary hospital referrals and admissions, thereby scuppering the drive to re-focus care provision. Further, the need for thinking around waste reduction, improvement methodologies and lean manufacturing approaches should be brought to bear on workforce planning and change the number and type of staff required for the future health and social care workforce.

Recommendations:
- Establish an Advisory Group involving educators from Primary, Secondary, Further and Higher Education to consider the development of a joint age-related curriculum
- Ensure coherence across regional policy including the Swansea Bay City Region, Powys and Ceredigion Regeneration Strategies and the work of the Life Science Sector Panel through Economic Renewal: A New Direction
- Continue to Develop a strong network with regional businesses to support the sector and its development

Life Science: Skills for Life, Regional Learning Partnership, 2014

Skills Policy for Wales

Like all other nations, we cannot afford to ignore the fact that we are part of a global race to develop our skills. It is these skills that will define our future competitiveness and support Wales to evolve into a highly-skilled nation capable of raising productivity, reducing barriers into work and supporting people into employment. To achieve this future vision we must recognise the major policy challenges facing us over the next decade and agree on the action needed to affect change in the long term.

Welsh Government, Policy Statement on Skills, 2014
The Skilled Workforce
A Regional Collaboration for Health

8.2 The Changes Required

ARCH aims to:
- Challenge assumptions about how health and social care is delivered, who delivers it and where it takes place, by establishing strategic initiatives that enable the development of sustainable and efficient models for joint workforce education and skills/practice development from a range of professionals in an integrated and timely manner.
- Reconsider approaches to training and development
- Utilise and develop the benefits of information and technology in delivering care
- Seek ways to make the best use of resources to promote innovation in skills and workforce development across the health region and education sectors that are aligned to population health needs.
- Develop and manage the delivery of collaborative learning environments to promote interdisciplinary practice, knowledge and understanding
- Establish policies and procedures to facilitate strategic collaborative recruitment and support innovative and creative strategies that develop advanced professional roles in line with system requirements
- Develop existing simulation and clinical skills facilities to underpin the drive for multi professional skills education and to provide an environment for talent and skills development
- Collaborate with FE to implement and realise the Talent Bank programme for 16-18 year-olds
- Propose creative skills training and development schemes for the unqualified workforce.
- Develop integrated strategies for advanced and changing professional roles which are responsive to service changes that enable health and social care provision to be both sustainable and prudent.
- Propose models that facilitate ‘collaborative practice development’ working across professions, promoting team based education and training and inter professional dependence
- Work with the Bevan Academy to drive and inspire leadership skills and workforce redesign
- Collaborate with, and give cognisance to, key partners e.g. Welsh Government, FE/HE collaborators, and the Mid Wales Healthcare Collaborative, to further support and inform workforce developments
- Identify and build on examples of good practice

The utilisation and development of information and technology in the education and training of the future workforce is a component in changing the nature of the workforce in health and social care. Diagnostic developments, precision medicine, telehealth and the like have empowered patients and professionals and the establishment and development of ARCH provides an environment whereby professionals, scientists, decision makers and policy makers can interact with information and technological developments to enhance the speed and quality of care afforded to patients in the future. Further, the nature of the ILS Medi-Park developments within ARCH, such as the Bevan Academy for Leadership and Innovation, can contribute to the investment in human capital required to prepare and equip the future professionals required to meet the health and social care needs of subsequent generations. The reputation of the University in its educational programmes and research activities is on an upward trajectory. In the provision and facilitation of relevant education, training and development programmes, it is key to promote the interdisciplinary working across the healthcare professions with a more rounded understanding of the delivery of healthcare.

ARCH: A Regional Collaboration for Health
8.3 Education & Talent Development

The Need
- Long-term plans for education, training and development to address the needs of changing healthcare delivery
- Multi- and interdisciplinary skills to be developed across departments and organisations to facilitate integration of services
- Long-term, flexible and proactive funding provision for appropriate skills development
- Recruitment of highly skilled staff
- Retention of highly skilled staff and further investment in their training
- Appropriately trained staff to address the knowledge and skills gap amongst professional groups
- Develop community care skills
- Training and learning increasingly to be work-based learning,
- Alignment of quality and standards between health and social care
- Reduce workforce average age
- Further integration of research and development work within health and social care environments
- A more dynamic and proactive method of staffing health and social care on a day-to-day basis
- Reduce staff sickness and ill health
- Integrated knowledge management facilities
- Changing training and educational provision to suit patient-led care
- Upskilled workforce for a digital era
- Reduced bureaucracy to improve efficiency
- Additional physical resources for education and training on each health campus integrating the work of the Colleges of Medicine and Human & Health Science and the Health Boards

