



AGENDA ITEM
3.3

DIGITAL & DATA COMMITTEE

DIGITAL RISKS

Date of meeting	28 September 2022
FOI Status	Open
If closed please indicate reason	Not Applicable
Prepared by	Andrew Nelson, Chief Information Officer
Presented by	Andrew Nelson, Chief Information Officer
Approving Executive Sponsor	Stuart Morris, Director of Digital
Report purpose	FOR REVIEW

Engagement (internal/external) undertaken to date (including receipt/consideration at Committee/group)		
Committee/Group/Individuals	Date	Outcome

ACRONYMS
IG – Information Governance
CTM – Cwm Taf Morgannwg
UHB – University Health Board

1. SITUATION/BACKGROUND

1.1 Managing risk and opportunity is a key strategic activity for the organisation’s success. As we continue to develop our enterprise risk management approach, it is essential that we connect the

management of digital related risks with our wider clinical and organisational objectives.

1.2 The risk register for Informatics is provided in appendix A, with updates provided in red font. The summer has been an eventful period with a number of the identified risks being realized as incidents with quite considerable impact on the organisation's objectives, not least the detriment of care for our patients and the welfare of our staff. Most notable of these are:

- the ransomware attack on OneAdvantage which has led to a complete loss of our clinical record, administration and patient management system for primary care out of hours services

- the severing of two key fibre cables which ultimately took down the computer network at PCH, closing services such as radiology and endoscopy for a period of over 6 hours

- the continuing poor standards of quality in keeping the clinical record structured and up to date. Audits continue to identify over 50% of records are being misfiled – many of which contain records for the wrong individual and the persistence of significant delays in clinical correspondence (such as discharge advice letters) being available. This has knock on effects onto digitization programmes being delayed as they have to amend the record, which in turn manifests itself as digital solutions being seen to hamper and delay the availability of the clinical record (the present delay for scanned records being available is over 40 days). Reducing clinician's confidence in the UHB's ability to operate digitally and thus increasing the likelihood that we will be able to realise improvements in the UHB's quality of care and cost base in the required timeframes.

2. SPECIFIC MATTERS FOR CONSIDERATION BY THIS MEETING (ASSESSMENT)

2.1 All of the risks identified remain a significant concern for the UHB and as detailed above the impacts of these continuing are significant at both the strategic and operational level.

2.2 Whilst incidents are most regrettable, some positive mitigations have been made over the past month:

- The information required to ensure that the new Datix system is functional and is 'digitally enabled' to provide the benefits laid out in the business case has been provided
- The Welsh Government have funded NHS Wales over £7m for a 3 year period to improve and integrate the Patient Administration

System, a critical part of enabling the automated integration of digital systems and ways of working across CTM (Bridgend and CT aggregation)

- Work to greatly enable and enhance the way new digital solutions can be adopted has commenced, with an integrated programme of work funded from the e-whiteboard, e-transfer of care and the National Data Resource programmes.

2.3 There is however increasing concern around the capacity within the UHB of people with digital skills. This encompasses all disciplines, from those who need to have basic digital knowledge and awareness to specialist areas such as cyber, IG, integration and analytics. It is highly likely that from the middle of October the UHB will have no qualified IG practitioners.

3. IMPACT ASSESSMENT

Quality/Safety/Patient Experience implications	No
Related Health and Care standard(s)	Governance, Leadership and Accountability If more than one Healthcare Standard applies please list below:
Equality Impact Assessment (EIA) completed - Please note EIAs are required for <u>all</u> new, changed or withdrawn policies and services.	No (Include further detail below) If no, please provide reasons why an EIA was not considered to be required in the box below.
Legal implications / impact	Not applicable
Resource (Capital/Revenue £/Workforce) implications / Impact	There are no specific legal implications related to the activity outlined in this report.
Link to Strategic Goals	There is no direct impact on resources as a result of the activity outlined in this report.
	Improving Care



4. RECOMMENDATION

The Committee are asked to consider whether the risks related are comprehensive and the actions taken to mitigate them are sufficient relative to the operating environment and the competing demands on resources to mitigate other corporate risks and achieve organisational objectives.



