

# Business Intelligence Strategy

## Final Internal Audit Report

2024/25

Swansea Bay University Health Board



Substantial Assurance

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Fieldwork  
Executive Sign Off  
Audit Committee  
Executive Lead  
Audit Team

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May 2025  
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# Executive Summary

## Purpose

To evaluate the implementation and success of the Business Intelligence (BI) Strategy to ensure it is meeting its aims and enabling data driven decision making.

## Overview

We have concluded **substantial** assurance on this area. The health board has successfully delivered the current strategy, gaps in skills & resources have been identified that may constrain the department’s ability to scale and support future digital transformation but that these have been identified and are being addressed within the new strategic plan. We have identified no matters for reporting in our review. The following opportunities for enhancement have been identified that do not impact the overall opinion and are highlighted for management information:

- The BI Strategy acknowledged that a Data Quality Committee was introduced in 2022 but was not formally established. According to the recent internal review of Data Quality within the health board (SBU-2425-20), the newly formed Information Governance Learning and Operational Group (IGLOG) has made Data Quality a standing agenda item. Since data quality is critical to business intelligence, relying on accurate data to generate insights, inform decisions, and guide strategy, it is recommended to consider a representative from Digital Intelligence to the membership of IGLOG to help align data quality standards with digital strategies, enhance BI and digital platform performance, and ensure data governance and compliance across digital initiatives.
- Although formal review meetings occur for more significant products, we note they cannot take place post go-live for all BI products, it is recommended to consider the use of automated digital tools, such as a simple survey, to facilitate stakeholder feedback. This approach would help manage the review process more efficiently, ensuring timely input and ongoing alignment of BI products with stakeholder needs.
- While the survey response rate was low and may not fully reflect the level of awareness among all staff, some responses did indicate limited familiarity with the current BI strategy. This suggests there is value in strengthening communication increasing visibility, providing regular updates, and engaging more actively with staff to ensure widespread understanding and alignment with strategic priorities for the refreshed BI Strategic Plan 2025-2028.

## Scope & Assurance Summary

Objectives <small>The objectives and associated assurance ratings are not necessarily given equal weighting when formulating the overall audit opinion.</small>	Related Findings	Assurance
1 The BI Strategy is clear in its aims, is supported by a delivery roadmap and is being implemented appropriately.	-	<b>Substantial</b>
2 There are appropriate resources to support an intelligence function and delivery of the BI Strategy.	-	<b>Substantial</b>
3 An appropriate process is in place to identify key stakeholders and their requirements, and to translate these into deliverable intelligence products.	-	<b>Substantial</b>
4 Intelligence products are used to inform decision making and planning. They should be designed with the appropriate flexibility of input parameters to allow consumers to narrow or broaden the focus of their analysis.	-	<b>Substantial</b>

# Findings & Agreed Action Plan

**Objective 1:** The BI Strategy is clear in its aims, is supported by a delivery roadmap and is being implemented appropriately.

**Substantial**

## Overview / Summary of Observations

The strategy and roadmap were reviewed as part of a previous internal audit of this area (SBU-2223-020) and received substantial assurance. The BI Strategy, approved in January 2022, covers the period 2022 to 2025 and includes clear aims and goals, and is supported by a Digital Intelligence Implementation Plan, which includes a timeline and target dates for key activities.

All activities outlined in the previous BI Strategy and Implementation Plan have been completed. To verify this, we selected a sample of five key activities. Our review confirmed their implementation, and as such significant progress has been made over the past three years in advancing the health board's BI capability.

- Creation of Advanced Analytical Server (2022/23)
- Basic Data Cube Delivered (2022/23)
- Establish Data Literacy Programme (2022/23)
- Delivery of Enterprise Data Warehouse (EDW) (2023/24)
- Establish Advanced Business Intelligence Ecosystem (2024/25)

We observed a clear governance structure, with a clear route to the Board via the Digital Leadership Group (DLG) and the recently established Digital, Data, Research and Innovation Committee (DDRIC). Sitting beneath are the BI Collaborative, which meets quarterly to review and discuss progress against the implementation plan, and the Digital Intelligence (DI) Business Meeting, which has a standing agenda item to track annual plan delivery.

During our review we noted that the BI Strategy acknowledged that a Data Quality Committee was introduced in 2022 but was not formally established. According to the recent internal review of Data Quality within the health board (SBU-2425-20), the newly formed Information Governance Learning and Operational Group (IGLOG) has made Data Quality a standing agenda item. Since data quality is critical to business intelligence, relying on accurate data to generate insights, inform decisions, and guide strategy, it is recommended to consider a representative from Digital Intelligence to the membership of IGLOG to help align data quality standards with digital strategies, enhance BI and digital platform performance, and ensure data governance and compliance across digital initiatives.

We positively note that the BI Strategy is being refreshed as a DI Strategic Plan and realigned as one of the four pillars of the wider Digital Strategy. It aims to further enhance data literacy, leverage advanced analytics, foster collaboration, and modernise infrastructure to support the health board's digital intelligence initiatives. The initial draft has been presented to the BI Collaborative for comments and feedback and is due to be presented to the Management Board for approval in April / May 2025 before being presented to the DDRIC in June / July 2025.

**Overview / Summary of Observations**

The health board has successfully delivered the 2022–2025 BI Strategy, and is currently developing a refreshed strategic plan to build on this foundation. Four BI Partners have been embedded, playing a key role in delivering the BI Strategy. These partners work closely with Service Groups to co-produce insights and streamline the development of information products, while also supporting data literacy by helping to design and deliver training across the organisation.