The Solution
- Create a flexible, integrated, long-term supply pipeline and workforce development plan which includes creative models to support recruitment
- Allow staff rotation to develop multidisciplinary skills and insight
- Develop additional advanced practice roles and explore need for different practitioners and professionals, for example Assistant Physicians and Nurse Practitioners
- Include a higher number of clinicians in faculty development activities
- Ensure a physical presence of the Colleges of Medicine and Human & Health Science in the Health Campuses, and within Health Boards
- Strategic, collaborative recruitment targeting the younger population
- Offer more opportunities for upskilling to improve knowledge and aid retention of staff – make this common-place
- Propose models that facilitate ‘collaborative practice development’ across professions, promoting team-based education and training and inter-professional dependence
- Significantly increase the opportunities for integrating research with practice – more dual contracts and clinical academics
- Ensure that wellness and wellbeing are incorporated into development pathways
- Work with regulatory bodies to influence change where required
- Joint workforce education and skills/practice development from a range of professionals in an integrated manner
- Provide clinical examination suites for education and training purposes
- Improve the integration of wellbeing and therapy skills into practice
- Further develop work-based learning strategies and programmes, synergistic to new, developing care and service models.
- Provide informatics and IT training to capitalise on digitisation opportunities
- Promote and facilitate cross-working between Life Sciences and clinical practice
- Promote the interaction between social work and clinical professions during skills development phases
9. Rural Health

A Regional Collaboration for Health

9.1 Wales Centre for Rural Health

The Need

“An increasing proportion of the population moving into the over 65 age group is a general feature, but in the case of rural areas its effect is infinitely more acute than elsewhere (the proportion of people over 65 in rural communities is expected to increase by about 30% in the next 23 years). The implications of this factor in the context of rural Wales are obvious to all.

Two features, more than any others, fundamentally distinguish the rural from the urban scene in Wales. Neither of these is classically a health factor but in each case it impacts massively upon health conditions. They are firstly, the problem of access to services for those living in the more remote communities; and secondly, the difficulties experienced in integrating the services provided for the individual, some of which are NHS based with the remainder emanating from local government.

In approaching these matters, we have constantly reminded ourselves that health cannot be regarded in isolation from the backcloth of social, economic, housing, transport (both private and public), and social care matters. A more holistic approach is called for.

We are acutely aware that the planning of health and social services in rural areas inevitably involves striking a balance between factors of access, quality, cost, and critical mass, but the last named should not be regarded as the ultimate determinating factor.

The aim at all times must be to provide services at a point as near to the patient as possible, consistent with safety and quality whether those services consist of hospital admission/attendance, domiciliary visits or telemedicine.

Health like every other public service should always be open to improvement by way of progressive and enlightened reform. We very much bear in mind the Welsh proverb “Nid da lle gellir gwell” (nothing is good which can be improved upon).

Lord Elystan Morgan, Chair of the Rural Health Plan for Wales.

The Solution

The work of the Rural Plan was taken forward by the Rural Health Implementation Group (RHIG) which was charged with defining the solution to the need described by Lord Morgan.

“The RHIG has led and overseen, at a national level, a programme of work designed to test and evaluate new ways of planning and delivering care to address the specific healthcare issues facing people in rural communities. The RHIG has produced a series of papers designed to share the learning to inform and support Health Boards and their partners to address the needs of rural communities. With the drive to deliver much more care at or closer to home in all parts of Wales, the learning from the RHIG’s work can be used, more widely by Health Boards and partners to develop new and improved ways of working in more urban areas as well as rural ones.

Although the three year term of the RHIG concluded in March 2013, it recommends Health Boards collaborate to ensure a continued national focus to oversee the sharing and spread of the learning from new service models and workforce roles. This national focus could take various forms, such as an a strategic partnership between the NHS, academia, third sector, industry and service users through a Centre of Excellence to promote the economic, as well as health gains, of technology across Wales.”

