

Freedom of Information Request: Our Reference CTHB_220_19

You asked:

This is a Freedom of Information request to see some documents regarding the organisation's ICT Department.

Regarding these documents, please provide the most recent version of the document.

I'd like to see the following documents:

1. ICT/IT Strategy - The ICT/IT department's strategy or plans; highlights their current and future objectives.
2. ICT Org Chart - A visual document that represents the structure of the ICT/IT department; please include name and job titles. If names can't be provided, a job title only chart is still of use.
3. ICT Annual or Business Plan - A sort of action plan, based on the ICT/IT strategy for the year or near-future.
4. ICT Capital Programme/budget - A document that shows the financial budget on current and future ICT/IT projects.

If some of these documents are not available, please let me know why. Also, if the document is intended for future publication, please let me know a rough date of when the document's publication is planned.

Our response:

Please see information requested attached 1 – 4.



Cwm Taf University Health Board
Digital Health Strategic Outline Programme

16th March 2017

FINAL DRAFT FOR REVIEW

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Version	Date	Author	Comments
V1.0	03/03/2017	Atos Consulting	Final draft for review
V1.1	16/03/2017	Atos Consulting	Updated following initial review

1 EXECUTIVE SUMMARY

1.1 Introduction

This Strategic Outline Programme (SOP) document sets out a programme of strategic investment in information and ICT to enable the provision of high quality care and support service change and modernisation across all care settings within the Cwm Taf University Health Board (CTUHB).

This SOP details the technical infrastructure and information required to deliver the Digital Health Strategy across the next five years and is therefore integral to the success of the Health Board's strategic plan. Furthermore, the SOP outlines the parameters set for the programme, the key projects split by strategic themes that constitute the programme and their critical path for delivery.

The total investment required to fulfil this transformational change is **£20,093,312** of capital funding and **£5,772,936** of revenue funding over the five year period from 2017/18 to 2021/22.

1.2 Recommendations

It is recommended that the Welsh Government support the proposals set out in this SOP so that Cwm Taf University Health Board can progress to the next stage of Business Case developments.

1.3 Purpose

The purpose of this document is to seek approval of the strategic context and the approach to delivering a programme, which is key to the implementation of the Digital Health Strategy.

This document will facilitate the setting of strategic budgets and the timely production and submission of supporting Business Cases for specific and phased elements of the programme.

The SOP has been prepared using:

- Welsh Government – Revised Capital Guidance for the NHS in Wales (18th June 2013)
- Welsh Government – Green Book Guidance on Public Sector Business Cases using the Five Case Model (October 2012)
- Welsh Health Circular (2007) 052 – Public Sector Business Cases using the Five Case Model: A Toolkit Guidance and Templates
- HM Treasury – The Green Book: Appraisal and Evaluation in Central Government: Treasure Guidance (2003) and supplementary Green Book guidance
- The Capital Investment Manual (DH, 1994) – plus subsequent updates

2 THE STRATEGIC CASE

The Strategic Case describes the strategic context and the case for change to understand why the Cwm Taf UHB needs to undertake the Strategic Outline Programme

2.1 Organisation Overview

The resident population of the UHB area (Merthyr Tydfil and Rhondda Cynon Taf) is estimated to be 295,135 in 2013, accounting for 10% of the Welsh population. Almost 81% of the population live in Rhondda Cynon Taf Local Authority and the remaining 19% in Merthyr Tydfil. The UHB's catchment population increases to 330,000 when including patient flow from the Upper Rhymney Valley, South Powys, North Cardiff and the Western Vale.

The UHB provides and/or commissions a full range of hospital and community based services to the residents of Rhondda Cynon Taf and Merthyr Tydfil. These include the provision of local primary care services; GP Practices, Dental Practices, Optometry Practices and Community Pharmacy and the running of hospitals, health centres and community health teams. The UHB is also responsible for making arrangements for the residents of Rhondda Cynon Taf and Merthyr Tydfil to access health services where these are not provided within Cwm Taf.

Cwm Taf's main hospital and community based sites are:

- Prince Charles Hospital, Keir Hardie University Health Park, Ysbyty Cwm Cynon, Ysbyty George Thomas, Ysbyty Cwm Rhondda, Dewi Sant Hospital, Pontypridd and District Cottage Hospital

In the primary care sector, Cwm Taf has:

- 77 Community Pharmacies, 35 Dental Practices, 45 General Medical Practices, 28 Optometry Practices

Cwm Taf UHB employs on average 6,943 whole time equivalent (WTE) staff with a headcount of approximately 7,892 and has a total pay bill of circa £297M per annum.

2.2 Business context

The UHB has defined its strategy in the IMTP 2016-2019¹, setting out a healthcare vision which aligns to the 'Cwm Taf Cares' philosophy:

Care for our communities and patients by preventing ill-health, promoting better health, providing excellent services and reducing the need for inpatient care wherever possible through the provision of strengthened home, primary and community care.

The IMTP¹ sets out the priorities for the 3 year period, shaping and driving the activities and strategies across the health board:

¹ *Cwm Taf University Health Board integrated medium term plan 2016-2019*

- ▶ a **reduction in ill health** across our communities
- ▶ **strengthened core primary care** services through extending enhanced services across federated practices to improve equity of access
- ▶ the **development of Cluster Hubs** to further drive locality working, thus facilitating a demonstrable shift of service from secondary to primary care
- ▶ **implemented innovative workforce and service models in primary, community care services** which have reduced unnecessary hospital admissions and delivered a demonstrable shift of services from secondary to primary care
- ▶ **delivered truly integrated services** with our partners across areas such as health and social care and reablement services, particularly for children and the frail elderly
- ▶ **implemented redesigned secondary care service** models across our 'fragile' service areas, as part of wider alliance arrangements with our partner Health Boards and Trusts
- ▶ **embedded prudent healthcare** in our service planning and delivery.

Additionally, the IMTP describes strategic objectives, which give clarity on what is trying to be achieved by the UHB and therefore this SOP:

Strategic Objectives¹

1. **To improve quality, safety and patient experience**
2. **To protect and improve population health**
3. **To ensure that the services provided are accessible and sustainable into the future**
4. **To provide strong governance and assurance**
5. **To ensure good value based care and treatment for our patients in line with the resources made available to the UHB**

2.2.1 External challenges

The health board vision and objectives must be delivered in the context of financial, societal and workforce challenges that are affecting the healthcare industry in general and specifically the UHB. Specific challenges include:

Continued cost pressures – continued economic pressures and budget reduction target of £37.7m over 3 years¹

Skill shortages – As a semi-rural board, attracting and retaining talent across clinical and non-clinical services is an ongoing challenge with primary care sustainability an ongoing challenge and nurse shortages leading to temporary bed closures in 2015²

Ageing workforce – The issue of attracting skills is made more urgent when considering the number of over 51s in the workforce, with high percentages (19% to 28%) in key areas of nursing and midwives, additional clinical services and Administration¹

High degree of inter board patient flow – The Welsh centre of excellence model and Cwm Taf's location means it experiences a high degree of patient flow in and out of the health board throughout a patient's care

Shifting care settings – To alleviate pressure on hospital resources and simultaneously provide better patient-centric care and meet patient expectations, care delivery is shifting from hospital in-patient setting to in-community and in-home care including patient self-care

Need to reduce care quality variance – The statistics are clear that care quality variance is high and needs addressing. For example, care varies based on which day patients are treated: For one UK hospital mortality rates are 11% higher for patients admitted on Saturdays and 16% higher on Sundays compared to a Wednesday³

Providing patient-centric services – Patients are demanding more care ownership, personalisation, consolidation, self-treatment and increased accessibility to all services and patient records

Sector-wide digital disruption and innovation of care models – Accelerated clinical research in bioinformatics, access to real-time digital records for clinical empowerment, analytics for pre-emptive care, smart devices for monitoring and asset tracking are just some of the digital health sector disruptors.

Digital proliferation is driving patient and employee expectations – Expectations are influenced by increasing adjacent sector digital maturity. For example, in the travel sector passengers can now check-in online and receive digital queue and travel updates. This has led to a completely paperless journey and improved customer satisfaction. Adjacent sectors have tested and proved a number of emerging technologies for the health sector to consider

2.2.2 Digital Health Strategy⁴

In March 2017 a new strategy was developed, the Digital Health Strategy, which defines how the UHB will exploit Digital, ICT and information to aid in overcoming the business challenges and achieving the IMTP objectives. The strategy is in support of the National strategies⁵⁶ and aims to simultaneously contribute to the national objectives whilst addressing local needs.

² Cwm Taf University Health Board Annual Report 15-16

³ Research from Royal Free London

⁴ CTUHB Digital Health Strategy 2017

⁵ A Digital Health and Social Care Strategy for Wales

2.2.2.1 Digital Informatics Vision

A new vision was developed which will address the issues and opportunities being faced:

Digital Health Vision:
CTUHB will aim to become a digital exemplar within NHS Wales, as an innovator and early adopter of digital technologies and approaches, to enhance care quality, better engage with patients and deliver sustainable services

This provides clarity on the goal that any transformation activity, including this strategic outline programme, should be striving towards.

2.2.2.2 Digital Health Strategic Principles

To guide ICT decision making and ensure alignment of initiatives to the vision, strategic principles have been defined:

- | | |
|---------------------------------|--|
| 1. National solutions | National solutions will be adopted to drive efficiency and build in interoperability |
| 2. Digital first | Exploiting digital as the first choice to enhance and optimise services, raising quality and increasing clinical time |
| 3. Data driven | Using analytic insights to drive decisions and thereby improve quality and efficiency of services |
| 4. Proactive trailblazer | Acting as a test bed and incubator for NHS Wales, developing and trialling new solutions on behalf of and in collaboration with the other boards |
| 5. Whole experience | Solutions will address the patient and employee experience across the whole patient journey |

⁶ NWIS Annual review 2016

2.2.2.3 Strategic Solutions

To realise the vision, the strategy focuses on strategic solutions that will transform CTUHB into a digital healthcare leader. The table below lists the 8 strategic themes identified to drive the realisation of UHB's core strategic objectives:

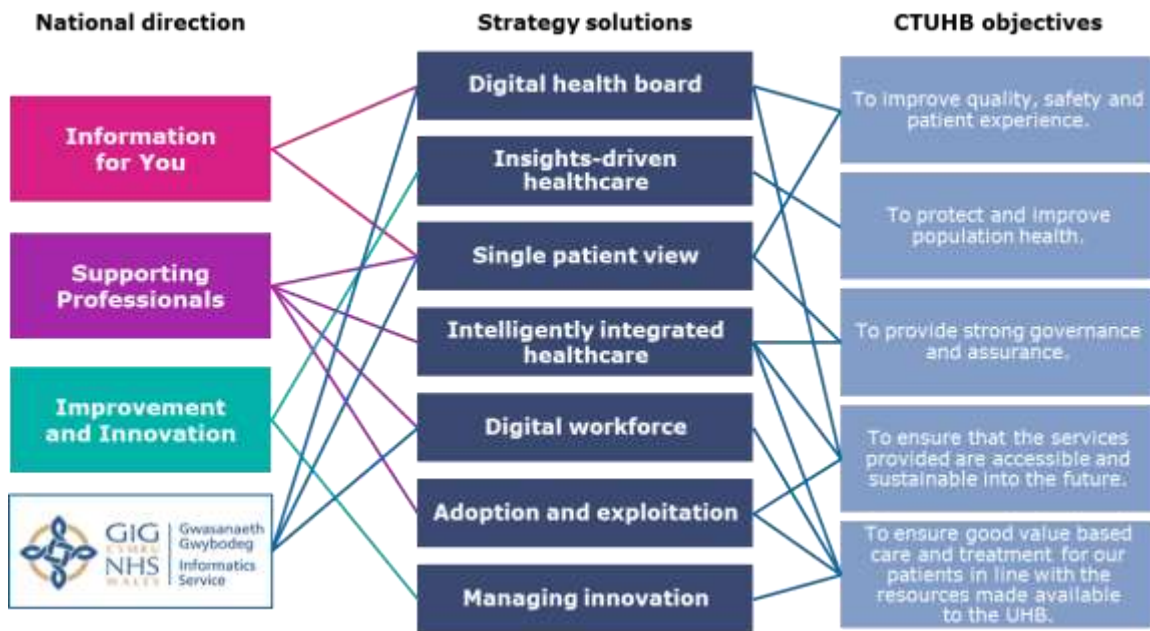
Digital health board	Digitising the processes across the health board that support patients and employees, removing manual effort, eliminating paper and capturing valuable, reusable data as standard
Insights-driven healthcare	Providing the platform to interrogate and analyse multi-source data, surfacing previously unknown insights on performance and driving optimal decision making
Single patient view	Managing a single, digital view of a patient's care and history, improving patient centric care, reducing delays in information seeking and removing re-keying errors
Intelligently integrated healthcare	Intelligently integrating processes and systems, providing two-way communications across silos and implementing smart workflow to automate key process interactions, removing manual effort and baking in zero-error processing
Digital workforce	Providing the digital tools to support employees in their day to day activity, reducing admin and travel time and increasing clinical contact
Adoption and exploitation	Providing the resources, structures and toolkits to properly manage identification, implementation and adoption of new solutions; and supporting staff in exploiting the systems they have access to
Managing innovation	Managing and encouraging innovation with innovation forums and idea receptors; as well as a governance and funding model to turn them into reality
Digital enablers	Putting in place the enabling infrastructure and maturing the key supporting capabilities needed to deliver the strategy

These strategic solutions will be implemented through a programme of initiatives, including adoption of the national projects and solutions, undertaking of projects in collaboration with other health boards and local Cwm Taf projects to meet specific or unique needs.

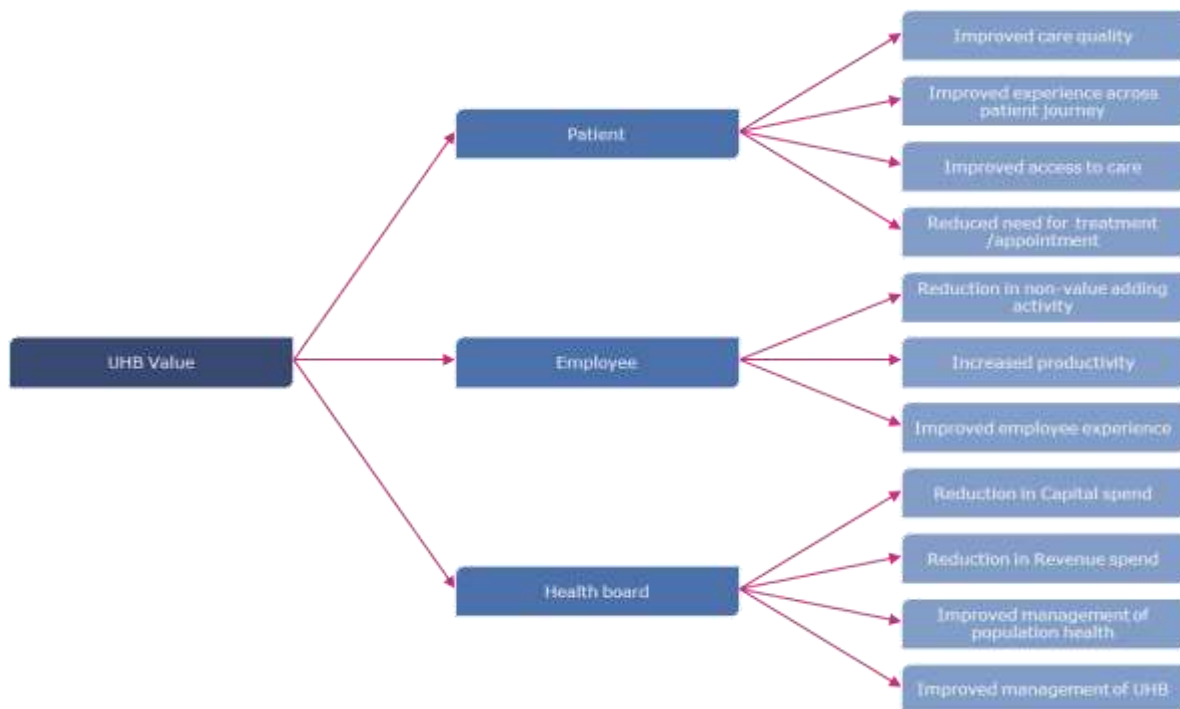
They represent a macro prioritisation of efforts towards achieving these solutions and will shape the expenditure of ICT resources.

2.3 Business benefits

The solutions align to and support the National strategy and directly contribute to CTUHB's healthcare objectives as shown



The strategic solutions will be implemented through a programme of initiatives and to assess their individual merits, a UHB value model has been created to show the different business benefits that will be achieved by implementing the strategy.