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Risk Title	Risk Description	Controls in place	Action Plan	Assuring Committees	Rating (current)	Heat Map Link (Consequence X Likelihood)	Rating (Target)	Trend	Opened	Last Reviewed	Next Review Date
Ransomware Attack resulting in loss of critical services and possible extortion	<p>IF: The Health Board suffers a major ransomware attack.</p> <p>Then: there could be potential data loss and subsequent loss of critical services.</p> <p>Resulting in: Catastrophic service loss to all clinical and business services adversely impacting on population health management, patient care, business continuity, health and wellbeing of staff, organisational relationships, substantial financial risk and the UHB's other routine and improvement work - culminating in a culture of mistrust of the Health Board and all things digital leading to the likelihood of the opportunities that present from digital transformation being less likely to be achieved.</p>	<p>Key Controls:</p> <ol style="list-style-type: none"> 1. Data protection and Information Security controls and policies 2. Cyber security risk register and associated improvement plan 3. NHS Wales infrastructure and networked approach to safe, secure and resilient informatics management 4. Organisational culture and workforce skills and development plan <p>Physical Estate</p> <ul style="list-style-type: none"> - CCTV and access controls on important buildings / rooms <p>Medical Devices & "Internet Of Things"</p> <ul style="list-style-type: none"> - Adoption of National policies and legislation re Medical Devices - Application of Network security measures and partitioning <p>Gaps in Controls:</p> <ol style="list-style-type: none"> 1. Significant levels of digital helplessness and limited cyber awareness amongst staff 2. Poor adherence to policies 3. Architecture and system configuration not sufficiently designed for security, resilience and business continuity 4. Insufficient controls and management of the digital supply chain and lack of transparency and monitoring of our suppliers (NHS and non NHS) 5. NHS Wales digital network and estate not configured for benefit of the UHB 6. No assurance processes in place for UHB to determine & manage vulnerabilities presented by third party suppliers and other NHS Wales organisations 7. Insufficient skills and capacity within the UHB (not just within digital) associated with imbalance in resource allocation between creation and protection of value. 8. Attack detection and discovery could be improved 9. Digital contracts do not provide sufficient levels of indemnity 10. Protection of networked unmanaged end points (e.g. medical devices) could be improved. 11. Insufficient capital funding available 	<p>Cyber and Data Protection Improvement Plans being taken forward. - Timeframe: Quarterly updates</p> <p>NIST Framework adopted by the UHB to have continuous improvement approach to applying the NIS-D Cyber Assessment Framework, understand and mitigating the identified risks</p> <p>Infrastructural architectural changes being put in place. Timeframe - Quarterly updates</p> <p>Medical Engineering and the ICT team to develop a programme for assessing risks presented by medical devices and possible mitigations. Timeframe - awaiting recruitment</p> <p>Update August 2022 - Risk realised as an Issue in August 2022 as the GP Out of hours software provider was subject to Ransomware. C&V only HB to avoid impact due to DPA and On-prem hosting - lessons being learnt</p>	Digital & Data Committee	20	C5 x L4	15 (C5xL3)	↔	26/05/2021	25/08/2022	25/09/2022
Failure to deliver a robust and sustainable Information Governance Function	<p>IF: The Health Board is not able to legally share the business and patient sensitive information for which it is a data controller and which it is required to share for the delivery of care</p> <p>Then: The Health Board will not be trusted by our patients, population, staff and 'care providing partners' and thus will not have the information required to provide safe, high quality and effective care and to make informed evidenced based decisions.</p> <p>Resulting in: Poor outcomes for our population, a loss of reputation for our organisation, substantial delays in improving services, inability to collaborate regionally or delivery integrated care services.</p>	<p>Key Controls:</p> <ul style="list-style-type: none"> - Adoption and implementation of All Wales IG and Data protection policies, - Continual improvement and progress made in mitigating non delivery of legislation (CLDC, DPA etc) - Mandatory training in Information Governance with auditing functionality (such as NIIAS) built in to monitor compliance, - Accessible but robust data protection process for new and existing data sharing arrangements (DPIA procedures) - Joint data controllership arrangements with DHCW + WASPI - Professional (clinical) training and approach to maintain an accurate and timely medical record <p>Gaps in Controls:</p> <ol style="list-style-type: none"> 1. Shortfall in trained IG professionals 2. Inability to legally stipulated timescales for Freedom of Information and Subject Access Requests 	<p>Cyber and Data Protection Improvement Plans being taken forward. - Timeframe: Quarterly updates</p> <p>Response to ICO audit recommendations being managed on a prioritised and smart basis (aligned to other improvement areas)</p> <p>Benchmarking with other organisations in Wales undertaken. (SB have 9wte, CTM 2.5wte funded, 1.5 wte now --> 0.5wte by end of Sept.)</p> <p>Procedures and requirement to initiate all programmes being enhanced to meet legal requirement of privacy by design</p> <p>Further attempt to recruit to 2 vacated positions in progress</p> <p>Re-allocation of coding staff to IG function on very short term basis to provide some continuity and cover</p>	Digital & Data Committee	15	C3xL5	8 C4xL2	↔	18.06.2021	25/08/2022	25/09/2022