The Wales Centre for Rural Health will realise the Centre of Excellence recommended to Welsh Government, building on the vision originally described by Lord Morgan and help provide a workforce skilled and suited for rural healthcare in Wales.
10.1 Context

The Need

The need to strengthen leadership and innovation across the sphere of health and healthcare in Wales has been identified as an important feature across the Bevan Commission’s work to date. We need to maximise the opportunities presented by the Bevan Commission and to exploit the legacy of the name ‘Bevan’. The Bevan Commission has identified that there is a requirement for:

- The robust application of high quality, evidence, drawing on rich seams of quantitative and qualitative research
- Promoting and facilitating a secure environment for senior executives in NHS/public services to hold leadership debates
- Enabling NHS Wales to explore and assessing the relevance and potential of models drawn from across the world addressing population health and healthcare service delivery.
- Providing informed comment about future models for the provision and delivery of healthcare in Wales, to promote “disruptive thinking”, to examine the relationship between the citizen and state and to act in certain circumstances as an advocate for citizens in Wales.
- Building capacity in policy development and aligned strategic thinking by working collaboratively with other UK and Welsh stakeholders
- Promoting, applying and assessing Prudent Healthcare and the principles which underpin it as the defining feature in achieving a sustainable NHS in Wales based on equity, justice, the continuing pursuit of quality and citizen involvement and ownership.
- Enable participants to gain experience from wider afield including industry, as part of innovative development exchanges, building upon links and opportunities with the Institute of Life Sciences (ILS) in Swansea and other academic institutions.

Resources for this will need to be sought as part of its future development plan.

The Bevan Commission, August 2014

The Solution

The Bevan Commission and its proposed Trust will aim to become an International Centre of Excellence for Health Service Development and innovation. It will aim to be a leading independent change agent, bringing together a range of experts and partners and resources from the public, private, academic and third sectors, to help find solutions together, to improve and strengthen health in Wales.

We propose that a Bevan Leadership and Innovation Academy should be established. This would support and encourage LHBs to identify potential candidates (Bevan Exemplars) to be mentored through a programme of leadership development and innovation, drawing from and upon the skills, expertise and resources held by the Bevan Commission and its members. It is anticipated that this proposed Academy could be linked to academic institutes and other leadership initiatives in Wales to feature as an aligned programme of work which could support the development and testing of innovative approaches and promote leadership, consistent with the Bevan Commission Prudent Healthcare principles and the big questions posed. The Bevan Exemplars could also help support the work of the Commission by undertaking, presenting and implementing aspects of work in support of the agenda. Professor Sir Mansel Aylward, Chair, Bevan Commission

The Bevan Academy for Leadership and Innovation, as described by Sir Mansel, has been established as a partnership between the Colleges of Medicine and Human & Health Sciences. The Bevan Academy will be incorporated within the ARCH initiative, enabling it to call upon and influence the ecosystem as its laboratory of research and study.

A Wales Centre for Prudent Health will be established along with a Wales Centre for Rural Health, both of which will be contained within the Bevan Academy.
Bevan Academy for Leadership & Innovation
A Regional Collaboration for Health

A Centre of Excellence for Prudent Health
The Wales Centre for Rural Health will be a centre of excellence for research and development in service and technology innovation designed to propose and implement changes in healthcare delivery in line with the principles of Prudent Healthcare. The Centre brings a number of existing Centres and organisations under one umbrella of Prudent Healthcare excellence.

10.2 Wales Centre for Prudent Healthcare

The Need
Prudent healthcare is built around a set of principles, which state that any service or person providing care should:
1. Achieve health and wellbeing with the public, patients and professionals as equal partners through co-production.
2. Care for those with the greatest health need first, making the most effective use of all skills and resources.
3. Do only what is needed and do no harm, no more, no less.
4. Reduce inappropriate variation using evidence-based practices consistently and transparently.

PHc attaches value to patient outcomes, rather than purely focusing on the volume of activity and procedures delivered, and in doing so aims to rebalance the NHS and create a patient-centred system.

There is a requirement in Wales for a facility which will:
- Support the implementation of prudent healthcare by health boards, primary care clusters, community resource teams
- Develop skills, capability and partnerships to deliver relevant research, intelligence and evidence analysis to support the prudent healthcare agenda
- Contribute research to support an evidence base for effectively implementing prudent healthcare
- Bring together the relevant academic disciplines and health services to support prudent healthcare implementation.