This value model, which is based on information from the IMTP⁷, will provide a framework to quickly appraise the expected benefits from a project against strategically important value categories. It covers three dimensions of the Patient, the Employee and the Health Board;

⁷ Cwm Taf University Health Board three year Integrated Medium Term Plan 2016/2017 – 2018/2019

helping to ensure a balanced view of benefits and not focused on only one or two aspects such as financial gains.

2.4 Transformation programme

The transformation programme has been defined with a portfolio of projects to implement the strategic solutions.

These include active participation in national projects such as the Welsh Community Care Information Solution (WCCIS), collaborative projects developed in partnership with other health boards such as the Theatres System Replacement and local Cwm Taf projects such as Remote Storage Temperature Monitoring. The programme contains system related projects, new and enhancements, as well as projects to address operating model concerns and detailed design reviews.

The full definition of the projects can be found in the accompanying document “**CTUHB Digital Health Strategy – Project Catalogue**”. The project list and summary information is provided in the table below.

Strategic solution	Ref	Project name	Description	Scope	Priority
1. Digital health board	1.01	Choose Pharmacy rollout	Rollout and adoption of the Choose Pharmacy solution for electronic recording, display and sharing of community pharmacy consultations, medication variation and pharmacy prescribing	National	Medium
1. Digital health board	1.02	CYPRIS	Enhance electronic recording, display and sharing of child health data to reflect the Healthy Child Programme, e.g. key milestones	National	Medium
1. Digital health board	1.03	Welsh Patient Referral Service (WPRS)	Deliver online e-referral system between tertiary and secondary care clinicians and GPs	National	High
1. Digital health board	1.04	Welsh Results and Reports Service (WRRS)	Rolling project to enhance and increase the content, enriching the environment	National	High
1. Digital health board	1.05	Welsh Laboratory Information Management System (LIMS)	Deliver a National, Standardised Pathology System which integrates across other systems	National	High
1. Digital health board	1.06	Welsh Community Care Information Solution (WCCIS)	Delivery of an Integrated Health and Social Care System	National	High
1. Digital health board	1.07	Welsh Hospital Electronic Prescribing and Medicines Administration (WHEPMA)	Delivery of a national e-prescribing solution for Wales	National	High
1. Digital	1.08	Medical	Scanning of existing paper medical	Local	High

health board		Records Digitisation	records to be managed as digital records.		
1. Digital health board	1.09	Radis merger	Consolidating the two separate RadIS instances into a single system, hosted by NWIS	Local	High
1. Digital health board	1.10	Digital dictation	Piloting digital dictation and transcription to reduce manual re-keying	Local	Medium
1. Digital health board	1.11	Welsh Clinical Portal (WCP) extensions	Ongoing programme of work to extend the use of WCP. Planned packages of work include MTeD/eDAL, WISDM and GPTR	Local	High
1. Digital health board	1.12	Ophthalmology system redesign	Reconfiguration of ICT systems used within Ophthalmology to merge the two systems, enable the new cameras to be used and to store images for access from anywhere	Local	Medium
1. Digital health board	1.13	Implementation of electronic prescribing in ITU	Configure the ICCA system to enable clinicians and pharmacists to prescribe electronically	Local	Medium
1. Digital health board	1.14	MITS maternity system - Booking form	MITS to be updated to reflect the new 2016 All-Wales Ante natal Booking Form	Local	Medium
1. Digital health board	1.15	Interim acute medicine, bed management and handover system	Development of interim system to improve patient management in Acute Medicine through the introduction of Patient Status at a glance on screens. It will allow demand management in real time and help overall bed management whilst awaiting national Patient Flow project	Local	High
1. Digital health board	1.16	Paediatric diabetes system	Install new SaaS service for Paediatric Diabetes -Twinkle, replacing paper processes	Local	Medium
1. Digital health board	1.17	Sexual Health system enhancements	Increase Lillie functionality by installing extra modules to support clinics and mobility- Internet booking\Touch screen Module\ SMS texting\ Ireach	Local	Medium
1. Digital health board	1.18	ICNET deployment	Local deployment and configuration of the ICNET system to aid in managing infection prevention and control	Local	Medium
1. Digital health board	1.19	Welsh Point of Care	Deployment of ConWorx nationally to facilitate secondary care connectivity and centralise results and reporting	National	Medium
1. Digital health board	1.20	Community Digital INR Self Monitoring	Use of a personal testing machine at home which allows people to perform self-testing	Local	Medium
1. Digital health board	1.21	Remote storage and lab temperature monitoring	Installation of wireless monitors to measure and report on reagent storage and laboratory operational temperature	Local	Medium
1. Digital health board	1.22	Haemonetics Blood Track	Replace local blood tracking and fating solution which will be incompatible with the LIMS solution.	Local	Medium

			Required to maintain functionality		
1. Digital health board	1.23	Theatres replacement	Working in collaboration with ABMU Health Board and NWIS to deliver a new Pre-Assessment and Theatre System	Collaborative	Medium
1. Digital health board	1.24	Digital pathology	Deliver the infrastructure to support the use of digital images by pathology departments including Histology/microbiology/haematology	Collaborative	Medium
1. Digital health board	1.25	Paediatric Mobile application (Chai)	Mobile application to collect admission data in paediatrics	Collaborative	Medium
1. Digital health board	1.26	Patient identification	Simple, automated solution to identify and link a patient to the relevant medical notes and items (e.g. samples), using the appropriate mix of tags and barcode technologies	Collaborative	Medium
1. Digital health board	1.27	Digital process review	Business process review to identify all UHB processes, understand how well they are digitally supported and identify opportunities to enhance	Local	High
1. Digital health board	1.28	Enterprise Scheduling	Implementation of integrated resource scheduling capability to coordinate, allocate, book and order the human and non-human resources needed to deliver a service	Collaborative	Medium
1. Digital health board	1.29	Telehealth	To develop a tele-dermatology service to include all lesion referrals.	Collaborative	Medium
1. Digital health board	1.30	111	Replaces the end of life system and delivers a National 111 Wales Solution	Collaborative	Medium
1. Digital health board	1.31	Patient flow	Deliver an e-solution through which all Health Boards in Wales can deliver more effective patient pathways and patient flow through the care system	Collaborative	High
1. Digital health board	1.32	Interim E-Prescribing	Deliver an interim Cwm Taf E-Prescribing solution whilst awaiting national WHEPMA project in 2019/2020	Local	High
2. Insights-driven healthcare	2.01	National Data Warehouse, Business Intelligence & Predictive Information Services	Provision of a national data warehouse which CTUHB can interrogate or extract from, as well as provision of capability to undertake national data analysis	National	Medium
2. Insights-driven healthcare	2.02	Clinical insights platform extension (tooling and data architecture)	Reviewing, consolidating and extending the analytics platform, assessing the UHB's data architecture and defining the target information architecture	Local	High
2. Insights-driven healthcare	2.03	Master data management implementation	Implementation of MDM to streamline and facilitate accurate data sharing	Local	Medium

2. Insights-driven healthcare	2.04	Exploiting clinical insights platform	Review of the ways in which analytics is used across the UHB, identifying use cases and supporting staff in accessing and exploiting the capability	Local	High
3. Single patient view	3.01	Patient Portal	Deliver system which allows Patients to manage their own health and well being, incorporating national pathfinder	National	Medium
3. Single patient view	3.02	Welsh Care Record Service (WCRS)	Deliver clinical documents in electronic format and make available across Wales	National	High
3. Single patient view	3.03	WIAS	CTUHB joining the national archive solution pilot (currently ABHB and Velindre trust) which will enable PACS images to be viewed in WRRS from across Wales	National	High
3. Single patient view	3.04	Vision 360	View and add to patient records from GP practices that use Vision and EMIS Web systems.	Local	High
4. Intelligently integrated healthcare	4.01	Implement Enterprise Service Bus (ESB)	Implementation of an enterprise service bus to enable and manage integration across systems	Local	Medium
4. Intelligently integrated healthcare	4.02	Detailed architecture review and tech roadmap	Detailed review of the current architecture and development of technical roadmap covering 1) Architecture patterns and technology adoption including SaaS, PaaS, ESB and APIs; and 2) Detailed roadmap for the entire application portfolio including digitisation and rationalisation	Local	Medium
4. Intelligently integrated healthcare	4.03	Strategy and Proof of Value for technology to track equipment, assets, patients and resources	Strategy for how and where tracking technologies will be used, with ensuing Proof of Value project to test and demonstrate the value	Collaborative	Medium
5. Digital workforce	5.01	Mobile Device Management Strategy	Expanding the mobile solution providing mobile access to both the board desktop and mobile apps designed for application delivery	Local	High
5. Digital workforce	5.02	Microsoft licensing upgrades	Modernising Microsoft licences to ensure CTUHB has access to the software it needs, such as Microsoft Office 2016.	Local	High
5. Digital workforce	5.03	Citrix refresh	Through use of the Microsoft subscriptions, the deployment of Citrix can be modernised, delivering Office 2016	Local	High
5. Digital workforce	5.04	Rollout of Skype for Business	Rollout and adoption support for the national Skype solution. Dependant on Citrix upgrade and Microsoft licence projects	Local	High
5. Digital workforce	5.05	Rollout of MFDs and Managed	Ad-hoc rollout of advanced print solution using Multi-Functional	Local	Medium

		Print Services	Devices as department budgets become available		
5. Digital workforce	5.06	IT Self-Service web portal	Rollout of a self service call logging management system that users can use to log service requests and incidents.	Local	Low
5. Digital workforce	5.07	Employee Self-Service - Kiosks and apps	Providing access through Kiosks and Apps to ESS for the ~2500 non IT users within the UHB workforce; and the requisite uplift of service capability to support the additional users	Local	Medium
5. Digital workforce	5.08	Single sign on	Implementation of single / common sign on for all systems, using NADEX	Local	Medium
6. Adoption and exploitation	6.01	Implementation of ITOM enhancements	Implementation of ITOM recommendations including the revised steering group, the new roles for CTUHB enterprise architect, TSO/BSO and IMT business partners; and the development of PPM, Business Change and Business Relationship Management capabilities	Local	High
7. Managing innovation	7.01	Innovation management and delivery	Implementation of process, tools, governance and funding mechanism to encourage and capture ideas, assess their value and viability and to deliver them	Local	Medium
8. Digital enablers	8.01	TrackIT database population	Population of ICT Asset Management database	Local	Medium
8. Digital enablers	8.02	Pathology system backup hardware	Move telepath hardware to supported platform or purchase second user hardware to act as warm standby Required to keep BT and CP operational locally	Local	Medium
8. Digital enablers	8.03	Pathology Managed service contract renewal support	ICT support for the pathology service renewal	Local	Medium
8. Digital enablers	8.04	Switchboard rationalisation	Switchboard rationalisation, in conjunction with Facilities, leading to a standardised telephony experience that is future proofed and supported.	Local	High
8. Digital enablers	8.05	Continued infrastructure refresh programme	Ongoing replacement and upgrade of IT estate including server replacement, XP and 2003 eradication. Rolling replacement of data network to provide the latest switching technologies. Delivery of more robust PSBA connectivity through BT's Engagement programme.	Local	High
8. Digital enablers	8.06	Cyber security	Under direction from NWIS, actions to protect information systems from theft or damage to the hardware, the software, and to the information on them, as well as from disruption or misdirection of the services they	Local	High

			provide. Activity includes system/device hardening.		
8. Digital enablers	8.07	Enterprise monitoring	Implementation of e2e enterprise service monitoring to better understand, manage and improve the services being delivered	Local	Medium
8. Digital enablers	8.08	Data centre consolidation	Migration from on site server rooms to managed data centre services	Collaborative	Medium

2.5 Transformation programme benefits

Each project in the programme has been appraised to identify the business benefits it will deliver, both as a direct outcome of the project and as an indirect consequence of the project's outcomes.

Where possible, the benefits have been quantified and this detail can be found in the Financial Case. The table below shows the appraisal of the projects using the value model described in section 2.3. It identifies where a project is expected to directly contribute to a business benefit, "D", and where it will indirectly contribute to a benefit, "I".

Ref	Project name	Improved care quality	Improved experience across patient journey	Improved access to care	Reduced need for treatment / appointment	Reduction in non-value adding activity	Increased productivity	Improved employee experience	Reduction in capital spend	Reduction in revenue spend	Improved management of population health	Improved management of the UHB
1.01	Choose Pharmacy rollout						I	D				I
1.02	CYPRIS	I				D	I	D				I
1.03	Welsh Patient Referral Service (WPRS)		D			D	I	D				I
1.04	Welsh Results and Reports Service (WRRS)		D			D	I	D				I
1.05	Welsh Laboratory Information Management System (LIMS)		I			D	D	I				I
1.06	Welsh Community Care Information Solution (WCCIS)	I	D			D	D	D				I
1.07	Welsh Hospital Electronic					D	D	D				I

	Prescribing and Medicines Administration (WHEPMA)					D	D	D				
1.08	Medical Records Digitisation					D		D	I	I		
1.09	Radis merger		I				D			I		
1.10	Digital dictation	I				D	D	I				
1.11	Welsh Clinical Portal (WCP) extensions	I				D	D	D				I
1.12	Ophthalmology system redesign		I			D	I	D				
1.13	Implementation of electronic prescribing in ITU		I			D	I	D		I		I
1.14	MITs maternity system - Booking form						D	I				I
1.15	Interim acute medicine, bed management and handover system	I	D			D	I					D
1.16	Paediatric diabetes system					D	I	D				I
1.17	Sexual Health system enhancements		I	I		D	D	D				I
1.18	ICNET deployment	I									I	I
1.19	Welsh Point of Care					D						D
1.20	Community Digital INR Self Monitoring		D	D	D	D	D			D		
1.21	Remote storage and lab temperature monitoring					D						
1.22	Haemonetics Blood Track					I		I				
1.23	Theatres replacement					D	D				I	
1.24	Digital pathology	I				D	I					
1.25	Paediatric Mobile application (Chai)		D			D	I					
1.26	Patient identification	I	D		D	I						I
1.27	Digital process review		I	I		I	I	I		I		I
1.28	Enterprise Scheduling		I			D	D			I		
1.29	Telehealth	I	D			D	I	I				
1.30	111		D	D	I							
1.31	Patient flow	D	D			D	D					D
1.32	Interim E-Prescribing		D			D	D	D				I
2.01	National Data Warehouse, Business Intelligence & Predictive Information Services	I									I	D
2.02	Clinical insights platform extension (tooling and data architecture)	I				I	I			I		I
2.03	Master data management implementation	I				I	D					I
2.04	Exploiting clinical insights platform	I				I						D
3.01	Patient Portal	I	D	D		I						I
3.02	Welsh Care Record Service	I	I			D	I	I				I

	(WCRS)											
3.03	WIAS	I	D	I		D	I					
3.04	Vision 360	I	D			D						I
4.01	Implement Enterprise Service Bus (ESB)		I			D	I	D				I
4.02	Detailed architecture review and tech roadmap		D	I		I	I	D	D	D		I
4.03	Strategy and Proof of Value for technology to track equipment, assets, patients and resources	I				D						I
5.01	Mobile Device Management Strategy			I		D	D	D				I
5.02	Microsoft licensing upgrades						D			I		
5.03	Citrix refresh					I	I			I		
5.04	Rollout of Skype for Business					D	D	D		D		
5.05	Rollout of MFDs and Managed Print Services							D		D		
5.06	IT Self-Service web portal					D	I	D		D		
5.07	Employee Self-Service - Kiosks and apps							D				D
5.08	Single sign on					D		D				
6.01	Implementation of ITOM enhancements						I	I				D
7.01	Innovation management and delivery	I								I		I
8.01	TrackIT database population								I	I		D
8.02	Pathology system backup hardware							I	I			
8.03	Pathology Managed service contract renewal support						I					
8.04	Switchboard rationalisation		I				D			D		
8.05	Continued infrastructure refresh programme							I				I
8.06	Cyber security											D
8.07	Enterprise monitoring											D
8.08	Data centre consolidation		I					I				D

2.6 Risks, constraints and dependencies

2.6.1 Key risks

Throughout the development of the strategy and this SOP, the transformation as a whole and the individual projects were assessed to identify the primary risks to the programme's success. The following table is a non-exhaustive list of the key risks identified

Ref	Title	Description
R01	Insufficient	There is a risk that the benefits will not be fully realised due to

	funding	insufficient funding being available to deliver the programme
R02	Stakeholder capacity	There is a risk that projects will be delayed and/or will not meet requirements due to the primary stakeholders for a project, i.e. the resources from ICT, non-clinical and the clinical departments, not having sufficient capacity or backfill to participate fully
R03	ICT capacity	There is a risk that the full programme cannot be implemented due to insufficient capacity within ICT to deliver it
R04	Adoption	There is a risk that projects will not realise their benefits due to poorly managed or resourced business change leading to limited adoption and exploitation within the business
R05	User inability	There is a risk that the benefits will not be realised due to users (patients and non-patients) not being willing or able to access ICT services e.g. lack of device or connectivity, lack of training or lack of digital literacy
R06	National timeline	There is a risk that benefits will be delayed due to the national project timeline slowing down the UHB's implementation plans
R07	Strategic currency	There is a risk that the strategy and implementation plan becomes misaligned to the needs of the UHB over time due to the lack of ongoing management, revision and re-alignment to emerging needs
R08	Health board priorities	There is a risk that the programme is not delivered due to competing healthcare priorities consuming focus and resources

2.6.2 Key constraints

In addition to identifying the risks to the programme's success, the primary constraining factors were discussed. The following table is a non-exhaustive list of the key constraints identified

Ref	Title	Description
C01	Budget	The amount of change that can be delivered is constrained by the capital and revenue budgets and funding sources
C02	Resources	The amount of change that can be delivered is constrained by the capacity of the ICT delivery teams

2.6.3 Key dependencies

Finally, and importantly given the organisational landscape and pre-planned projects, the dependencies were assessed and the following table is a non-exhaustive list of the key dependencies identified

Ref	Title	Description
D01	NWIS	The delivery of the programme is dependent on the national

		resources being sufficiently available to deliver the national projects
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3 THE ECONOMIC CASE

The Economic Case provides an overview of the options appraised and evaluation criteria used to select a “preferred option”

This section sets out the options that have been evaluated, together with the method and results of the economic appraisal of short-listed options in order to demonstrate which one provides the best outcomes for the financial investment.