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Integrated IT Systems	<p>IF: The Health board does not have a unified electronic health and care record and systems which are integrated across the organisation and with our primary and social care providers</p> <p>Then: The Health board will be unable to deliver safe, high quality, clinically and cost effective care to patients</p> <p>Resulting In: Compromised safety of patients needing treatment that are reliant on clinical test results and information being available to clinicians to plan and deliver the treatment plan and the requirement for sub-optimal manual processes</p>	<p>Key Controls</p> <ol style="list-style-type: none"> 1. SBUHB Service Level Agreement 2. Bridgend disaggregation and the one-CTM aggregation plan 3. NHS Wales Control Agreement and data sharing agreements 4. Numerous national service management boards and Technical oversight groups providing strategic, tactical and operation governance. 5. National ePR programme and systems <p>Gaps in Control</p> <p>The full business case for the Bridgend / old-CT integration remains unfunded. There are currently a number of CTM systems that are not compatible with Bridgend systems. SBUHB have no process in place to incorporate the needs of Bridgend users in their developments. There is insufficient discretionary capital funding available to support delivery of the aggregation plan</p> <p>There is no data item integration with GP systems</p> <p>Numerous delays in NHS Wales progressing open architectural approach</p> <p>Strategic approach to becoming an anchor organisation to encourage SMEs not developed, resulting in challenges in proceeding with small agile developments</p>	<p>RE Bridgend/CT aggregation: Programme as set out in IMTP progressing to plan. Discretionary capital programme has made provision to support priority areas of the plan. Business case for all Wales PAS development which incorporates Bridgend / CT aggregation has been funded for the next 3 years (recd 24/8/22). All Wales programme for opening up the architecture starting to develop via National Data Resource however there are numerous challenges and delays faced in getting system and service changes and improvements being put in place.</p>	Digital & Data Committee	16	C4 x L4	8 (C4xL2)	↔	14.10.2020	25/08/2022	25/09/2022
Lack of a resilient and performant Digital Network Infrastructure and Assets	<p>IF: The Health Board suffers regular local and/or national network issues and/or outages to critical clinical and business systems or performance issues in accessing and using systems</p> <p>Then: there could be a detriment to patient care, inefficiencies in care provision and loss in confidence by Health Board staff in the technology provided to them leading to them using alternative software and bespoke systems (including paper based systems) to carry out their duties which are not integrated.</p> <p>Resulting in: delays in clinical decisions and consequently treatment which may affect clinical outcomes, reduced levels of productivity and thus poorer access to services, staff appetite to work digitally and in accordance with the digital standards required to realise the full strategic benefits of an integrated record and repository not being realised. Other consequences include: Loss of information integrity and accessibility as multiple copies of clinical records. Threat of malware being introduced on to the network from unmanaged data, systems and software. Possible breaches to the GDPR, safeguarding and information governance risks. Mistrust by staff of the ICT systems and services they are using</p>	<p>Key Controls</p> <ol style="list-style-type: none"> 1. A structure of National local and service management and change boards are in place and operational 2. Recommendations and advice from National All Wales Infrastructure Programme and 2 Local Infrastructure reviews developed into architectural programme 3. Service Management and Asset Management Improvement Programme established 4. Risk Audit Governance & Cyber Security Board which meets monthly to discuss and take action on service delivery incidents <p>Gaps in Control</p> <p>Insufficient Capital to meet many of the recommendations in the infrastructure plan</p> <p>Cloud policy is undeliverable, given the scarcity of revenue, skills and knowledge</p> <p>Wifi coverage not perfect</p> <p>Discretionary capital programme limited to £300k for rolling replacement in 2022/23 resulting in HB continuing to operate with large number of computers aged more than 10 years.</p> <p>Insufficient people within the infrastructure team to ensure that all interdependencies are prepared prior to changes (often pushed nationally) are made.</p> <p>Deficiencies in our disaster recovery and business continuity architecture</p>	<p>Log of major incidents discussed at weekly SMT with process for learning and improvement established. SLA discussions with DHCW making tentative improvement on disclosure and assurance. Operationally UHB suffered significant outage at PCH when the main fibres between the 2 physical LAN switches, that pair together were severed. In future the impact of such an incident will be mitigated by the 15th September when the new data centre at PCH becomes operational and there is full physical separation of the connection between the site and the wider area network (PSBA). Diverse resilient routes for Keir Hardie, Williamstown, POW, Ty Elai, Dewi Sant, YGT, YCC & Gwan Elai (Units 2,3 & 4) to the PSBA (WAN) are being installed. BT are completing the lower level design which will provide the configuration to put in 3 GB connectors for POW. A miccomp to establish diverse routes for the LAN at POW has commenced and we anticipate the work will be completed by December 2022. A firmware upgrade of the Mitel telephony system has been completed with WSM (which enables upgrading of wifi phones) in place for 70% of phones.</p>	Digital & Data Committee	15	C3 x L5	9 (C3xL3)	↔	26/05/2021	25/08/2022	25/09/2022