The Solution
The Centre for PHC will be equipped to answer the following kinds of questions:
- What is the need for specific areas?
- To what extent is the need for services preventable?
- Are there inequalities in distribution of the problem or in outcomes of care?
- What are the patterns of service use in primary, secondary, social & self-care?
- What is the evidence base for service interventions?
- What are user and carer perspectives on the topic and of services provided?
- What are the interventions that give the best outcomes, from a variety of perspectives?
- What population health gains are achievable for a given population?
- What is the optimal balance of service interventions within a given financial envelope?
- How can service change be effectively implemented?
- How are ethical or legal considerations best managed in implementing PHC?

The Centre for PHC will collectively comprise the following components:
- Farr Institute
- Administrative Data Research Centre
- Swansea Centre for Health Economics
- Department of Psychology
- Department of Inter-professional Studies
- ABMU Informatics
- ABMU Service Improvement Team
- ABMU Patient Experience Leads
- ABMU Finance
- NWIS
- Third and private sector organisation

Centre for Prudent Healthcare Partners:
College of Human & Health Science
College of Medicine
ABMU Health Board
Hywel Dda UHB
NWIS
Third Sector organisations
Private Sector organisations

The Centre for Prudent Healthcare will:
- Work with LHBs to identify the research and intelligence needs of PHC programmes
- Identify and agree cross cutting commitments from Swansea University Colleges, LHBs, PHW, local government, third sector and private sector
- Undertake and co-ordinate research and intelligence activities to produce high quality evidence and analysis
- Promote and support the use of highly engaged methodologies which facilitate co-production and shared decision making
- Support design and implementation of effective evaluation methodologies which inform changes to future approaches
- Promote a ‘do once for Wales’ approach to research and intelligence

ARCH: A Regional Collaboration for Health
11. The ARCH Programme
A Regional Collaboration for Health

11.1 Site Developments and Planning

11.1.1 Morriston Health Campus

**Morriston Health Campus**

**Morriston Health Campus** will become the Major Acute Centre for South West Wales. The Health Campus will include PHW Laboratories, ILS MediPark, Specialist Cardiac centre, creating an environment of treatment, education and research.

**Physical Infrastructure:**

**Health**

(As described in more detail earlier in document)

- Acute Hub including expanded ED capacity
- South West Wales Cancer Centre
- Obstetric, Neonatology, Acute Gynaecology, Paediatrics centre
- Specialist Cardiac, thoracic, Bariatric, Reconstructive Centre
- Additional Medical and Surgical ward capacity
- PHW Laboratories
- WAST Laboratories
- Independent Provider(s)

**Physical Infrastructure:**

**Economy & Skills**

- New ILS@ Morriston facility for translation and commercialisation of clinical and health research
- Morriston Health Campus Education Building in collaboration with the Colleges of Medicine and Human & Health Sciences
- Guest@ILS, Morriston. State of the art overnight facility for rest and recuperation
- Economy and skills collaboration with private provider(s)
Singleton Health Campus

Singleton Health Campus will become a state of the art co-production environment comprising non complex, short-stay services immersed in a teaching, research, innovation and translation culture.

11.1.2 Singleton Health Campus

Physical Infrastructure: Health

(As described in more detail earlier in document)

- Integrated primary and community care hub for the region
- Short Stay Surgery
- Ambulatory Care
- Reablement Centre
  - Rapid diagnostics and assessment
- Step Up Wards
  - Mental Health older adult assessment facility
- Third Sector engagement

Physical Infrastructure: Economy and Skills

ILS Medi-Park:

- Guest@ILS overnight environment with conference facilities
- ILS Healthcare Technology Centre for translation and commercialisation of medtech research
- ILS Health & Wellbeing Centre
- Bevan Academy for Leadership and Innovation, including:
  - Wales Centre for Rural Health
  - Wales Centre for Prudent Healthcare
- ILS Life Science Skills Facility including the Life Science Talent Bank
Hywel Dda Health Campus

Hywel Dda Health Campus will utilise cutting-edge developments to help support our residents with the ethos of ‘care closer to home’ alongside collaborative, forward thinking and fit-for-purpose skill-set development initiatives for the workforce.