3.1 Evaluation Criteria

The Cwm Taf UHB Strategic Outline Programme is designed to realise the Digital Health Vision in support of the health board’s business objectives as defined in the IMTP⁸.

There are a number of options for delivering the programme which are described in section 3.2. To provide the basis for selecting the preferred option, evaluation criteria have been defined below.

Table 2: Evaluation Criteria

Criteria	Description
Improved patient experience	The programme must be geared to providing better outcomes and an overall experience for patients so they can received the same level of health care across Wales
Time released back to clinical care	The programme must drive improvements to clinical care to ensure that clinicians spend less time looking for things, such as consumables and equipment in order to focus on using that time for treating patients
Value for money (VFM)	The programme must support Cwm Taf UHB’s aim to reduce its overall costs, provide better alignment to the long-term strategic goals and be affordable to implement.
Benefits align to Strategic themes	The Benefits must align to the 8 themes outlined in the Digital Health Strategy to ensure their context is relevant to the strategy
Governance structure is defined and in place	To ensure the Governance structure is in place to support the development and deployment of the Strategic Outline Programme and the processes supporting it
Elimination of duplication	Adopting the ‘Once for Wales’ approach to eliminate unnecessary duplication and promote standardisation of work across all Health Boards in Wales

⁸ Cwm Taf University Health Board three year Integrated Medium Term Plan 2016/2017 – 2018/2019

3.2 Main Options

To obtain further information of the individual projects listed within the main options of the Economic Case refer to the Appendix

Option 1 – Do Nothing	
Description	This option maintains the status quo. Maintain Business As Usual (BAU) with no operational impacts to Cwm Taf UHB
Cost	Cost neutral option, but will not be able to support the recommendations, projects and initiatives associated with the Digital Health Strategy
Benefits	<ul style="list-style-type: none"> • No degree of change by maintain the status quo • Greater transparency of budgets and expenditure as existing cost base will be maintained • No changes to current working practices so individuals can continue with their current roles • Additional investment limited
Risks	<ul style="list-style-type: none"> • Cwm Taf UHB becomes less competitive • Fail to capitalise on digital opportunities • Could lead to a negative reputation for failing to address current shortcomings • Non-compliance with standard provider contract • No change to existing cost base • No improvements to patient safety would be delivered, but current patient safety levels will be maintained • Cwm Taf UHB would be seen as out of step with the national digital strategy and the rest of the Local Health Boards in Wales, thereby failing to enhance its reputation

Option 2 – Do the minimum to deliver the projects Cwm Taf UHB has already committed to															
Description	<p>Cwm Taf UHB has agreed funding and is committed to delivering the following projects:</p> <table border="0"> <tr> <td>1.06</td> <td>Welsh Community Care Information Solution (WCCIS)</td> </tr> <tr> <td>1.08</td> <td>Medical Records Digitisation</td> </tr> <tr> <td>1.11</td> <td>WCP all modules</td> </tr> <tr> <td>1.25</td> <td>Paediatric Mobile application (Chai)</td> </tr> <tr> <td>5.02</td> <td>Microsoft licensing upgrades</td> </tr> <tr> <td>5.04</td> <td>Rollout of Skype for Business</td> </tr> <tr> <td>5.05</td> <td>Rollout of MFDs and Managed Print Services</td> </tr> </table>	1.06	Welsh Community Care Information Solution (WCCIS)	1.08	Medical Records Digitisation	1.11	WCP all modules	1.25	Paediatric Mobile application (Chai)	5.02	Microsoft licensing upgrades	5.04	Rollout of Skype for Business	5.05	Rollout of MFDs and Managed Print Services
1.06	Welsh Community Care Information Solution (WCCIS)														
1.08	Medical Records Digitisation														
1.11	WCP all modules														
1.25	Paediatric Mobile application (Chai)														
5.02	Microsoft licensing upgrades														
5.04	Rollout of Skype for Business														
5.05	Rollout of MFDs and Managed Print Services														

	8.04 Switchboard rationalisation 8.06 Cyber security
Cost	Total Cost £11,755,035 The total cost has been calculated by accumulating the individual costs of each project within scope of option 2
Benefits	For the projects that have been quantified within option 2 the total benefits amount to £5,020,478 <ul style="list-style-type: none"> • Projects already known and identified • Relevant to CTUHB • Benefits are already outlined at a high-level at both local and national levels • Business Cases have already been developed
Risks	<ul style="list-style-type: none"> • Does not cover all key capabilities and high-value projects identified within the Digital Health Strategy, such as Analytics, Enterprise Scheduling and Governance • Prioritisation is not confirmed • Fail to capitalise on digital opportunities • Could lead to a negative reputation for failing to address current shortcomings • No improvements to patient safety would be delivered, but current patient safety levels will be maintained • No cost savings or benefits would be realised • Cwm Taf UHB would be seen as out of step with the national digital strategy and the rest of the Local Health Boards in Wales, thereby failing to enhance its reputation

Option 3 – Invest in strategic solutions to drive Cwm Taf UHB and National objectives

Description	Implement planned projects aligned to strategic themes as well as new initiatives to improve capabilities across Cwm Taf UHB. This includes de-prioritising initiatives that do not align to the 8 themes outlines in the Digital Health Strategy document to ensure efforts are maximised on achieving ‘quick wins’ and delivering benefits within a shorter time frame
Cost	Total Cost £24,634,523
Benefits	Total Benefits £23,985,674 Benefits have been quantified for a subset of projects as defined in the financial model, whereas the full portfolio of projects has been costed, which results in a potentially misleading net value figure. Table 6 within the Financial Case demonstrates that Cwm Taf UHB will actually gain a net value benefit of £4,949,890 over the next 5 years from pursuing

the quantified projects within this option.

- Supports CTUHB's reputation as one of the leading Local Health Boards across Wales
- Overall rollout costs would be lower as the implementation roadmap is prioritised to those initiatives which are of highest value and will maximise the opportunities to realise 'quick wins'
- The rate of change is manageable and there is little risk of disruption
- Due to longer roll out timelines of five years, the Trust can learn about best practices and challenges from demonstrator sites

Risks

- Trust funding may be diverted to other operational priorities
- Potential changes to programme team over extended period
- Full Return on Investment (ROI) may not be realised

Option 4 – Maintain the status quo and fully participate in the rollout of National Solutions across NHS Wales

Description

Maintain existing infrastructure, systems and devices and only use the National Solutions endorsed by NWIS / Welsh Government

The National Projects that constitute option 4 are listed below. Further details of each individual project is provided within the 'Project Catalogue' document:

Ref	Project Name
1.01	Choose Pharmacy
1.02	CYPRIS
1.03	Welsh Patient Referral Service (WPRS)
1.04	Welsh Results and Reports Service (WRRS)
1.05	Welsh Laboratory Information Management System (LIMS)
1.06	Welsh Community Care Information Solution (WCCIS)
1.07	Welsh Hospital Electronic Prescribing and Medicines Administration (WHEPMA)
1.19	Welsh Point of Care
2.01	National Data Warehouse, Business Intelligence & Predictive Information Services
3.01	Patient Portal
3.02	Welsh Care Record Service (WCRS)
3.03	WIAS

Cost

Indicative Cost £6,581,069

However, there are no costs associated for the following National Projects due to still being assessed in the Outline Business Case stage:

- Choose Pharmacy
- WPRS

	<ul style="list-style-type: none"> • WRRS • WHEPMA • WIAS <p>Furthermore, in determining this indicative cost it has been assumed that the NWIS SLA costs will remain at the same level for future years. This is due to the constraint that the new set of NWIS SLA costs will be published after April 2017 i.e. after this SOP document has been completed.</p>
Benefits	<p>For the projects that have been quantified within option 4 the total benefits amount to £6,788,760</p> <ul style="list-style-type: none"> • Implement solutions and initiatives endorsed by NWIS and the Welsh Assembly Government to help with standardising healthcare across Wales • Endorses 'Once for Wales' approach to provide seamless care to patients across Wales • Implementation and integration of tried and tested solutions • More transparent contractual and financial framework when compared to private companies
Risks	<ul style="list-style-type: none"> • Overhead involved in delivery of change • National solutions may not be perceived better than the Local solutions currently used – 'Once for Wales vs Once for Cwm Taf' • Lack of direct engagement or forward planning between NWIS and Local Health Board

3.3 Options Appraisal

Table 3 below shows the rankings that result from scoring each of the options against each of the criteria; these are scored based on the following:

Key:	
Description	Score
Does not meet required criteria	0
Partially meets required criteria	1
Fully meets required criteria	3

Table 3: Economic Case options scoring against evaluation criteria

SOP Economic Case Options	Option 1 – Do Nothing	Option 2 – Do the minimum to deliver the projects Cwm Taf UHB has already committed to	Option 3 – Invest in strategic solutions to drive Cwm Taf UHB and National objectives	Option 4 – Maintain the status quo and fully participate in the rollout of National Solutions across NHS Wales
Improved patient experience	0	3	3	1
Time released back to clinical care	0	1	3	1
Value for money (VFM)	1	1	3	3
Benefits align to Strategic themes	0	1	3	1
Governance structure is defined and in place	0	0	3	0
Elimination of duplication	0	1	3	3
Total	1	7	18	9
Overall Ranking	4th	3rd	1st	2nd

3.4 Preferred Option

Utilising the options appraisal scoring system, a high-level summary of each of option together with the decision of the preferred option is detailed in Table 4

Table 4: Preferred Option

Option	Description	Recommendation
Option 1 – Do Nothing	This option maintains the status quo and maintaining BAU with no operational impacts to Cwm Taf UHB	Within the appraisal this is the lowest scoring option and is not recommended as Cwm

		Taf UHB would be seen as out of step with the national digital strategy and the rest of the Local Health Boards in Wales, thereby failing to enhance its reputation
Option 2 – Do the minimum to deliver the projects Cwm Taf UHB has already committed to	<p>This option will support the delivery and implementation of the minimum set of projects committed to where funding is already agreed and are prioritised over the next three years</p> <p>However, this option does not cover all key capabilities and high-value projects identified within the Digital Health Strategy such as Analytics, Enterprise Scheduling and Governance</p>	Completing the minimum set of projects already committed to will deliver a degree value to Cwm Taf UHB, but misses some of the wider opportunities to enhance care and efficiencies and address some of the issues with adoption
Option 3 – Invest in strategic solutions to drive Cwm Taf UHB and National objectives RECOMMENDED OPTION	Implement planned projects aligned to strategic themes as well as new initiatives to improve capabilities across Cwm Taf UHB. This includes de-prioritising initiatives that do not align to the 8 themes outlines in the Digital Health Strategy in order to maximise achieving ‘quick wins’ for Cwm Taf UHB	This is the recommended approach which will transform Cwm Taf UHB into a digital healthcare leader and achieve their healthcare and operational goals
Option 4 – Maintain the status quo and fully participate in the rollout of National Solutions across NHS Wales	Maintain existing infrastructure, systems and devices and adopt a follower status, adopting national solutions and recommendations as they arise	This will be a financially attractive option, but will deliver reduced and delayed value to Cwm Taf UHB

Therefore, in conclusion, option 3 to ‘Invest in strategic solutions to drive Cwm Taf UHB and National objectives’ is the preferred option

3.5 Deliverables and Timescales

For details of the scope, level of priority, key activities and output of each individual project with planned timescales for implementation, please refer to the accompanying documents “**CTUHB Digital Health Strategy – Project Catalogue**” and “**CTUHB Digital Health Strategy – Roadmap**”.

In recognition of the high rate of change in the healthcare and technology landscapes, the roadmap has been planned with most activity in the first two years. The lower level of effort

in years three to five is not an indication that less effort is needed, but a reflection of the fact that the projects to be delivered in 2019 onwards cannot be effectively planned at this point in time. The UHB's IMTP will be updated for 2019/2020 – 2021/2022, national priorities will potentially change and the technology landscape will have advanced; meaning any planning for this period is likely to need significant revision and therefore any effort expended in doing so at this point would be wasted.

Through the Digital Health Steering group, the strategy and the roadmap should be continually reviewed and revised to reflect progress to date and any emerging requirements and changes in priorities. This should take place every 6 months, however the programme should be continually reviewed and any changes approved by the steering group.

4 THE COMMERCIAL CASE

The Commercial Case outlines the commercial arrangements, including the proposed sourcing option with rationale for its selection

4.1 Commercial Strategy

The Commercial Strategy for the Strategic Outline Programme involves each of the individual projects within a Strategic Theme being progressed and assessed through a Business Justification Case (BJC) and this element of the process will agree the competitive tendering process required for capital. It is important that the BJCs specify in detail the full requirements for each project and the procurement process demonstrating value for money and the affordability

4.1.1 NHS Wales Procurement tendering process

The NHS Wales Shared Services Partnership Procurement Services negotiate contracts across a wide spectrum of expenditure all this is managed by tenders right the way through to full Official Journal of the European Union (OJEU) tendering. NHS Wales has Standard Financial Instructions in place and the different levels to undertake quotes and tenders are detailed in the below table:

< £5k	Informal Prices
£ 5k - £25k	Quotations
£25k – £113,057	Tenders
£113,057k +	OJEU

Where possible quotations should be undertaken using the electronic quote and tendering system Bravo to ensure the end-to-end process is quicker and easier to manage. Bravo does this by enabling the loading of specifications that are directly linked to a Procurement Framework and list of suppliers that have already met the specified criteria.

Where the value of exceeds £25k NHS Wales Procurement Services places a notice on the opportunities listing via Sell2Wales, which will automatically alert Cwm Taf UHB as a registered supplier. This will then allow Cwm Taf UHB to contact the NHS Wales Procurement Services to understand the scope and detail of the tender being planning.

Single Quote Tenders (SQTs) for projects or initiatives where there is only one supplier for that nature of work does not need to go for tendering providing the contract is signed off by the Cwm Taf UHB Executives. However, even with SQTs, gaining clinical support and endorsement of the intended solution/system is vital to ensure adoption is successful and a positive outcome is achieved for all key stakeholders.

For any projects or contracts valued in excess of £113,057 they are subject to current EU procurement regulations which require that Procurement advertise the forthcoming contacts in the Official Journal of the European Union (OJEU). The main advantage of this route is that there may be other capable and innovative suppliers in the market place who Cwm Taf

UHB would have previously been unaware of that could deliver. Conversely, the biggest disadvantage is that this is the most administratively complex, expensive and longest route for procurement as typically it can take several months to complete the end-to-end process.

4.2 Procurement Strategy

National projects do not require a BJC, however for each project within one of the Strategic Themes of this programme a detailed BJC will be required with the scale of case being determined by the level of investment required.

The local Procurement Services team at Cwm Taf UHB falls under the national NHS Wales Shared Services Partnership Procurement Services function. One of the most common setbacks within the current Procurement structure at Cwm Taf UHB is that requestors want to pursue an initiative, but feel that the current Procurement frameworks hold them back from attaining a quick sign-off or conversely whereby Procurement are only being notified of urgent requests at an advanced stage. Therefore, timely and early engagement with the local Procurement Services team is vital to ensuring that projects and initiatives being proposed are directed to the right people at the right time as well as enabling better planning and allocation of Procurement resources.