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Access to a complete, integrated, and coded medical record.	<p>IF: The Health Board is not able to record information accurately and reliably, with complete and up to date information</p> <p>Then: the data informing the clinical, regional and organisational decisions we and our partners (including WG) make, will be inaccurate, out of date or incomplete</p> <p>Resulting in: Degradation in our delivery of the quadruple aim and strategic objectives and damage to our reputational standing with our population and partners. Further we will be prevented from driving forward our ambitions to become a digital organisation, an exemplar for R&D and Value etc.</p>	<p>Operational controls: Coding key performance indicators covering productivity, demand and backlog robustly monitored Digitised Patient Notes programme board monitors scanning times, adherence of contractor to terms and quality of staff in maintaining a record DHCW annual coding quality audit. Coding Improvement and transformation plan established incorporating additional trained coding capacity, coding at source, use of data captured in other systems and e-forms implemented. Natural language programming resource deployed and outputs of programme being validated. Tactical - EPR programme with deployment of snomed-CT ontology server, WCP & E-forms etc.</p> <p>Tactical controls: Digital element of the strategic programme - Culture to digitise the EPR, our communications, how we do business National Architecture Review - encompassing (NDR /CDR & Sharing arrangements) Coding transformation programme .</p> <p>Gaps in controls Scanning time of outpatient activity to digitise the record is at 39 days of maximum clinically safe time of 24-48 hours Quality of paper record and its filing is very poor with audits identifying over 50% of paper records are not maintained to acceptable standards Digital solutions not yet using snomed-CT/ structurally coded data Information and Technical Standards not being followed with national body favouring document rather than data exchange 15000 clinical Discharge Advice Letters yet to be completed and ongoing discrepancies between paper and electronic records Digital transcription programme unsupported</p>	<p>-Consideration being given to Cessation of creating scanned records for any more new patients enabling scanning capacity to be put towards address backlog of active patients who already have a record in the scanning system - Development of a UHB coding strategy for the development of the profession developed and being taken forward - NLP and data linkage being used to autocode targeted spells, improving levels of coding completion, based on Snomed-CT - Adoption of data level standards based architecture, - Coding transformation plan, - Opportunity for bi-directional real time integration between primary and secondary care available - NDR, CDR and integration programme</p>	Digital & Data Commitment	15	C3 x L5	9 (C3xL3)	↔	05.06.2021	25/08/2022	25/09/2022
Digital Healthcare Wales (DHCW) interdependencies	<p>IF: The Health Board can not integrate new applications into its digital architecture in a timely fashion, nor access the data we control</p> <p>Then: there will continue to be a detriment to patient care, inefficiencies in care provision and loss in confidence by Health Board staff in the technology provided to them leading to them using alternative software and bespoke systems (including paper based systems) to carry out their duties which are not integrated and major strategic priorities for the organisation (e.g. Bridgend aggregation and the deployment of the new Emergency Department system) not being delivered</p> <p>Resulting in: delays in clinical decisions and consequently treatment which may affect clinical outcomes, reduced levels of productivity and thus poorer access to services, staff appetite to work digitally and in accordance with the digital standards required to realise the full strategic benefits of an integrated record and repository not being realised. Other consequences include: 1. Loss of information integrity and accessibility as multiple copies of clinical records. 