11.1.3 Hywel Dda Health Campus

Physical Infrastructure: Health

- Integrated community and primary resource centres
- Dementia friendly living centres
- Community diagnostic hubs including point of care testing
- Development of telehealth and telemedicine services to be rolled out at scale to support safe and prudent health service delivery

Physical Infrastructure: Economy and Skills

- ILS @ Hywel Dda for the development of R&D activities, technology advancement and the translation and commercialisation of research activity
- State-of-the-art simulation centres for safe and efficient upskilling of the workforce
- The expansion of the Talent Bank concept into the Hywel Dda UHB region for the development and retention of home-grown talent
The ARCH Programme

11.2 Finance

11.2.1 Financing Principles

The effective financial management of ARCH requires clear accountability and ownership of responsibilities between the Partners, and relevant Stakeholders, to be clearly set down, understood and agreed. It will require rigorous business case development and focused delivery throughout the Programme life. The management of the overall Programme will require sufficient, suitably skilled and committed leadership. It will be important that the interdependencies, and critical timeline of those dependencies, be established and managed.

Above all, it is fundamental to success to place benefit delivery at the heart of the Programme and to enable the delivery and demonstration of benefits a strong risk management approach needs to be embedded throughout all Programme activities.

The financing of the collaborative vision is proposed to be achieved by establishing and aligning the capital funding streams attributable to each component development owned by respective partners. The financing of the collaborative vision also requires agreement on the arrangements for funding shared infrastructure, such as roads and facilities, across Partners at both health campuses. Morgan Blake has advised on the legal mechanisms available to achieve this.

The financial principles governing ARCH are proposed as:
- Identification of a Lead Partner (body corporate) for overall Programme Financial Management and Accountability
- Each component development has clear ownership and responsibility for financing assigned
- Each component development has identified capital financing, or options for capital financing, based on funding models established elsewhere in the UK
- An agreed sharing of common infrastructure costs, through a structured legal set of agreements, with bridging finance proposals
- Net Revenue operating costs of Capital infrastructure, less savings from released infrastructure, to be resourced by each partner based on their ownership responsibilities for component developments
- Net Revenue operating costs to be confirmed by each Partners as available with its Corporate Plan or Business Plan
- Any resourcing to Strategic Partners from NHS Commissioning budgets to be agreed with Commissioner and contained within commissioning intentions and Plans as appropriate
- The financial inter-dependency of each development component to be limited by the sharing of common infrastructure costs
- Co-investments provided between partners will be dedicated to the achievement of the ARCH vision, with arrangements established to ensure their ongoing application into achievement of the long-term ARCH ambitions.
- The approach to financing the capital requirements, to be clarified and confirmed within the Strategic Programme phase of the development, to be based on transparent evaluation and best value
- The NHS Capital Financing of the Health Boards and other Health Components to be explored through innovative financing arrangements learning the lessons from the Velindre Hospital Programme.

11.2.2 Maximising Component and Collaborative Benefits

The next stage of development, the Strategic Outline Programme, would explore in more detail the options for delivery of each element, utilising best practice in the 5 case Business Case model, in relation to the modelling of delivery options, financing options (including innovative finance), benefits realisation, risk, economic appraisal and financial affordability for both capital and revenue.

The Strategic Programme will develop and quantify the benefits and impacts of each component set down in the prospectus and also develop further and quantify the benefits and impacts generated by the inter-relationship and synergy of the development components. The Strategic Programme will set down clear KPIs and benefits evaluation criteria for the Programme, at both development component level and the collaborative level.

The estimated capital costs have been calculated at a high level based on a current cost base. Future iterations of the proposed developments will provide a more robust cost envelope and take account of any inflationary price changes.

Value

ARCH is based on the principle of collaborating for value. The sharing of NHS land and building assets for regional collaborative benefits, across a range of stakeholders, underpins this model. The individual benefits from each development component are reinforced, strengthened and magnified as the collaborative benefits extend across health, science, skills, education, economic development and employment.
Both the Morriston and Singleton sites are owned by ABMU. The proposals contained in this prospectus contain requirements for space on both sites from a number of partners. Indicative high level capital costs for the delivery of each element of the collaboration have been included to provide a basis for initial affordability estimates. These have been modelled on the assumption of the high level space requirements from each partner. Specialist advisors, including WYG (Planning Consultants) and Lee Wakemans (ABMU Health Board Cost Advisors) were commissioned to assist with this exercise.

The total core health capital funding requirement less potential land sales proceeds is estimated to be in the region of £481m. The requirement for a number of new Primary Care & Community Care developments across ABMU and Hywel Dda UHB will be explored.

There are other health opportunities which would require an estimated capital investment of £114m.