Currently, there are 3 main routes into the local Procurement Services team at Cwm Taf UHB:

1. IMTP Planning Framework – this group identifies what projects and new initiatives will need Procurement involvement
2. Non-Pay Strategy Group – this goes reports into the Director of Finance and Procurement
3. Executive Capital Management Group (ECMG) – to review and approve funding for projects and new initiatives

However, going forward the Digital Health Steering Group will work in conjunction with NHS Wales Procurement Services to develop and execute appropriate procurement approaches and use the following evaluation criteria:

- ▶ Value for money
- ▶ Fitness for purpose to ensure the relevant clinical groups approve the proposed solution or system
- ▶ Timeframe
- ▶ Adherence to Standing Orders and Standing Financial Instructions
- ▶ Compliance with EU/UK Procurement Regulations as appropriate

The programme will take advice from the NHS Wales Procurement Services during the Procurement process in order to ensure that best practice is applied and value for money for the Procurement process is delivered.

4.2.1 Sourcing Options

The list below details the most widely used Procurement Frameworks across Cwm Taf and all other Local Health Boards in Wales for pursuing IT projects or new initiatives:

- ▶ Crown Commercial Services (CCS)
- ▶ All Wales
- ▶ Lead Provider Framework (LPF)
- ▶ National Procurement Service (NPS)

Dependent upon the value, the preferred sourcing option is to avoid the OJEU route by utilise a range of the Procurement Frameworks. The main benefits of these Frameworks are that they incorporate pre-agreed rates and terms with pre-qualified suppliers and enable greater ease of contracting. Therefore, the timescale for supplier selection via this Framework route is expected take a maximum of between 3 to 4 months. This is considerably faster and cheaper than a full OJEU procurement exercise as a certain degree of due diligence has already been undertaken and it is not necessary to advertise the required services beforehand.

5 THE FINANCIAL CASE

The Financial Case outlines the assessment of affordability by including the indicative cost summary, funding requirement and financial assumptions of the preferred way forward.

As part of the Financial Case of this SOP a financial model has been developed – for full details of the financial analysis please refer to the financial model in the Appendix.

Within the financial model there are several tabs that are interconnected to provide the full picture of the Financial Case. Below, a brief description is outlined for each tab:

Tab	Description
Assumptions	List of assumptions used for the SOP financial model
Summary Table	Top level summary of total costs and benefits for each Strategic Theme and Net Value over the 5 year period
Financial Summary	Summary of each individual project detailing the recurrent, non-recurrent costs and total cost and where applicable the benefits mapped to each Strategic Theme (this includes a selection of high-value projects)
Phase 1 Strategy Projects	Details the confirmed or pre-planned ICT projects as detailed in the ICT Corporate Development Business Plan 2017-2020. A breakdown is provided of each individual project outlining the recurrent, non-recurrent and total costs per year and source of information for each entry
Phase 2 Strategy Projects	Details the projects to meet new requirements that have arisen from the Digital Health Strategy development process. A breakdown is provided of each individual project outlining the recurrent, non-recurrent and total costs per year. For a more detailed breakdown of individual costs refer to the mentioned tab in the last column i.e. this will be one of the following: 'Information Management – New' 'Applications – New' 'Infrastructure – New'
Benefits	Benefits have been calculated from utilising a range of research sources from Cwm Taf official reports, annual accounts and performance dashboards to other NHS case studies and various industry research findings
Formula Assumptions	This is used for calculation of interface development costs for projects listed on the 'Phase 1 Strategy Projects' and 'Phase 2 Strategy Projects' tabs
Calculator	The calculator is applied to the benefits tabs to derive the benefits realised over a 3 year or 5 year period

5.1 Indicative Funding Requirements

Table 5 outlines the indicative capital requirements in order to pursue the preferred way forward of option 3 to **'Invest in strategic solutions to drive Cwm Taf UHB and National objectives'**. Table 6 on the next page provides a high-level summary of the financial analysis.

The sub total cost to deliver the preferred way forward is **£24,634,523**. Assuming that Training costs are recognised at 5% of overall costs the total cost of the preferred way forward rises to **£25,866,249**.

The capital required to deliver the preferred way forward over the next 5 years, which will support the delivery of the programme is **£15,109,987** inclusive of non-recoverable VAT.

The revenue required to deliver the preferred way forward over the next 5 years, which will support the delivery of the programme is **£5,772,936**.

The total capital and revenue costs have been divided by 5 to generate a yearly breakdown, whereby capital costs are **£3,021,997** and revenue costs are **£1,154,587**.

Table 5: Indicative Funding Requirements

£(000's)	2017-18	2018-19	2019-20	2020/21	2021/22	Total
Capital Costs	£3,022	£3,022	£3,022	£3,022	£3,022	£15,110
Revenue Costs	£1,155	£1,155	£1,155	£1,155	£1,155	£5,775
Depreciation		£604	£1,209	£1,813	£2,418	

The annual indicative depreciation charges have been based on an average life of 5 years and commencement in the first full year based on the assumption that most of the schemes for 17/18 will not go live until the end of year. It is assumed that the depreciation consequences will be funded by Welsh Government from strategic funding.

5.2 Financial benefits

The accompanying financial model in the appendix details all costs and benefit modelling. The following table summarises the costs and benefits over 5 years for each of the strategic solutions. For full details, please refer to the financial model.

Strategic Solution	Total Costs		Benefits		Net Value Impact (5yrs)	Strategic Theme linked to benefits from the following initiatives:	
Digital Health Board	£	13,427,211	£	13,560,560	£	133,350	1. Online Patient Booking Services; 2. Digital bed-boards & occupancy management; 6. Discharge automation; 9. Virtual consulting; 10. Enterprise Scheduling; 12. e-Prescribing; 14. Integrated Care Management (WCCIS); 15. Intelligent Referral Management; 16. Digital Dictation, 18. Self-Care Management and 19. Patient Identification
Insights-driven healthcare	£	1,233,000	£	1,334,950	£	101,950	7. Demand forecasting & capacity planning and 20. Real Time Analytics
Single patient view	£	589,375	£	2,001,472	£	1,412,097	5. Digital Care Record and 17. Clinical Communication
Intelligently integrated healthcare	£	367,500	£	147,180	-£	220,320	4. ESB integration of hospital key systems
Digital workforce	£	3,235,635	£	5,883,272	£	2,647,637	3. Employee mobile computing; 8. Single sign-on and 13. Self-Service Kiosks and Apps for Employees
Digital enablers	£	5,731,802	£	1,017,015	-£	4,714,787	11. Data Centre Consolidation
Adoption and exploitation	£	30,000		N/A		N/A	Indicative Project costs have been provided, however no benefits have been quantified for this Strategic Theme
Managing innovation	£	20,000		N/A		N/A	Indicative Project costs have been provided, however no benefits have been quantified for this Strategic Theme
SUB TOTAL	£	24,634,523	£	23,985,674	-£	648,849	
Training		£1,231,726					Assumption that Training is 5% of overall costs
TOTAL		£25,866,249		£23,985,674		-£1,880,575	Overall, there is a negative net value, but it is important to remember that only where possible have the key benefits have been quantified. The projects which have already had their detailed Business Cases completed have not been quantified further to be included here. In addition, the overall net value does not take into account the qualitative benefits which will add value for CTUHB and these are detailed within the Digital Health Strategy and SOP
Projects where there are quantified benefits		£13,455,890		£18,405,780		£4,949,890	When we analyse the projects where both cost and benefit are quantified, it demonstrates that Cwm Taf UHB will gain a net value benefit of £4,949,890 from pursuing the quantified projects. The remaining projects will deliver their own business and financial benefits, further justifying the total investment.

5.3 Impact on the Operating Cost Statement

In support of the Digital Health Strategy, the Health Board should establish a Strategic Change Programme Fund based on the roadmap to fund the key elements of the programme delivery over the next 5 years.

The Strategic Change Programme Fund will serve the purpose to cover the revenue costs of delivering the projects on the roadmap.

5.4 Affordability

Affordability will be made as the Digital Health Steering Group progress the programme onto the next stage to develop the individual Business Cases for the projects within the preferred way forward. The scale of Business Case will be determined by the level of investment required.

Whilst the Digital Health Steering Group is responsible for make the case, the CTUHB Executive Board will represent the final sign-off before funding is approved and allocated to the programme.

6 THE MANAGEMENT CASE

The Management Case demonstrates that the “preferred option” is capable of being delivered successfully, in accordance with recognised best practice

6.1 Programme and Project Management Arrangements

The programme will be overseen by the Digital Health Steering Group that will meet on a monthly basis. The membership of the Digital Health Steering Group will include a cross-sample of clinical and non-clinical departments, Assistant Director for ICT, the executive lead(s), procurement and finance representatives.

The Digital Health Steering Group will own the strategy and roadmap and drive its implementation and adherence. Where applicable an agile framework will be utilised on the programme to support the delivery of the roadmap to enable “quick wins”, provide greater agility and help to foster a culture of greater responsiveness.

The Steering group will assess and approve changes to the strategy and roadmap, adopting an iterative, agile approach to ensure that changes are made to reflect progress, emerging requirements and changing priorities.

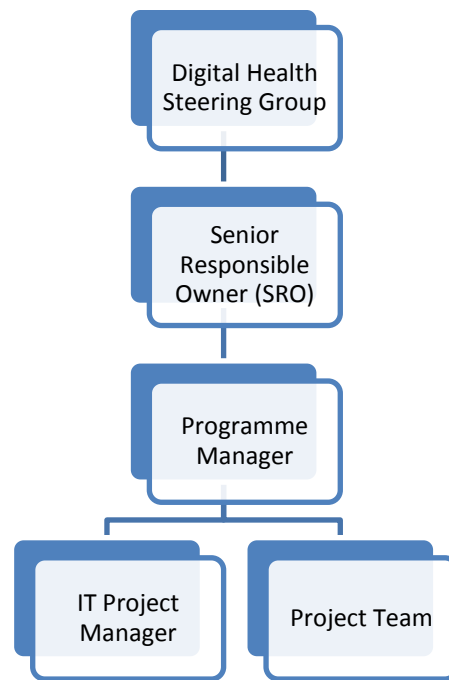
As part of the move to an agile framework it is recommended that Cwm Taf UHB adopt the Digital Service Standard that outlines a set of 18 criteria to help government create and run good digital services, of which, criteria 4 details how to use agile methods – see links below for further information:

<https://www.gov.uk/service-manual/service-standard>

<https://www.gov.uk/service-manual/service-standard/use-agile-methods>

6.2 Programme and Project Reporting Structure

The programme will be managed under the Project Reporting Structure outlined below, whereby the key members are the Digital Health Steering Group, Senior Responsible Owner (SRO), Programme Manager, Project Manager and Project Team. These members work in cohesion and collectively are responsible for overall management and delivery of the end-to-end projects within the programme. The Digital Health Steering Group reports directly into the CTUHB Executive Board.



It is recommended that the SRO be allocated to a senior stakeholder within Cwm Taf UHB, and should be someone independent of the Digital Health Steering Group to avoid any potential conflict of interest.

6.3 Programme Milestones

Subject to this SOP being approved, it is anticipated that implementation of the programme will be phased over the next three years from 2017/18 to 2019/20.

6.4 Programme Assurance

The programme will be overseen by the Digital Health Steering Group that will meet on a monthly basis. Project Boards and teams will be established and will include Health Board and where relevant, third party representation with experience in delivering ICT initiatives, as appropriate. These Project Boards will report regularly to the Digital Health Steering Group to maintain Programme Assurance.

6.5 Benefits Realisation and Tracking

To ensure the expected benefits of the programme are successfully realised a Benefits Realisation Strategy will be applied, the objectives of which are to:

- Identify the benefits and responsibility for their delivery.
- Establish baseline measurement where possible.
- Quantify benefits where possible.
- Periodically assess likely realisation and any actions required.
- Manage the change programmes.
- Record further expected benefits identified during the project.
- Measure outcomes.

Benefits will be agreed as being realised when the expected measurement of change has been appreciated. This will be identified and determined during Benefits Reviews. Furthermore, the tracking of benefits realisation and reviews will continue beyond the lifecycle of the programme as it is expected that benefits will continue to accrue.

The table below outlines the roles and responsibilities to maintain and ensure that benefits realisation and tracking is successful for the health board

Role	Responsibilities
Sponsor/SRO	<ul style="list-style-type: none"> • Own the programme vision statement • Own the Benefits Management Strategy and responsible for ensuring it is adequately maintained • Input and approval, together with Sponsoring Group, of benefits defined in the Benefit Profiles • Lead benefits reviews
Sponsoring Group	<ul style="list-style-type: none"> • Show visible commitment to realisation of benefits • Identify and appoint suitable candidates for the Business Change Manager roles • Ensure the strategic alignment of benefits realisation • Ensure commitment of stakeholders in their business areas to benefits realisation
Programme Manager	<ul style="list-style-type: none"> • Developing the Benefits Management Strategy on behalf of the Sponsor/SRO • Preparation of the Benefits Realisation Plan and ensuring it is aligned with the Programme Plan and Business Case. • Initiating benefit reviews
Programme Office	<ul style="list-style-type: none"> • Acts as the information hub for tracking and progress-chasing benefits, scheduling reviews and communicating results • Provides an objective challenge of benefits, risk, dependencies, etc.
Business Change Manager	<ul style="list-style-type: none"> • Identifying and quantifying the benefits in close consultation with stakeholders • Maintaining the Benefit Profiles • Own particular benefits as profiled • Prepare for transition to new ways of working • Ensure that ongoing business performance is not adversely impacted by changes • Continuously seek additional benefits • Realising benefits: <ul style="list-style-type: none"> ○ Agreeing profile ○ Impact analysis ○ Quantifying ○ Risk assessment
Benefit Owners	<ul style="list-style-type: none"> • Own Benefit Profiles • Establish benefit baselines and measures • Take necessary actions to ensure realisation of owned benefits

For information, there are a number of standard benefit realisation methodologies and guides available on the NHS Digital website that may be of interest and applicable to the programme.

6.6 Risk Management

Each individual project will require the regular maintenance of a risk and issue register. The Project Manager is responsible for escalating all severe risks and/or issues to the Digital Health Steering Group on a monthly basis via their Highlight Report. However, where a decision is required urgently, a Highlight Report will be raised and a decision is sought from the Steering Group within a shorter timescale.

6.7 Post-Project Evaluation

Post-Implementation Reviews (PIR) will be scheduled after a project has completed, which is usually within 1 month of completion. During the PIR, the evaluation criteria detailed in Table 2 within section 3.1 of the Economic Case will be utilised to measure, assess and evaluate projects post-completion. The PIR also serves the purpose to:

- Ascertain the degree of success from the project, and in particular the extent to which it met its objectives, delivered planned levels of benefit, and addressed the specific requirements as originally defined.
- Examine the efficacy of all elements of the solution to see if further improvements can be made to optimise the benefit delivered.
- Capture lessons learnt from the project to ensure common pitfalls or setbacks can be avoided as well as share experiences that can be used by project resources and by Cwm Taf UHB to improve future project work and solutions.