2. Failure and delay of digital system deployments (e.g. WEDS) 3. Possible breaches to the GDPR, safeguarding and information governance risks. 4. Mistrust by staff of the ICT systems and services they are using 5. Money being wasted</p>	<p>A Myrdin strategic programme group has been established, chaired by the CEO of DHCW to map out how the constraints can be overcome</p> <p>SLAs are in place between DHCW and NHS Wales organisations, however their utility has been exposed by demand pushing the waiting times for developments to start (not complete) to over 12 months</p> <p>Gaps in controls: WG have agreed some funding for the PAS element, however the DHCW IMTP continues to be a top down decision process rather than one being based on HB (user / customer) needs - driven in part by demand overwhelming their capacity (much of which is either Covid born or results from the significant overrun in establishing a minimum viable product to replace GanISC) and numerous critical constraints not continuing to be observed in the system whilst the architecture remains closed. HB carrying vacancies in critical areas with no capacity to cover the work from within. As a consequence programme to digitise the Emergency Department processes and records has been suspended. Limited progress on opening up the architecture.</p>	<p>National Data Resource Programme has accelerated plan to open up the architecture, with API management procured for all of Wales. National Funding received from WG for PAS integration work to create a second team supporting data migration. CTMUHB appointment process has commenced. WG funding for £7m awarded to support PAS integration 24/8/22</p>	Digital & Data Commitment	15	C3xL5	9 C3xL3	↔	07.02.2022	25/08/2022	25/09/2022
Use of Welsh Community Care Information System (WCCIS) in Mental Health Services	<p>IF: Mental Health Services do not have a single integrated clinical information system that captures all patients details.</p> <p>Then: Clinical staff may make a decision based on limited patient information available that could cause harm.</p> <p>Resulting In: Compromised safety of patients, potential avoidable harm and compromised safety for staff in the workplace.</p>	<ol style="list-style-type: none"> Process in place for clinical teams to access information via local authority and health board teams. Clinical teams will only use historical information as part of their current risk assessment and if this is not available they will judge the risk accordingly. Merthyr and Cynon and Bridgend CGS leads have confirmed that WCCIS is on their CSG risk register and their updates have been provided within this section, therefore aligned. WCCIS Programme Board establishment for CTM will be finalised by the 30th June 2021. Merthyr and Cynon CGS Lead will Chair this group. The Chair of this group will report to the Senior Responsible Officer. The Task and Finish Groups to be established and aligned to this Programme board Programme will be established by the 31st July 2021. Local Authority have recently developed reports for Mental Health which identifies practitioner caseloads, admissions and discharges and care plan for compliance. Deployment order in place for all existing WCCIS mental health staff users Community Drug and Alcohol Team in Bridgend have now moved over to WCCIS, early implementation learning continues to take place. WCCIS Regional Working Group now has a representative from the Health Board to maintain pace of delivery for WCCIS mental health rollout. CTM have set up a Project Board in partnership to prepare for implementation of WCCIS Project manager has been recruited. This role is leading on the development and implementation plan. Business Case identifying additional ICT resource to progress the disaggregation process developed and awaiting approval. Workforce capacity impacts on programme deliverables. 	<p>Provisional decision reached that CTM Local Authorities and UHB should not progress with WCCIS, as the functionality is not able to enable the benefits identified in the business case and the region's current requirements. Alternative options are now being pursued with mental health services.</p>	Quality & Safety Commitment	15	C5xL3	6	↔	07/11/2018	25/08/2022	25/09/2022



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