The capital financing for the core health components will be explored through the development of a Programme Business Case. The Programme will learn the lessons from innovative finance programmes and projects within Wales and across the UK. It is important to highlight that it would be possible to extend the scope of this work to include the other identified NHS components. ARCH is a scalable Programme. This wide ranging review would funnel options through a rigorous evaluation to ensure any preferred option maximised value and was clearly in the public interest. The affordability of any preferred option would be presented within the Programme Business Case. To ensure appropriate specialist advice, it is proposed that this strategic review would be supported by appropriate external advisors. The Programme considers there may be opportunities through European structural funds and other agencies for funding to support the infrastructure costs.

The potential savings and costs deriving from ARCH service modernisation would also be investigated and assessed within this Case to develop a full understanding and appreciation of the costs, savings and benefits flowing from the ARCH Programme. It will be important to evaluate these components across the full range of sectors affected by ARCH.

The University’s requirements at Singleton, Morriston and across Hywel Dda would be provided by Swansea University through a number of sources including direct Welsh Government investment and European Structural Funds, while also targeting investment through the UKTI Innovation Gateway provided by Treasury. The net capital funding requirement after the receipt of potential European external funding is estimated at £114m.

The construction of each component would require funding to be sourced by each partner.

11.2.6 Disposal Strategy

The site development plans contain potential opportunities for the disposal of elements across all sites. Sales proceeds would be available to fund the proposed developments for the NHS components and estimates are included in the figures above.
ARCH will be delivered through five main collaborative themes: Infrastructures; Service Delivery; Skilled Workforce Development; Research and Innovation; and Rural Health. The work within these themes is managed and coordinated by the ARCH Delivery Leadership Group and governed by the ARCH Programme Board. The business of the ARCH Programme Board is then reported into the governance of each partner.

11.3 Governance & Leadership

The ARCH governance structure has been approved by the partners and is already in operation. At the time of writing, the ARCH Programme Board has met formally on two occasions, as had the ARCH Delivery Leadership Group. Prior to this, the ARCH Delivery Leadership Group has met informally every week for 6 months. All of the groups in the above governance structure have approved terms of reference and fit-for-purpose memberships tasked with the delivery of the programme. Work is already underway within the domains of each collaborative theme.
11.4 Programme Management

The aim of the Programme Office is to enable the delivery of the ARCH Programme on behalf of the three partners: Abertawe Bro Morgannwg University Health Board, Swansea University, and Hywel Dda University Health Board.

The functions of the Programme Office will include:
- Overall Programme Management: Planning, delivery, detail design, co-ordination, communications and financial control
- Interface with Welsh Government, collaborative partners and private and third sectors
- Development of Programme Business Case and all subsequent Business Case requirements
- Operational development and implementation of Programme Stakeholder Management, Engagement and Communication Framework
- Clinical engagement across the Health Community
- Operational development of detailed Programme Plan for all elements of the ARCH Programme
- Management and co-ordination of Programme Advisors to include:
  o Statutory Planning
  o Architects and Cost Advisors
  o Surveyors and Environmental Consultants
  o Legal Advisors
  o Specialist Financial Advisors
  o Healthcare Planning
  o Communication/Engagement Specialists.
- Programme Component Project Management
- Leadership of Programme Funding Strategy
- Development and discharge of Statutory Planning Requirements
- Development and Implementation of Programme Capital Infrastructure requirements to support associated service plans
- Interface with Programme funders and leadership of investment processes particularly should an NPD Partnership Funding model be required
- Co-ordination and management of Programme timeline including project dependencies and critical path
- Provide support and administration to the Delivery Leadership Group and its five Collaborative Teams and ensure their activities are co-ordinated within the overall Programme Plan and that benefits are realised
- Programme secretarial support and administration

The Programme Office will also require support from Specialist Advisors. It is proposed to engage certain Specialist Advisors from the recently established Welsh Government arrangements to support such programmes, other Specialist Advisors would be engaged through local arrangements.

The Programme Office resource is considered sufficient to deliver the SPBC Phase of the Programme. Experience from elsewhere indicates that this will require review and reinforcement as the Programme develops.
The ARCH Programme

11.5 Risk Management

Risk Management

Risk management is the systematic process of understanding, evaluating and addressing risks to maximise the chances of objectives being achieved and ensuring organisations, individuals and communities are sustainable. Risk management also exploits the opportunities uncertainty brings, allowing organisations to be aware of new possibilities.