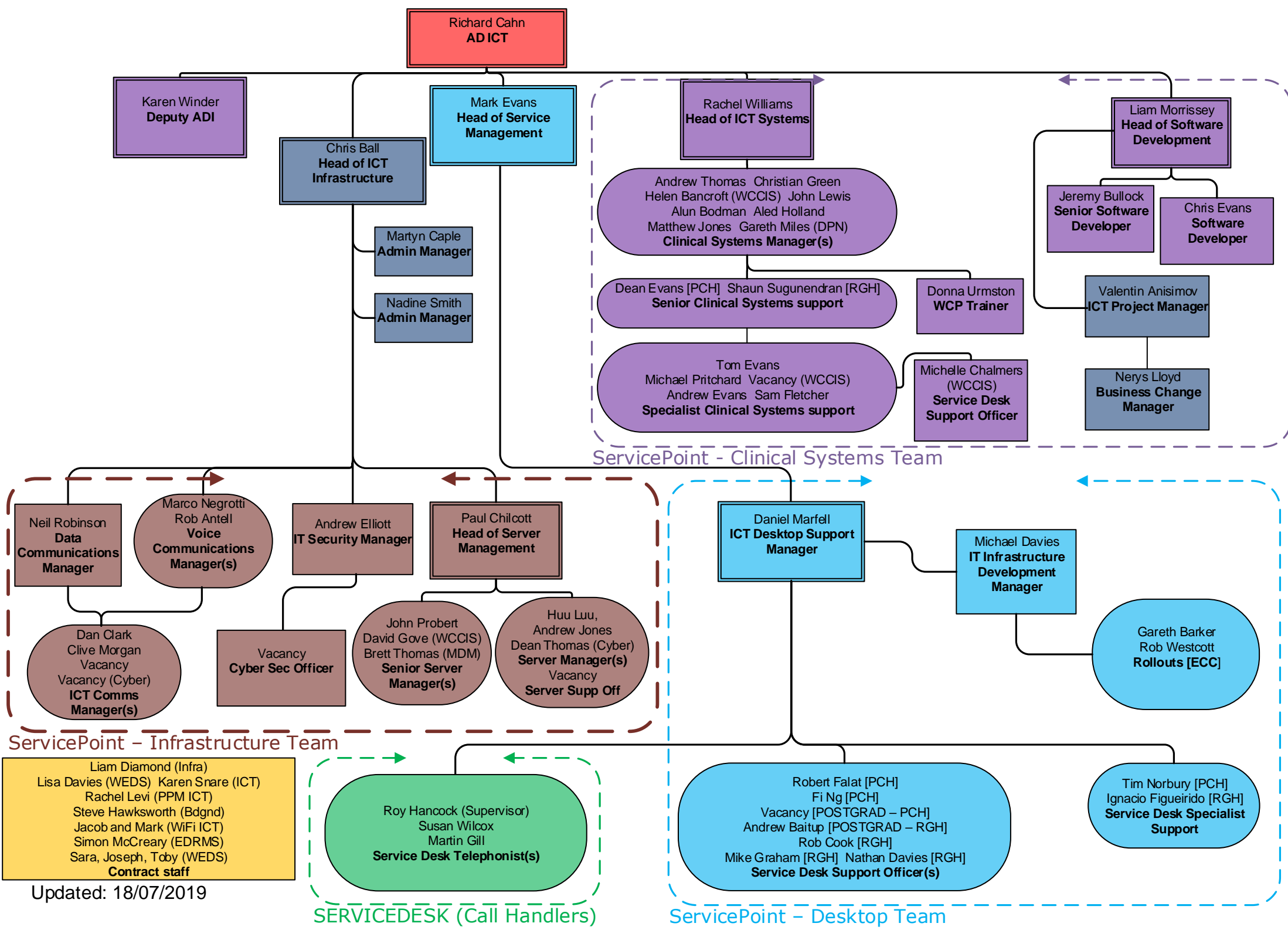
7 APPENDICES

The Appendices is comprised of the following documents relevant to the SOP

Appendices	Reference Guide	Brief Description
Appendix 1	CTUHB Digital Health Strategy – Project Catalogue	Provides an overview of each project for the scope, level of priority, key activities and output, planned timescales and details of high-level qualitative benefits
Appendix 2	CTUHB Digital Health Strategy – Roadmap	The roadmap illustrates the implementation timescales for each project within the programme and is split by national, collaborative and local
Appendix 3	CTUHB SOP Financial Model	The financial model provides details of the Programme Capital/Investment Costs as well as the Projects Summary and Benefits/Value

8 ACRONYMS

BAU	Business As Usual
BJC	Business Justification Case
CCS	Crown Commercial Services
CTUHB	Cwm Taf University Health Board
ECMG	Executive Capital Management Group
ICT	Information and Communication Technology
ITOM	IT Target Operating Model
LPF	Lead Provider Framework
NPS	National Procurement Service
NWIS	NHS Wales Informatics Service
OJEU	Official Journal of the European Union
PIR	Post-Implementation Review
SOP	Strategic Outline Programme
SQT	Single Quotation Tender
UHB	University Health Board



Updated: 18/07/2019



ICT - Corporate Development

Business Plan 2019-2020

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1. Directorate Profile, Key Context and Vision

1.1 Directorate Profile

The current directorate structure is shown in figure 1.

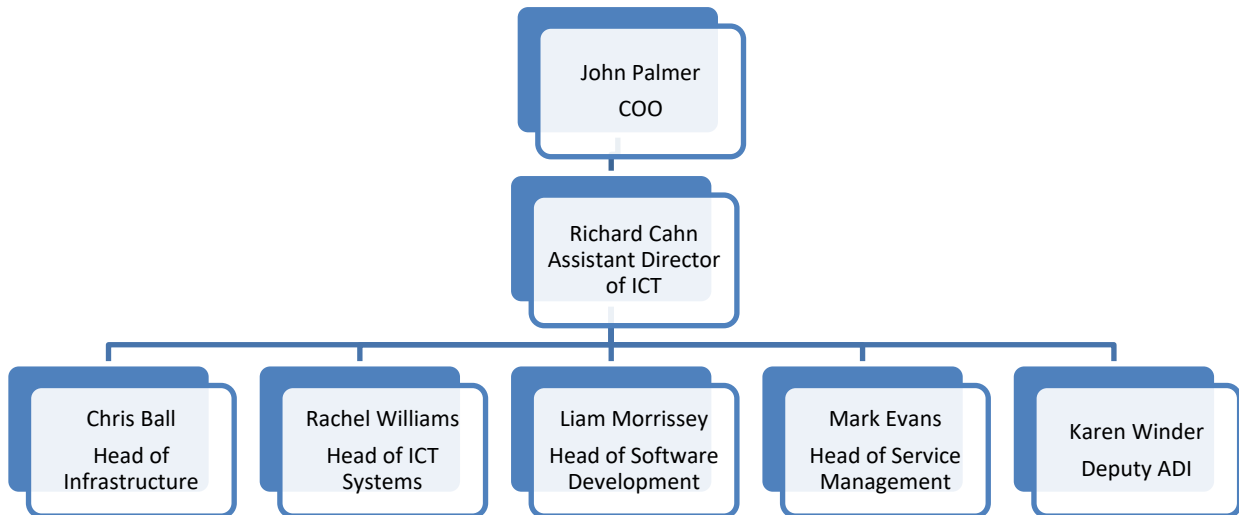


Figure 1: Directorate Structure

Key measures of the directorate, based on the agreed opening position for 2018/19, are shown in table 1:

Table 1: Directorate Metrics

Measure	Value (2018/19)	Notes
Headcount (ESR)	49.10	
Pay Budget	£1,987k	
Non-Pay Budget	£3,119k	
Income	£208k	

Each department within the directorate is described below:

ICT Systems
Summary
The main objective of the ICT Systems teams is being responsible for supporting and developing all of the UHB

Systems and applications whether in house, commercial or National solutions. Individually each team is responsible for a number of logically grouped systems, based both on division, directorate and similar systems, but these groupings will be subject to continuous change as computerised systems are implemented in different areas, as directorate boundaries change, and as the organisation develops.

IT system team work closely with their designated departments to provide IT support for both users and the system (e.g. pathologists and biomedical scientists)

The team works with the departments to understand their existing and future business requirements. Working as a group that bring the priorities of each area to the HB attention and meet regularly to discuss the realities of meeting those needs, and feedback to the respective departments any future plans/changes.

The delivery of new systems and continual development of the existing catalogue requires the close collaborative working within ICT between infrastructure and software development teams.

Personnel

**Head of ICT Systems, Band 8A
7 Clinical System Managers, Band 7
2 Clinical Systems Support Managers Band 6
6 Specialist Clinical Support, Band 5
1 WCP Trainer, Band 5
See appendix B for list of systems supported and the service level agreements**

Duties

- deliver new/updates to systems for the department as required**
- bid for capital to improve the IT services within the department**
- work on National projects**
- provide subject matter expertise to National bodies**
- attend National boards/clinical groups to put forward the Cwm Taf**
- views and ensure our needs are meet at National level**
- work with the UHB Clinical Lead to fill existing communication gaps with the clinicians. Working as a group that bring the priorities of each area to the HB attention and**

meet regularly to discuss the realities of meeting those needs, and feedback to the respective departments any future plans/changes

- overarching meetings with clinicians to discuss
- what are their priorities
- what are their needs from a clinical system
- agreement on a road map on how we realistically achieve each step if it is deliverable
- understand the digital priorities of the health board and contribute to the digital strategy

Software Development

Summary

The main objective of the Software Development Team at Cwm Taf is to provide ICT solutions for specific requirements that cannot be delivered nationally by NHS Wales or purchased from 3rd party suppliers due to issues around availability, suitability or funding.

In addition to this, the team also assist Clinical Systems in the area of Interfacing, ensuring that where practicably possible, all ICT systems are integrated together.

Where appropriate, the Software Development team work with neighbouring Health Boards and NHS Wales Informatics Service (NWIS) to reinforce the co-ordinated approach for developing Health and Social Care information systems.

The team also oversee the management of all ICT projects and aspects of business change.

Personnel

Head of Software Development, Band 8a
1 Senior Software Developer, Band 7
1 Software Developer, Band 6
1 ICT Project Manager, Band 7
1 ICT Business Change, Band 6
1 ICT Project Administrator (contractor)
3 ICT Project Managers (contractors)

Duties

- **Identification of need**
- **Analysis of the software requirements**
- **Detailed specification of the software requirements**
- **Software design**
- **Programming**
- **Testing**
- **Deployment and Maintenance**
- **Management of ICT Projects**

Infrastructure

Summary

The ICT Infrastructure division represents almost one third of the department's staffing. Its main objective is to provide and support a range of underlying technologies to assist the organisation in running efficiently. These services are essential to the everyday mechanics of Cwm Taf and integral to effective service delivery. These include hardware, software, networking, implementation, security, and administration.

Personnel

ICT Infrastructure is made up of 16 members of staff spread over 5 sub teams led by the Head of ICT Infrastructure assisted by 1 deputy.

**1 Head of ICT Infrastructure, Band 8b
1 Head of Server Management, Band 8a**

I.T Infrastructure is made up of the following teams.

- **Server Team**
- **Voice Communications**
- **Data Communications**
- **Security**
- **Business Administration Management**

A detailed description of each team is provided in the following sub sections.

Servers

Summary

The main objective of the Server Team is to manage all aspects of the Cwm Taf server estate, ensuring that all services are fully operational at all times and configured to provide optimum service. There are currently 107 physical servers, 114 Hyper-V virtual servers, and 183 Xenapp Citrix servers.

Duties

Installation and maintenance of a range of complex servers and server related services
Ensuring server systems are configured, secured and maintained to National Standards
Utilise common server technologies and approaches (Virtualisation, Physical Servers, Operating Systems, Storage)
Investigation of specialist and complex server issues when they arise
Providing specialist advice to the organisation on the use of server systems
Manage and implement server projects for growth and replacement
Facilitating the running of 3rd party hosted server systems
Setup and Support of user accounts and mailboxes
Provision of File and Print Services
Provision of a Mobile Device Management Solution
Maintenance of a complex Citrix environment to allow access to end user services
Implementation of a complex backup strategy to ensure the Health Boards data is secure and recoverable
Provision of an on call service for the IT Infrastructure
Contribute to the "All Wales" Strategic National programme (NWIS) on delivering technical solutions

Voice Communications

Summary

The main objective of the Voice Communications Team is to manage the Board's IT voice communications resources.

This includes technical development and implementation as well as input into the ICT Strategy from a voice communications perspective. The team are responsible for maintaining the delivery of high quality IT voice communications services, ensuring that the services are fully operational at all times and configured to provide optimum service. There are almost 7,000 extensions in use, with around 2,700 in the historic North and around 4,250 in the historic South.

Duties

Telephony to internal & external

Payphones

Fax machines

Mobile phones

Wide Area Pagers

Local Area Pagers

Blackberry

DECT & Wi-Fi (telephony)

DAKS (cardiac Arrest)

Switchboard

Automated Attendant (ViP)

Cabling Infrastructure

Servicepoint

VoIP

PSBA

Provision of an on call service for the IT Infrastructure

Data Communications

Summary

The main objective of the Data Communications Team is to manage the Board's IT data communications resources, both wired and wireless. This includes technical development and implementation as well as input into the ICT Strategy from a data communications perspective. The team are responsible for maintaining the secure delivery of high quality IT data communications services, ensuring that the services are fully operational at all times and configured to provide optimum service. There are 240 switches, delivering around 8,500 copper ports, and 775 wireless access points. Networks at each site are connected to the PSBA network, protected by a range of firewalls dependant on size.

Duties

**Provision of Local Area Networks at every connected site.
Oversee the provision of data circuits for WAN connectivity
Configuration and installation of all data networking equipment including firewalls and other security devices
Ensure key data equipment is covered on maintenance
Attendance at NWIS meetings
Wireless configuration and installation with provision to key sites
Liaise with third party contractors ensuring compliance with NWIS security policies
Oversee communications staff ensuring skills are covered either through external training or in house
Work with NWIS and other Public sector bodies to facilitate network connectivity over the PSBA all Wales WAN
Work with the Voice communications managers ensuring the data network can support the rollout of Voice Over IP telephones
Ensure key data networking equipment is protected from power outages and spikes by the use of UPS and transfer switches
Attend project meetings and advise accordingly in relation to connectivity
Provision of an on call service for the IT Infrastructure**

Security

Summary

The main objective of the Security Team is to be responsible for the management of all aspects of IT Security throughout the Health Board, ensuring that all systems conform to the Board's IT security standards.

Duties

- Management of all aspects of IT Security throughout the organisation**
- Ensuring the secure operation of all IT Systems and that they conform to the NWIS and the organisation's security standards**
- Responsible for all IT security policy developments, implementation, monitoring and review**
- Responsible for the IT aspects of the organisation's Information Security Policy**
- Provide support, direction and training to ICT staff and directorates on IT Security issues**

- **Lead on the implementation of recognised industry IT Security Standards (e.g. ISO 27001), UK and Welsh Government, NHS UK, and NWIS IT Security Policies, Procedures and Standards e.g. Code of Connection Agreement**
- **Co-ordinate the development of IT Disaster Recovery Plans, SOPs and SSPs in conjunction with ICT Staff and Departmental Data Owners**
- **Develop and maintain the ICT Business Continuity Plans and ensure this is fed back into the organisation-wide Business Continuity Plan**
- **Develop and maintain the ICT Department's Risk Register with Heads of the ICT Department**
- **Record, monitor and investigate any IT Security incidents**
- **Responsible for the monitoring and development of the organisation's Email and Internet filtering software**
- **Responsible for the monitoring and development of the organisations anti-malware and Intrusion Detection Systems**
- **Liaise with System managers across the organisation to ensure that User management procedures are adhered to.**
- **Responsible for the development of IT Security Audits, both internal and external, as required**
- **Provision of an on call service for the IT Infrastructure**

Business Administration and Management

Summary

The main objective of the Business Administration and Management division is the provision of robust administration services, including management of over 200 maintenance contracts, procurement of all services and goods, capital and revenue expenditure, personnel admin such as training provision and records, payroll functions, and health and safety.

Duties

- **HR administration**
 - **ESR input, pay cards, expenses, annual leave, sickness reviews monitoring, on-call, HR Policies**
 - **Maintaining department Training logs**
 - **Health & Safety Implementation for Department**
- **Meeting administration (minutes and co-ordination)**
 - **ICT Groups management**
 - **Individual Meetings**
- **Finance**

- **Managing maintenance contracts, budget monitoring and review with Finance**
- **Oracle ordering including management of record spend**
- **Manage Capital/Revenue spend**
- **SOURS,**
- **Assets Register Management**
- **Licences for Cwm Taf Portfolio/True up**
- **Telecommunications**
 - **Mobile Device Management**

Service Management

Summary

The Service Management division represents over one third of the department's staffing. Its main objective is to provide support to a range of users, from initial contact with the Service Desk, through to incident and service request resolution through Desktop Support, and ongoing hardware refresh cycles through Infrastructure Development.

Personnel

Service Management is made up of 17 members of staff spread over 3 sub teams led by the Head of Service Management.

- 1 Head of Service Management, Band 8a**
- 1 Desktop Support Manager, Band 7**
- 1 Infrastructure Development Manager, Band 6**
- 2 Desktop Specialist Support Officer, Band 5**
- 8 Desktop Support Officer, Band 4**
- 1 Service Desk Supervisor, Band 3**
- 2 Helpdesk Operator, Band 2**
- 1 Helpdesk Operator (Contractor)**

Service Management is made up of the following teams.

- **Service Desk**
- **Desktop Support**

- **Infrastructure Development**

A detailed description of each team is provided in the following sub sections.

Service Desk

Summary

The main objective of the Service Desk is to handle incidents and service requests, as well as provide an interface to users for other ITIL Service Management activities. The Service Desk supports around 8,900 user accounts.