The Institute of Risk Management, 2015

11.5.1 Risk Management Policy

The risk management policy of ARCH is to adopt best practices in the identification, evaluation, and cost effective control of risks to ensure that, as far as may be practicable, they are eliminated or reduced to an acceptable level. It is acknowledged that some risks will always exist and will never be completely eliminated. All partners must understand the nature of all risks and accept responsibility for risks within different areas of Programme Delivery.

11.5.2 Risk Appetite

ARCH will generally take a ‘risk-aware’ rather than ‘risk-averse’ approach to Risk Management. However, much less risk-taking is tolerated in some areas compared to others, such as in critical elements of health service delivery, academic quality and finance (particularly where public funding is concerned), compared to activities such as ground breaking research and early product development. This makes it somewhat difficult to accurately quantify a holistic risk appetite for ARCH. ARCH does recognise, however, that risk-taking is essential in order to improve and innovate but also that these risks are to be properly managed.

11.5.3 Risk Management Cycle

11.5.4 Risks, Assumptions, Issues, Decisions Log

ARCH has developed a RAID (Risks, Assumptions, Issues, Decisions) Log which is already active. The RAID log is updated periodically and reports to the ARCH Leadership Delivery Group. As the ARCH Programme Office becomes fully established, it will take responsibility for administering the RAID Log, reporting it through the ARCH Governance Structure and actively managing risks on a daily basis through its dedicated Project Managers.
The ARCH Programme
A Regional Collaboration for Health

11.6 Benefits and Impact

The diagram below demonstrates the range of benefits that will be achieved through the ARCH programme. One could imagine the benefits to be vast in range but for the purpose of this prospectus they have been distilled to benefits to: healthcare; people and communities; the health economy; the life science and health workforce, research and science; the regional economy; and the brand and reputation of Wales.
The ARCH Programme
A Regional Collaboration for Health

11.6.1 Healthcare
ARCH will facilitate enhanced integration of service provision, co-locate expertise and facilities and strategically embrace collaboration with the third and private sectors, maintaining excellent physical and mental health outcomes, reducing waiting times and ensuring that care wherever possible is in the community.
Smart KPIs: All from the NHS Outcome Framework: Preventing people from dying prematurely, improved quality of life for people with long-term conditions, People recovering from episodes of ill health or injury, people have a positive experience of care, treating and caring for people in a safe environment and protecting them from avoidable harm.

11.6.2 People & Communities
ARCH will place people and communities at the heart of an integrated strategy seeking to create high quality, sustainable employment aligned with Welsh Government’s identification of Life Science and Health as a key sector making the triple helix of health, wellbeing and wealth a reality.
Smart KPIs: accessibility to primary care, employment opportunities

11.6.3 Health Economy
Through an integrated, collaborative strategy, ARCH will increase efficiency, minimise duplication and replication of both human and physical resource utilisation, thereby delivering significant financial savings whilst maintaining and enhancing quality of service provision.
Smart KPIs: service delivery cost savings, in-patient admissions, in-patient stay duration, waiting list durations, and waiting times.

11.6.4 Workforce
ARCH will create a dynamic environment which will both retain indigenous talent and attract high quality expertise to supplement the local workforce in an integrated system underpinned by a skills development and maintenance strategy designed to make optimal use of the skills of all individuals.
Smart KPIs: % of qualified workforce, number of clinical academics, number of multidisciplinary employees, number of qualification pathways

11.6.5 Research & Science
ARCH will create an open innovation system where world class science will flourish and international organisations will identify as a location of choice for clinical research and product development and the translation of ideas and innovations to application.
Smart KPIs: Research income, international centres of excellence, academic publications, research impact, national and international awards, national and international collaborations

11.6.6 Regional Economy
ARCH will become an environment where indigenous innovation and foreign direct investment will co-exist creating clusters of life science activity delivering high quality, sustainable jobs alongside commercial and economic value generation anchored through and based upon the excellence of the workforce.
Smart KPIs: Jobs, new companies, growing companies, intellectual property, investment, market capitalisation

11.6.7 Wales’ Reputation
ARCH will be an innovative and successful experiment that becomes a sustainable and evolving initiative linking with and an exemplar of international best practice, thereby building a reputation and brand for the region and Wales as whole.
Smart KPIs: column kilometres of bad press, column kilometres of good press, publications of best-practice, international collaborations, international centres of excellence