Duties

- **Incident management**
- **Problem management**
- **Configuration management**
- **Change management**
- **Release management**
- **Responsible for taking all phone calls for IT issues**
- **Logging calls and if appropriate resolving e.g. password resets**
- **Passing calls onto the appropriate team for second level triage**
- **Contacting the appropriate team if major failure identified**
- **Escalation of calls to the NWIS National Service Desk**
- **Issuing laptops and audio visual equipment**

Desktop Support

Summary

The main objective of the Desktop Support Team is to support all users with End User Computing issues in non-clinical areas, and also non-specialised clinical areas such as Outpatients rooms and Wards. The estate currently consists of 5,393 licensed workstations and 1,455 printers.

Duties

- **Responsible for issues related to desktops, laptops and peripherals such as printers**
- **Set up and configuration of computers for new users**
- **Deployment of new and replacement computers**
- **Repairing computer hardware issues**
- **Resolving operating system issues**

- **Moving workstations as required**
- **Supporting non-clinical systems, e.g. finance and facilities**
- **Provision of an on call service for the Clinical Systems Team (depending on banding)**

Infrastructure Development

Summary

The main objective of the Infrastructure Development division is the provision of a modern and robust End User Computing environment for users, for the numbers of desktops and printers noted in the Desktop Support section. This division is one of the main focuses of the capital rolling replacement programme.

Duties

- **Investigate, manage and facilitate all aspects of computer hardware roll out within the organisation in relation to local ICT work plan, rolling replacement programme plan, capital programmes and other externally funded schemes**
- **Ensuring that all IT equipment purchased adequately meets the needs of the service**
- **Provide full stock control for the whole department's ICT storage, including procurement, delivery, storage, distribution and deployment**
- **Plan and organise a range of activities to provide full or part ICT Project Management for multiple projects and programmes within the organisation. These also include expansion into new sites**
- **Document all aspects of the rollout programme, including creating reports, project plans, illustrations and drawings as required**
- **Liaise with System Managers, Server Managers and Data Communications Managers to ensure that all roll out deadlines are adhered to, whilst ensuring that all IT equipment purchased adequately meets the needs of the service**
- **Plan and organise a range of activities, some straightforward, some complex, in relation to rolling replacement and stated projects, to ensure any work programmes and modifications are carried out appropriately**
- **To develop, manage and co-ordinate a specialist team to complete any of the above mentioned programmes.**
- **Manage and facilitate the safe disposal of old equipment through approved third parties, in accordance with EU regulations**

- **Provision of an on call service for the Clinical Systems Team (depending on banding)**

1.2 Key Context

Cwm Taf University Health Board is one of seven Welsh Health Boards and currently consists of 2 district general hospitals, 3 community hospitals, a mental health unit and a number of local community health centres. It serves a population of roughly 300,000 citizens with a staff of circa 7000 people.

NHS Wales has been an independent body pursuing a Welsh agenda, as set by the Welsh Assembly, for over 15 years. However, it still fits into a UK national context due to UK funding allocations and UK statutory and regulatory compliance regimes. It also interacts with UK wide organisations which set professional standards for care workers and collectively bargain for unionised staff.

This section explores the international, national and local environment in which Cwm Taf operates with respect to technology constraints and drivers. This also sets forth policy elements which result from this analysis.

1.2.1 International Environment

Cwm Taf has recently undertaken an independent technology benchmarking exercise which compares the health board to an international dataset of over 1000 hospitals. The assessment was undertaken by the Healthcare Information and Management Systems Society (HIMSS).

HIMSS is a global, cause-based, not-for-profit organization focused on better health through information and technology. HIMSS leads efforts to optimize health engagements and care outcomes using information technology.¹

The HIMSS digital maturity scale is shown in the figure below:

¹ HIMSS Website

STAGE	HIMSS Analytics EMRAM EMR Adoption Model Cumulative Capabilities	
7	Complete EMR; External HIE; Data Analytics, Governance, Disaster Recovery, Privacy and Security	
6	Technology Enabled Medication, Blood Products, and Human Milk Administration; Risk Reporting; Full CDS	
5	Physician documentation using structured templates; Intrusion/Device Protection	← 50% of NHS England Hospitals (as independently assessed in 2014)
4	CPOE with CDS; Nursing and Allied Health Documentation; Basic Business Continuity	
3	Nursing and Allied Health Documentation; eMAR; Role-Based Security	
2	CDR; Internal Interoperability; Basic Security	← Cwm Taf Health Board (independent assessed)
1	Ancillaries - Laboratory, Pharmacy, and Radiology/Cardiology information systems; PACS; Digital non-DICOM image management	
0	All three ancillaries not installed	

Figure 2: HIMSS Digital Maturity Stages

Cwm Taf has scored at stage 2 of the maturity model. The average digital maturity of European hospitals in the data set is 4.7 and the available data for England indicates that they conform closely to this average, with 50% of scored hospitals at stage 5 or better.

The first stage 7 hospital in the UK is expected to be Cambridge University Hospitals in December 2018. We recognise that there may be a selection bias in this data set (very poor hospitals may not elect to be measured), but given the size of the data set, and anecdotal information from site visits by Cwm Taf staff, there is clearly a digital divide between Cwm Taf and the typical European hospital.

Cwm Taf ICT staff have a good working knowledge of the digital maturity of other Welsh Health Boards. Although these Health Boards have not been independently assessed, we believe that would all score similarly to Cwm Taf.

Cwm Taf Policy: Cwm Taf will continue to benchmark itself against international digital maturity standards and use this as one yardstick to measure progress against the strategy.

1.2.2 UK National Environment

NHS Wales has diverged from the UK national environment with respect to technology since its inception. It did not, for example, participate in the NHS England National Programme for IT (2004-2010) but instead pursued an independent strategy.

However, NHS Wales is heavily influenced in technology matters by the relative size of NHS England. This is expressed in two ways. The first is that NHS England expends more absolute effort in the promulgation of technology standards and therefore is more mature in this respect. One example is the robust clinical safety standards for IT systems which NHS England has established and the training and certification regime set up by NHS England to support these standards.

Cwm Taf Policy: Cwm Taf will adopt more mature technology standards from outside Wales where Welsh standards do not yet exist. Cwm Taf will operate to the highest available level of patient safety.

The second influence from NHS England is on the market of available suppliers. As the English market is many times larger, suppliers are keen to comply with English requirements and sometimes deprioritise or ignore those from smaller markets.

However, NHS Wales has a distinct advantage in that Welsh Health Boards span a geography while English hospitals exist in care silos. Wales is therefore much better placed to achieve integration across care settings. This distinction is especially pronounced in joining up out of hospital care.

Cwm Taf Policy: Cwm Taf will seek to differentiate itself in delivering integrated and out of hospital care. Our goal is to be recognised as a role model within and without Wales.

1.2.3 Welsh National Environment

The Welsh environment that is applicable to ICT is mainly articulated in these documents:

- A Healthier Wales: our Plan for Health and Social Care
- National Informatics Management Board
- Integrated Planning and Delivery Board
- National Operations Boards (Planned Care, Unplanned Care, etc.)

Cwm Taf is an active participant in all of these activities and our plan responds to these drivers.

Welsh Informatics

Informatics in Wales experiences a distinct tension between local and national agendas. There is a prevalent Welsh philosophy of collective action best captured by the phrase “Once for Wales.” Various interpretations of this philosophy result in competing priorities and direction between local Health Boards and the National Welsh Informatics Services (NWIS).

The Welsh Audit Office highlights the lack of strategic investment in technology by NHS Wales.

During 2016, NHS bodies and NWIS developed the strategy implementation report which, for the first time, sets out indicative costs and a timeframe for delivery of the strategy. ... The total cost over the five-year period 2016-17 to 2020-21 is tentatively estimated at £484 million on top of existing budgets, ... The Welsh Government has not yet committed to providing this funding.²

In addition to noting the lack of funding commitment from Welsh Government, the report also highlight a significant real term budget decrease in ICT across NHS Wales. Cwm Taf must therefore work on the assumption that significant ICT funding (a typical health board digital refresh would cost £20m-£30m, see 2017 Strategy) will not be available from Welsh Government in the short to medium term.

Cwm Taf will also need to decide whether or not to accept the constraints of the national strategy noted above or to forge an independent route. Reliance on the national strategy will drive the pace of Cwm Taf implementation but theoretically come with national funding. The following table shows our current estimates for the completion of national business cases for key ICT systems. Note the Cwm Taf, even after approval of a national business case, will need to wait its turn in a deployment queue and that major systems take 12 months or more to deploy properly. Therefore reliance on the national strategy implies Cwm Taf implementation primarily in FY21/22.

	FY18/19					FY19/20				FY20/21			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Patient Pathway	Outline Business Case					Final Business Case							
Pharmacy	Outline Business Case					Final Business Case							
Electronic Prescribing	Outline Business Case					Final Business Case							
LIMS 2													

² WAO Report, p. 44

Figure 3: Nominal Timeline for Key National Strategy (Key Systems)

Cwm Taf Policy: Cwm Taf will maintain its reputation as an aggressive implementer of national ICT solutions and seek to accelerate the implementation of these in Cwm Taf via strategic relationships, local funding contributions and by building our organic capability to deploy ICT.

Welsh national authorities have created a national informatics plan which has the support of the National Informatics Management Board (NIMB). This plan, while not fully funded, provides the clearest view of the near term national plan.

Cwm Taf Policy: Cwm Taf will work within the near term plans as approved by the national authorities. Our strategy will seek to leverage this plan to achieve the most positive business impact.

The table below shows our analysis of the cost vs benefit of local and national initiatives.

<p>High difficulty, High saving</p> <ul style="list-style-type: none"> • Medical Records Digitisation • WCCS • Patient flow • WEDS • Single sign on • Enterprise scheduling 	<p>Medium difficulty, High saving</p> <ul style="list-style-type: none"> • CHAI paed nursing e forms • Digital Dictation • Patient Portal 	<p>Low difficulty, High saving</p> <ul style="list-style-type: none"> • WCP modules - WCRS, WRRS, MTED, WPRS, WISDM, • Choose Pharmacy, EDAL/MTED • LIMS • Digital pathology
<p>High difficulty, Medium saving</p> <ul style="list-style-type: none"> • National data warehouse BI services <p>Transformation Programme</p>	<p>Medium difficulty, Medium saving</p> <ul style="list-style-type: none"> • WIAS • 111 • INR standardisation across HB • Clinical insights platform • Master data management • Switchboard rationalisation • Enterprise scheduling • Cyber Security • Patient ID • ITU ICIP pharmacy module • Pathology managed service 	<p>Low difficulty, Medium saving</p> <ul style="list-style-type: none"> • Ophthalmology • Theatre system enhancements • Equipment Tracking RFID • Vision 360 • Employee self service kiosks and apps • Skype • Microsoft licensing • Mobile device Management • Multifunctional devices • Enterprise monitoring • Enterprise service bus • Telehealth • Bed management (interim solution)
<p>High difficulty, Low saving</p>	<p>Medium difficulty, Low saving</p> <ul style="list-style-type: none"> • WPOCT • Exploiting clinical insights • Infrastructure refresh programme 	<p>Low difficulty, Low saving</p> <ul style="list-style-type: none"> • Haemonetics • Telepath DR • Citrix refresh • Data centre consolidation • ITOM enhancements • Architecture review and tech road map • Digital process

Bridgend Boundary Change

Welsh Assembly Government has approved a change to health board boundaries. As a result, Cwm Taf will grow to include the Bridgend area from 1 April 2019.

The Bridgend area ICT systems are tightly integrated with its current health board. Aligning these systems to Cwm Taf will require significant time and funding. It will also occupy a significant amount of time in the diary of the technical leadership of Cwm Taf. A realistic assessment of this impact will need to be taken account of in the outline implementation plan.

1.2.4 Cwm Taf Local Environment

Cwm Taf Corporate Strategy

Cwm Taf, as a Health Board, has an Integrated Medium Term Plan (IMTP) but no overarching corporate strategy. However, the following graphic is continually referred to in discussions that bear on the corporate strategy.



Figure 4: Cwm Taf Strategy Graphic

The diagram is explained in STAY WELL IN YOUR COMMUNITY - Seamless services, closer to home, transforming outcomes (July 2018), a proposal from Cwm Taf to Welsh Assembly Government which seeks a strategic investment in out of hospital care. The intention of the transformation is to decrease the demand on secondary care services. It is envisaged that this strategy will allow funding for secondary care to be freed up for investment in out of hospital care. The transformation recognises digital as a “golden thread” or key enabler:

Digital, Data and Technology – systematically digitising our health and social care records, applying supportive artificial intelligence to guide clinical care and community support to help people to maintain their independence through assistive technologies.³

³ STAY WELL IN YOUR COMMUNITY - Seamless services, closer to home, transforming outcomes (July 2018), p.1

1.3 Vision

In 2017 Cwm Taf commissioned an ICT strategy document from ATOS which was subsequently presented to the Board (*Cwm Taf University Health Board: Digital Health Strategic Outline Programme May 2017*). The 2017 strategy document was accepted in principle but not brought into action. The primary reason given for this was the financial requirements of £17.1m capital and £10.7m revenue funding over 5 years.

Cwm Taf Learning Point: The revised Cwm Taf digital strategy will need to address the reality of ICT funding in NHS Wales

Cwm Taf Policy: The near term Cwm Taf strategy will seek to sweat existing assets rather than expecting a major technology refresh in the next 2-3 years.

Cwm Taf Learning Point: Detailed cost estimates were produced for the 2017 strategy document. These estimates are still valid and will be reused for the 2018 strategy.

Cwm Taf also engaged an external evaluation of the underlying ICT infrastructure which raised several concerns. These concerns are highlighted in the radar graph below.

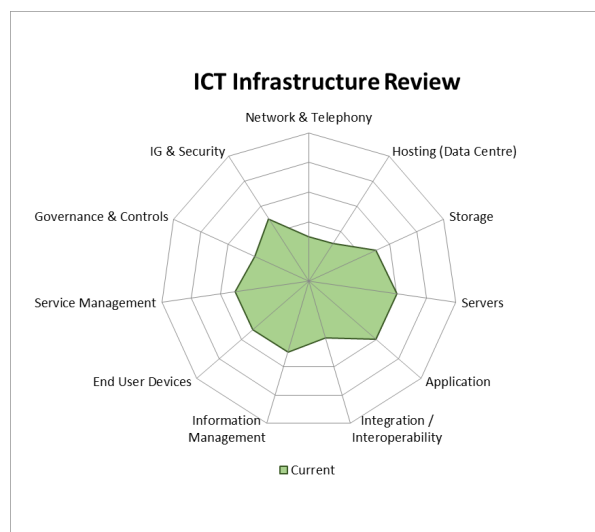


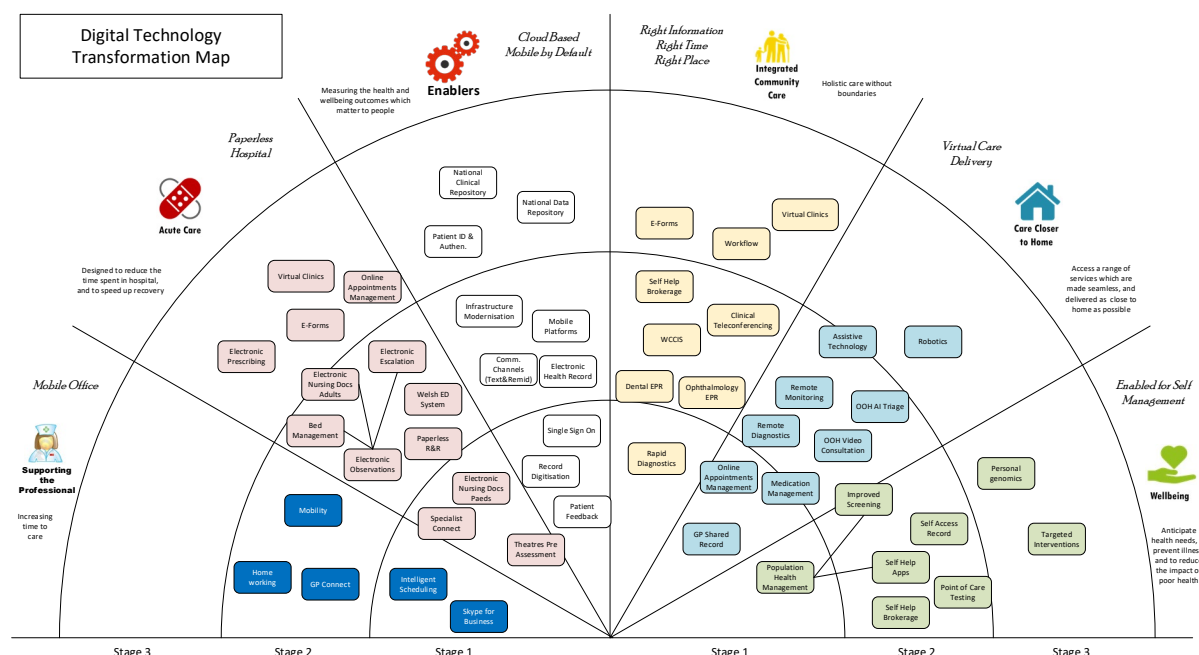
Figure 5: Infrastructure Review Radar Graph

As a result of the issues uncovered, a full infrastructure investigation was commissioned which resulted in an infrastructure strategy, plan and cost estimated. This review is now completed and the cost estimates included in the 3 year plan.

The digital strategy supports the HCS Themes.

- Safe Care
- Timely Care
- Individual Care

As shown in the following figure which ties to the CTUHB strategy:



2. Progress in Delivering the 2018/19 Plan

A broad range of ICT achievements have been realised, taking us some way towards meeting our vision.

2.1 Infrastructure

- Delivered the capital programme on time and to budget.
- Managed the revenue budget within constraints, despite the CRES requirements.
- Replaced the telecoms systems with a single Mitel technology, where appropriate.
- PSBA CNC (Core Network Change) project, through the national review by Welsh Government with BT.
- Server hardware refreshes – SAN and Hyper V.
- Continued migration off legacy technologies, such as Windows Server 2003, Office 2007, and SQL updates.
- Review of backup architecture.
- Ongoing reconfiguration of the estate under the South Wales Plan and also the PCH Ground and First Floor refurbishment.

2.2 ICT Systems

- Worked with NWIS to deliver the National solutions - being the leader in Wales
- Delivered the ICT element of a major instrument refresh in pathology
- Key Health Board in working with NWIS to implement the LIMS blood transfusion module
- Brought the DAWN Pharmacy project to go live ready
- Lead the ICT rollout of the histology module in LIMS at CTUHB
- Formed a collaboration with BCU and a commercial company to develop mobile electronic admission and observations in paediatrics
- Worked with radiology to test and deploy Synapse 5 which will be key for the boundary merger to provide the common view of images across Wales
- Rationalised the ICT pathway for the Glaucoma service
- Developed the Redcap solution as a tool for audit/questionnaires both internal and external
- Developed the Medical Examiners survey in Redcap for all Wales
- Due to WG reporting requirements further enhancements have been made on the MITS maternity solution to be able to provide the necessary data and reports
- Worked with the lean team to improve ways of working

2.3 Software Development

MITS

Successfully developed and implemented the new Antenatal Module of the MITS Maternity System. Further enhancements to the Summary of Labour module have also been introduced.

Acute Medicine, Bed Management and Handover System

Successfully secured capital funding to roll out the bed management software across the Prince Charles and Royal Glamorgan sites. This will allow demand management in real time and help overall bed management. The implementation of this system has been very successful with interest from all areas of Cwm Taf. It is anticipated that the rollout into the acute hospitals will be completed before the end of the 18/19 period.

Toms Theatre System

Upgraded the TOMS Theatre System to version 15.2. This was the final piece of work required to bring Cwm Taf and ABMU Health Boards onto the same version of software.

Portfolio Management Board

Created a new board to oversee the 50+ project underway in ICT. Created an initial documentation set for the execution of these projects. Rolled out Trello as a management tool to assist with project work.

2.4 Service Management

A journey has been created for Service Improvement bringing together the best of Six Sigma and Lean at Cwm Taf ICT Service desk which has been piloted and trailed. The objectives for the months of July and August 2018 was to improve customer service, customer satisfaction. The goal in this pilot was to improve on call resolution times and avoid the duplication of passing calls between multiple teams. As a result of the new way of working, ICT has formed unity between clinical and non-clinical ICT technical support staff creating a **"front line support service"** to support staff in accordance to the ICT staff skills matrix.

A process map was created (see [Process Map](#) also attached in Appendix E) and awareness workshops with engagement with staff was scheduled in to both hospitals prior to the pilots start date. Staff

were presented with the current process and the vision and expectation of the project (see - [Awareness session](#)).

The data measurements were taken on a daily basis over the course of the project. These were calls which were raised and closed the same working day and labelled as key drivers to measure performance. In terms of a clean-up exercise ICT monitored the existing service areas which were classed as 3rd line groups and monitored the volumes during the project. ICT are into the month of September going into a go live implementation of a working model that fits the business and organisation. There is a signed off documented for a live rotational plan which has been created in order for the front line service to further provide service. (See [Rotational Plan](#)).

In terms of Coordination senior members of staff have supported the pilot and have been rotated into front line coordination. Staff from Band 8 to Band 6 have been rotated on a daily basis over the past 5 weeks. The duties were to manage and monitor the operational technical support call queues, a resource to manage first fix support and another to manage second line support. These are important to have in the process for service improvement as these resources here would direct calls, monitor calls, reduce cherry picking, by staff and ensuring resources are adequately seated when we have high numbers of calls.

As a result of the pilot the follow has been achieved:

- Change in organisational model
- Change in operational model (see below)
- Increase in performance of the service team

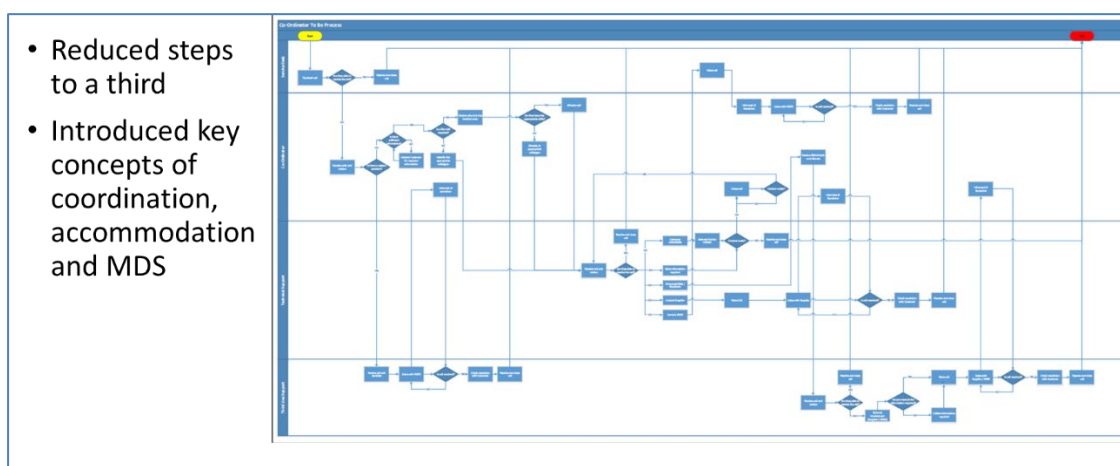


Figure 6: Improved Service Operational Model

ICT have also introduced monthly service reporting against standard KPIs this year.

3. Drivers for Change

The Diagnostic review of ICT capacity and resources - undertaken by Auditor General Reports.

Overall spend on ICT is below average for Wales and remains below the recommended level of spend.

The total level of spend on ICT is lower than the recommended 2% of total revenue expenditure and just below the all-Wales average of 0.7%

Since 2010-2011 total expenditure on ICT has seen a decrease.

The impact of underinvestment is highlighted below.

3.1 Capital allocation

ICT has for several years been allocated less capital than requested with the net effect of delaying any modernisation of the service. The infrastructure assessment described in the Vision section shows the cumulative impact of these funding decisions. The infrastructure analysis now underway will provide a comprehensive plan for addressing this point as well as indicative costing.

The Diagnostic review of ICT capacity and resources, undertaken by Auditor General, reports.

- The Health board has the lowest number of devices although accessing PC's is generally less problematic than in many other health boards.
- The number of WTE doctor per device is the lowest in Wales at 3.4
- The number of WTE nurse per device is the lowest in Wales at 1.6

An external digital maturity assessment of Cwm Taf also highlighted the impact of underinvestment, see the Context section.

3.2 Organisation Maturity

As well as infrastructure, the ICT organisation has been underinvested with the following impacts:

- Key risks are not addressed, e.g. cyber security, teleconferencing, etc.
- Key skills are not developed, e.g. technical and service management

3.3 Bridgend Boundary Change

From April 1 2019 the Bridgend area will join Cwm Taf with an overall increase in population approaching 50%. This figure will drive corresponding increases in demand on ICT service, specifically, the Princess of Wales hospital and associated services will be added to the ICT portfolio.

3.4 Accommodation

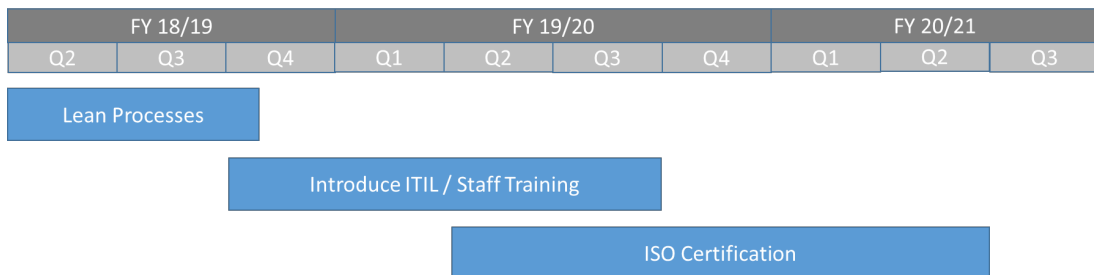
ICT is spread between two sites and the accommodation in Royal Glamorgan is seen as temporary. With the addition of Princess of Wales the overall accommodation need will increase by up to 46%. There is currently no corporate plan to address the accommodation issue.

4. Quality Improvement

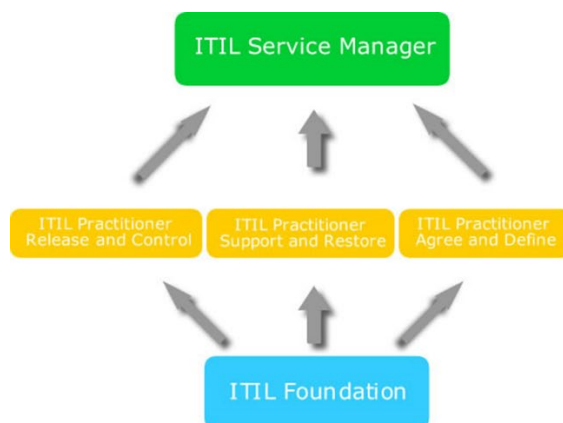
4.1 Service Improvement

Please see section 2.4 for a description of the Lean service improvement activity for 18/19.

Our further service quality improvement plans build on this starting point as shown in the figure:



The next stage of the journey will require the development of our organisational capability to support reaching International Standards Organisation certification of our service capability as shown in the figure. The training regime required conforms to the ITIL standard. The ITIL abbreviation stands for IT Infrastructure Library. ITIL is a set of detailed practices for IT service management (ITSM) that focuses on aligning IT services with the needs of business. The Office of Government Commerce (part of HM Treasury) maintains the library and releases all updates related to ITIL. ITIL describes processes, procedures, tasks, and checklists which are not organization-specific, but can be applied by an organization for establishing integration with the organization's strategy, delivering value, and maintaining a minimum level of competency. It allows the organization to establish a baseline from which it can plan, implement, and measure.



- Our goal is an ICT team that is certified to a level commensurate with their responsibility and job requirements
- Cwm Taf will need to invest in the training programme
- It will take up to one year for everyone to achieve the certification goals

4.2 Delivery Improvement

In FY 18/19 ICT created a new Portfolio Management Board to oversee the delivery of projects. The standard for project and programme management is Prince 2 and Managing Successful Programmes (MSP), however, Cwm Taf has not developed an organic capability to conform to these standards though a start has been made. Further work is required in FY 19/20 to achieve the following:

- A standard set of documentation
- Regular reporting tools
- Quality checks on the execution of projects
- Regular gateway reviews

Note that governance (quality) is further discussed and illustrated in sections 10 and 11. Also, section 7 discusses discretionary investments in staffing, including a new post of quality assurance manager.

Governance processes for patient safety in respect of developing and implementing new ICT systems: this is undertaken in conjunction with the patient safety team, then reverts to the specific department utilising the system.

5. Service Change Plan

Our Digital Health Vision is:

The Health Board will aim to become a digital exemplar within NHS Wales, as an innovator and early adopter of digital technologies and approaches, to enhance care quality, better engage with patients and deliver sustainable services

This vision is supported by a plan to actively participate in and deploy national solutions. The following priorities are identified for 2019/20.

1. Bridgend Boundary Change
2. Maximising use of existing systems
3. Deployment of Digital Medical Records
4. Deployment of the Welsh Emergency Department System
5. Deployment of the Shared Care Record

Bridgend Boundary Change

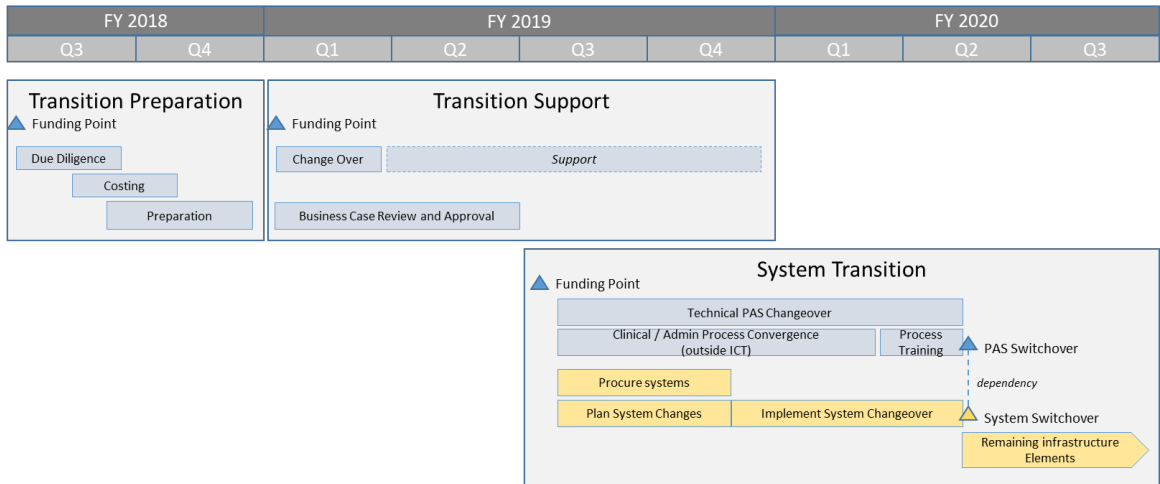
The boundary change has profound implications for ICT. Over the years, ABMUHB have built an enterprise ICT solution of which Bridgend is an integral part. This enterprise must be untangled and incorporated into the CTUHB enterprise.

The process is a key dependency for changes to patient pathways and the reconfiguration of services in the area. As noted by the Chief Clinical Information Officer, this is a patient safety risk as clinicians rely on having timely and accurate access to electronic information to make treatment decisions.

On April 1 2019 the aim will be to ensure that Princess of Wales and any of the other sites involved in the boundary change can continue business as usual. This will be achieved by leaving the existing systems largely in place and creating Service Level Agreements with ABMUHB for their continued support.

Over the course of 2019 these systems will be moved over to the Cwm Taf enterprise. The scale of this effort is large, there are over 30 services and nearly 100 ICT systems to be migrated.

The figure below shows the indicative timeline for the transition. Details and costs are subject to a business case.



Maximising Existing Assets

CTUHB ICT will seek to make the best use of existing national solutions, many of which are already deployed in the health board but which could be better utilised to improve care and efficiency. The following table indicates our objectives.

Table 2: Maximising Available Assets

National Solutions	Description	Maximising the Asset
My Health Online	Allows patients to access their health records	Increased capability from Q1, opportunities to interact electronically with patients with wider scope
PROMS and PREMS	Patient feedback on clinical services	CTUHB has much lower take up of the service than neighbouring health boards. Opportunity to improve care.
GP Test Requesting	Electronic requesting of tests from GPs	Remove paper requesting, improve time to returns results. Latest version in pilot in 1 GP surgery prior to rollout
WCRS	Storage of clinical documents in the national repository	More documents from an increasing number of clinical systems are available for sharing. Increases patient safety by making the document available nationally.
WAP	Electronic referrals	30% of received referrals are still paper. Improve efficiency, quality and timeliness.

WPRS	Electronic referrals and triage	Only service using WPPRS is Cardiology. Need to extend to remaining specialities but it requires work on WPRS/WPAS to accommodate sub specialities
WCP	Access to nationally held patient information	Opportunity to improve usage and knowledge of capability. Improves patient safety and clinical efficiency. Maximising the sunk assets
Hospital to Hospital Referrals	Electronic referrals between health boards	Remove paper referrals. CTUHB is pilot site for Wales. Cardiology is the specialist currently being tested
My Health Text	National solution for texting patients	Leverage national solution and discontinue local solution.
Electronic Requests and Results	Electronic requests and results for secondary care	Currently lead health board in Wales for TRRR with 87% of in patient requesting performed electronically
Electronic Outcome Forms	Electronic capture of OP clinic information	CTUHB wishes to be the pilot site for this capability, which can be rolled out across the heath board.

The analysis phase of this effort has just begun so outcomes and timelines are not yet available.

Deployment of Digital Medical Records

Today the health board primarily relies on paper patient records. These will be replaced with electronic versions of the same records.

This effort is a collaboration between Acute Medicine and ICT. It has been agreed that the details for this project will be included in the Acute Medicine IMTP.

The outcomes and other details for this effort are available in the Medical Records Digitisation BCJ approved December 2018.

Deployment of the Welsh Emergency Department System

The A&E department is part of a whole system approach to emergency care. It requires specific design features, focused on flow, but needs to operate as part of an integrated health system.

In 2014 the NHS Wales Informatics Service (NWIS) was asked to manage procurement on behalf of NHS Wales Health Boards and Health Boards to establish an appropriate

contractual arrangement to enable the phased implementation of an Emergency Department Clinical Information and Management System (EDCIMS) across NHS Wales. This would be a common solution to enable health boards to procure and implement a new suite of applications, hardware and services to support the ongoing delivery of Emergency Services.

The new Emergency Department systems is expected to deliver the following high level benefits.

Table 3: Welsh ED System High level Benefits

Feature
Real-Time Live patient tracking, triage monitoring and triage management supporting clinical decision making. Live patient status and treatment pathway tracking enables improved communication with patients and relatives.
Integrated with other hospital systems (e.g. Welsh Clinical Portal, Welsh Patient Administration System), for better communication across care settings.
Improved clinical information flows , reduced duplicated collection of information thus releasing clinical time for patient care
Ability to view the patient record across all EDs in Wales using the same system. This will particularly support the identification and management of vulnerable patients and enable clinicians to speedily note relevant clinical history. Security and access model will be required to for the new system moving forward.
Transfer appropriate information , particularly discharge letters, electronically to GP systems, i.e. via the WCCG using current interfacing links.
Clinical audit reporting and outcome measurement
Eradicate the requirement for hybrid paper/electronic data capture e.g. avoids the need to scan paper records into electronic systems, allowing the reallocation of resources.
Save time looking for information by having everything in one system. The key for this functionality is integration with other systems.
Quicker access to information for operational teams and the Information team
Patient location tracking supports the improvement in patient flow across the hospital, again integration is key as this will build on functionality already in place.
Effective audit for triage and patient pathway management. Robust evidence to facilitate service improvements.
Reduced clinical time required on administrative tasks enabling improved clinical presence at departmental and patient level.

The outcomes and other details for this effort are available in the EDCIMS BCJ approved December 2018.

Deployment of the Shared Care Record

CTUHB is engaged a transformation of out of hospital care as explained in *STAY WELL IN YOUR COMMUNITY - Seamless services, closer to home, transforming outcomes (July 2018)*.



Figure 7: Stay Well in Your Community

The Shared Care Record is the underpinning digital initiative which supports the transformation programme. It will seek to make the disparate systems used by care workers more seamless and improve the flow of information.

There are many people, services and organisations that have an interest in the sharing of patient data. The figure below, shows a representation of some of them. This will be elaborated upon as work progresses.



Figure 8: Services Diagram

In order to ensure we get the right information to the right people at the right time and in the right place, there are several key elements that need to be in place and work together to form the whole solution.

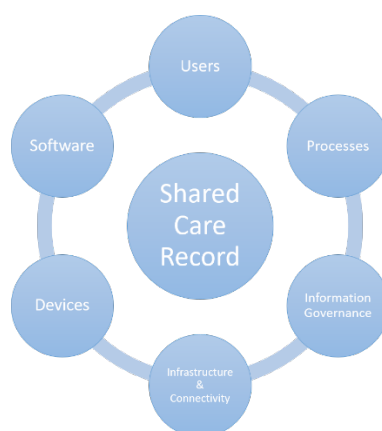


Figure 9: Shared Care Record

The solution is not just the software, it is all these elements brought together to enable consistent, seamless access to patient data for all parties.

Users – users need to be confident, supported and able to use the solution effectively.

Processes – processes need to be effective to ensure ease of use of the solution, remove unnecessary data entry and duplication.

Information Governance – needs to be appropriate and proportionate to ensure patients' data is protected whilst allowing access to those who need it to provide care (either directly or indirectly) to patients.

Software – needs to be integrated wherever possible to allow data to be entered once and used many times, easy to use and support the delivery of care, not hinder it. To be of the most benefit software should be able to be used in offline mode.

Infrastructure and connectivity – the foundation to enable the solution to work, it needs to be fit for purpose to support the requirements of the service and its patients.

Devices – the correct devices to allow access to the software whether connected or offline.

This project is a component of the Healthier Wales Transformation proposal which CTUHB has submitted to Welsh Government. The project is an enabler of the outcomes in that proposal.

6. Summary of Demand and Capacity Plans

Not applicable to ICT.

7. Workforce

At the time of writing, the workforce plan in section 9 illustrates the 2018/19 staffing level of 60 posts. This comprises 53 staff in post, 2 to start in April 2019, and the rest of the vacancies out to advert. The workforce strategy is noted in this section, and is illustrated in detail in the attachment at Appendix F.

The plan also demonstrates a modest increase in workforce, proposing 12 WTE additional staff, in order to progress the workforce strategy:-

- Band 8a Head of Voice and Data Management
- Band 6 Cyber security support
- Band 6 Cyber security support – data comms
- Band 6 Data Comms support
- Band 6 MFD/MPS (printing services) and Lync server support (combined post)
- Band 7 Service Management Quality Assurance support
- Band 2 Administration support
- Band 6 WCP systems support
- Band 5 x 2 WFIS server support
- Band 5 ibabs and corporate services systems administrator
- Band 2 PAT tester

Welsh Government funding has been achieved for 2 temporary band 5 posts as business change leads to accelerate WCP module roll out in particular, the post are for 2018/2019.

Appendix E details basic figures for increase in estate.

This workforce plan must change upon delivery of the full ICT strategy. The current conservative requirements, necessary to achieve the status quo, are likely to be superseded by an expanded workforce, reflecting both the expansion of the estate – 10% in the previous two years - and the specialist areas and systems that will be developed over the coming years. The necessary increase in staff to deliver and maintain any future projects will be clearly identified in the business case where funding is identified to support any cost pressures.

There will also be an undertaking to see how we can work smarter with the existing staff looking at how we can use technology to allow some tasks e.g. password resets to be undertaken by the users free up ICT staff to work more effectively.

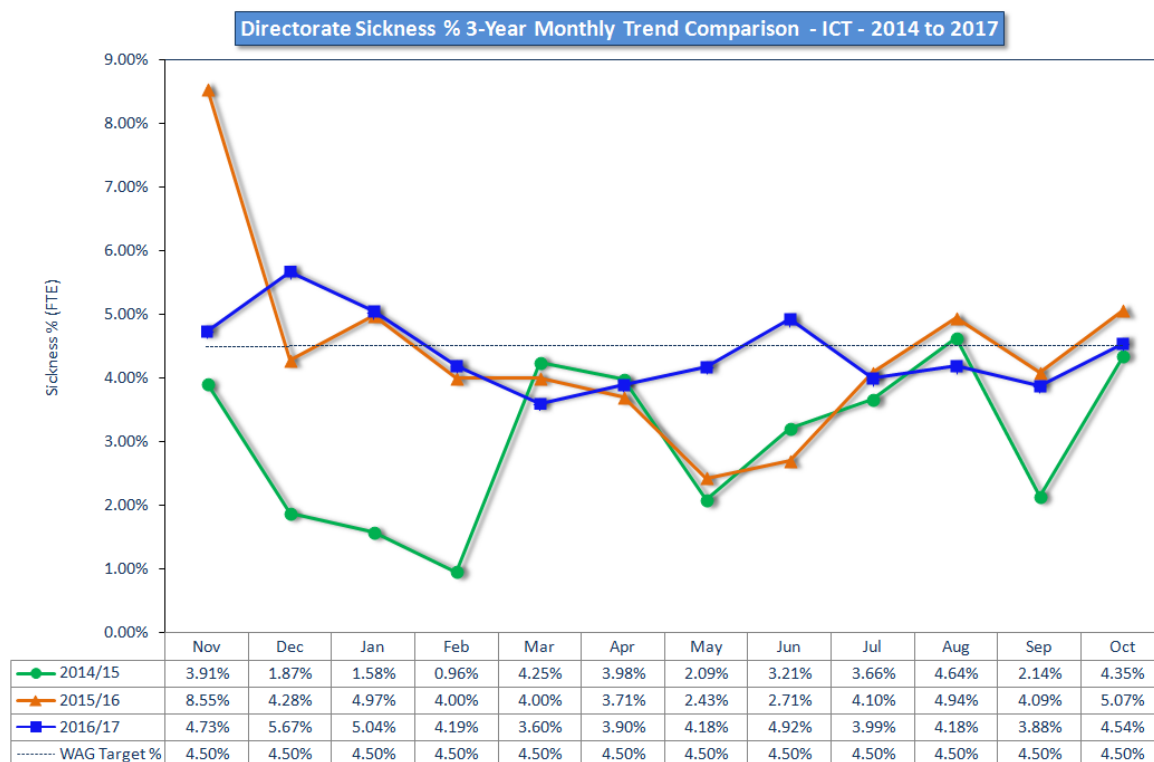
To ensure the department has the correct resources as expansion occurs, the option of engaging with apprentice programs is being

utilised as there has been considerable success in this area previously.

The appropriate ICT staffing level for the organisation must reflect the level suggested by the recent WAO reports, and evidenced by the benchmarking process.

The Diagnostic review of ICT Capacity and resources undertaken by the Auditor General reported that in 2013-2014 ICT had 54.2 WTE. The number of ICT staff per 1,000 total health board staff is 7.7. This is below the all Wales average of 8.8 WTE per 1,000 total health board staff. This situation has not improved as current figures shows substantive ICT levels at 52.2 WTE.

As a department the sickness targets are with expected Health Board and issues are worked through with the assistance of Human Resources.



The department works on increasing statutory and mandatory training via PDR. The PDRs are being reviewed and are expected to hit target within the next 3 months.

Appendix A illustrates the current staffing position.

Appendix B Service Catalogue listing systems supported and SLA definition

8. Financial Plan

Funding

It is important that ICT funding keeps pace with technological developments. To achieve this requires a balance across the investment in technology, and the staffing required to operate and support the technology. Funding will need to be:-

- Capital: investment in new hardware and systems;
- Revenue: ongoing running costs for new and existing systems, and the current and future staffing levels required to safely operate those systems.

Value for money and quality

It is important that mechanisms and processes are in place as part of the strategy for the ICT department to demonstrate that its activities are providing value for money solutions and leading to an improvement in quality services.

Key areas for consideration are:

- Quantifying improvements in patient care.
- Quantifying departmental savings against the cost to ICT in terms of resources: staffing, equipment, software/systems and ongoing maintenance.
- Capturing whole service costs to ensure that any additional costs or savings are identified over the whole life period.
- ICT systems allow for the capture of data that allows other departments to demonstrate value for money. Provision of reports and statistics from these systems requires ICT staff resourcing and expertise.
- Benefits realisation.
- Getting best value for money from the ICT workforce, which means developing a skilled workforce and achieving efficiency from that workforce.

9. Enablers

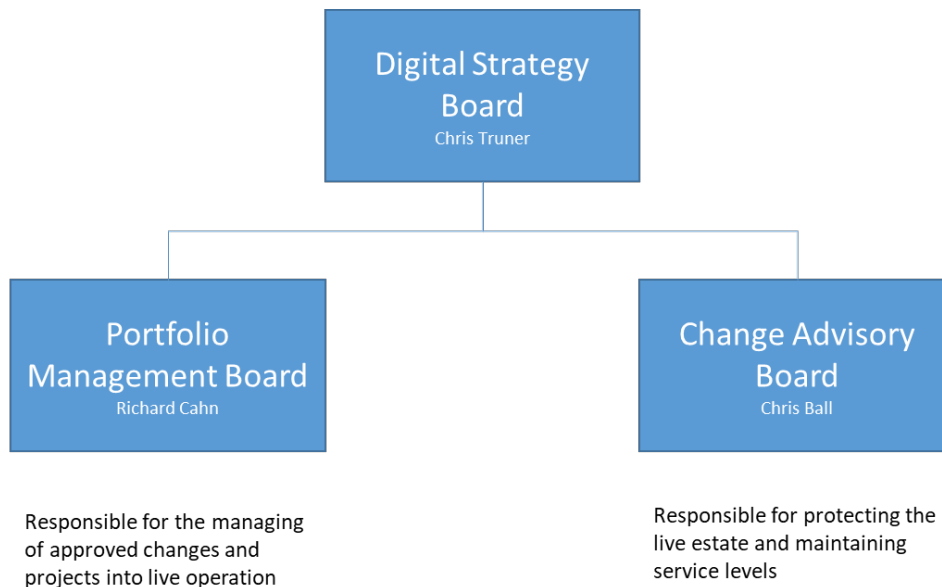
ICT is seen as an enabler for the service directorates and as such does not itself look for internal enablers.

However, as highlighted in the context section, ICT is dependent upon national solutions to deliver key service improvements. Please see that section for an explanation.

10. Governance and Risk Management

10.1 Local

ICT Governance has been improved in the last fiscal year with the introduction of the Digital Strategy Steering Group, Portfolio Management Board and revitalisation of the Change Advisory Board.



In addition, an Architecture Review Board ARB has been added to review the ICT roadmap though more effort is required to regularise this board.

From FY 19/20 a monthly local Service Management Board will be added to review departmental performance details.

Risk management takes place at Corporate Business Meetings each quarter. ICT have requested that more regular Corporate Business Meetings are held as the current quarterly meetings are not sufficient.

10.2 National

ICT also participate in National structures as listed below:

National Informatics Management Board

Chaired by the Director General of NHS Wales, this board oversees informatics strategy for Wales. National risk management takes place here.

Integrated Planning and Development

Chaired by the CIO of Wales, this board oversees deployment of new information systems. The administration of national risks takes place here.

Service Management Board (SMB)

All National services have SMB that provide continual monitoring and review of the levels of ICT service specified in the service level agreement. Service-level management is responsible for ensuring that the agreed IT services are delivered when and where they are supposed to be.

Infrastructure Management Board

Chaired on a rotating basis by the Health Boards, this board oversees the national infrastructure and generates national risks. The IMB has a series of sub-groups responsible for service managing various technology areas.

Major Incident review

Local system incidents which are not on National Architecture is the next phase of ITIL -Information Technology Infrastructure Library implementation.

Each incident that takes place on the National Architecture undergoes a major incident review and report. This is part of the learning exercise to reduce the likelihood of re-occurrence. Attended by both local and national teams.

11. Appendices

11.1 Appendix A: ICT Structure



ICT Structure - 28
Feb 2019.pdf

Organisation Chart



ICT Directorate
Revised Organisation

Alterntaive view of org chart

11.2 Appendix B: Service Catalogue

TBS

11.3 Appendix C: the Wellbeing of Future Generations



Wellbeing and future
Generations 17-18.doc

11.4 Appendix D: CTUHB NWIS SLA



180413 SLA Letter
Cwm Taf UHB Signed

11.5 Appendix E: Service Management files



Coordinator Pilot
Process map.pdf



Awareness
Presentation.pptx

11.6 Appendix F: Copy of Workforce "Appendix L"



Appendix L -
Workforce Checklist 2

Job No	Scheme	Current Year Planned Spend	Carry Forward 20/21	Carry Forward Future Years
		£	£	£
	<u>Approved Schemes as at 30th July 2019</u>			
	<u>I.T</u>			
T071	Capitalised IT Staff	225,000.00		
T034	Rolling Replacement Programme	350,000.00		
T070	IT Equipment New Staff	70,000.00		
T115	EDCIMS/WEDS	1,149,347.99		
T113	Pharmacy Software (CTU + Bridgend)	82,353.12		
T118	ICT Equipment	33,008.91		
T114	Digitisation of Medical Records	1,445,000.00	400,085.91	
T122	CAMHS - WiFi Carnegie / Tonteg	15,000.00		
T123	PODIATRY - Tool Path Generator (Fitfoot360)	22,000.00		
T124	TY LYDIARD - Teleconferencing	7,000.00		
T125	MEDSMAN - Anticoag Equipment/Reconfig	5,000.00		
	Total - IT	3,403,710.02	400,085.91	0.00