As reported to the DLG in January 2025, ongoing resource constraints have impacted the timely delivery of dashboards, modelling, and ETL (Extract, Transform, Load) processes. While all four BI Partner posts have now been filled, two further vacancies remain within the BI team. The Data Warehouse team is currently fully staffed, though one member is due to leave shortly. There is an intention to recruit later this year once the current recruitment freeze has ended.

The current structure of the DI department provides a functional foundation to support core business intelligence and data reporting needs; however, for an organisation of approximately 14,000 staff, the team is relatively lean. While the presence of BI Business Partners, warehouse developers, and tiered analyst roles enables service engagement and operational reporting, the limited number of advanced analysts and absence of dedicated data science and data engineering roles may constrain the department's ability to scale and support future digital transformation. These gaps have been identified and addressed within the new strategic plan, which outlines the need to strengthen capacity in advanced analytics, cloud capabilities, and data infrastructure to meet growing organisational demands and enable more predictive, real-time insights. Progress is being made in this area as the DI department is actively addressing skill gaps through targeted upskilling initiatives. Power BI and machine learning training have been delivered, with further plans to build Python, BigQuery, and cloud-related skills in preparation for a future cloud migration of the data warehouse.

As part of the initial BI Strategy implementation, legacy BI tools were successfully migrated to Power BI by September 2024. However, the current infrastructure is not scalable to meet future demand. This issue is being addressed in the new strategic plan, which includes the development of a central data repository (digital data lake). This will enable the storage of large volumes of both structured and unstructured data, which is critical for future advanced analytics and AI-driven solutions. The existing warehouse setup, which uses the same server for raw data, staging, and transformations, has reached capacity and presents operational risks. Adequate mitigations are in place while long-term infrastructure improvements are being planned. Consequently, we identified no matters arising for this objective.

**Objective 3:** An appropriate process is in place to identify key stakeholders and their requirements, and to translate these into deliverable intelligence products.

**Substantial**

### **Overview / Summary of Observations**

Stakeholder needs are identified through structured engagement involving the BI Business Partners and service areas. This process ensures user requirements are clearly captured and aligned with strategic priorities. This engagement begins when a request form is submitted, which is then automatically assigned to the relevant BI Business Partner for follow-up discussions with the service. During these initial scoping meetings, the BI Business Partner gathers detailed information on user needs, aligns expectations, and applies a prioritisation matrix to assess the request. This matrix evaluates requests against four key criteria: Effort, Urgency, Impact, and Value; offering a more structured and objective method of prioritisation compared to approaches used in some other health boards, which may rely more on seniority or informal decision-making.

The process includes a mechanism for local prioritisation, where requests are further reviewed and discussed at Service Group meetings, to assess local relevance and determine final prioritisation. Business requirements are formally captured through a structured form, which feeds into a BI Projects SharePoint list and linked Power BI dashboards. These dashboards enable stakeholders to monitor the progress of their requests in real time and supports the Digital Intelligence department in managing the delivery of analytical products.

We also note that the new BI Collaborative acts as a forum for sharing and promoting BI capabilities across the organisation, helping to strengthen engagement with stakeholders. It brings together representatives from across the health board to discuss BI workplans and includes regular showcases where departments present their BI products. These sessions not only highlight innovative work but also encourage shared learning, promote consistency in data use, and support a culture of collaboration and continuous improvement.

A Knowledge Base is also available on the health board's Warehouse and BI SharePoint site, providing guidance and standard operating procedures (SOPs) for the development and use of Power BI products.

It was noted during our audit that review meetings, which are scheduled to occur three months post go-live as per the DI Project SOP, are not consistently held. This is primarily due to the high volume of dashboards being developed and the resource constraints currently in place. We acknowledge that there is a plan to recruit additional staff following the end of the recruitment freeze, which should help address this challenge. While regular reviews are conducted for the more significant products, this is not always the case for other products. As a result, some may not undergo timely evaluation to ensure they continue to meet stakeholder needs and deliver the intended outcomes. However, while reviews should take place as scheduled, it is important to note that BI Business Partners remain available to address any refinements or adjustments that arise after the go-live stage, ensuring ongoing support for stakeholders.

**Objective 4:** Intelligence products are used to inform decision making and planning. They should be designed with the appropriate flexibility of input parameters to allow consumers to narrow or broaden the focus of their analysis.

**Substantial**

### **Overview / Summary of Observations**

A key organisational risk, “Operational and strategic decisions are not data informed” (Risk 37), is currently recorded on the health board’s risk register with a score of 12 and significant work has been undertaken to mitigate this risk.

To explore how BI tools are being used to support planning and decision-making, a staff survey was conducted. Although the response rate was low (25 responses; 7.4%), the feedback provided valuable insights. The majority of respondents (76%) reported using BI tools regularly, and 64% indicated that these tools support decision-making in their roles. Power BI was the most frequently referenced platform, used by 64% of respondents, demonstrating its growing role in enabling timely, data-informed decisions.

Encouragingly, 44% of respondents stated they always use BI tools to inform decision-making, with a further 52% using them occasionally, indicating broad engagement and a solid foundation to build upon. However, some respondents highlighted challenges around report customisation and interpreting outputs, often attributing these difficulties to a lack of formal training. Overall, 64% of those surveyed reported they had not received structured training on BI tools.






To address this, the health board’s Data Literacy Programme includes ad-hoc training, tailored one-to-one support, and a structured Managers Pathway Course. The programme continues to evolve, with new modules being regularly developed and introduced to meet emerging needs and support continuous learning across the workforce.

A positive example of BI in practice comes from the Mortality Dashboard, which has supported the identification of unwarranted variation, informed deeper clinical reviews, and prompted process changes, such as improvements in DNACPR (Do Not Attempt Cardiopulmonary Resuscitation) processes, demonstrating how BI tools can directly support data-informed clinical decision-making. This dashboard, along with others such as the UEC (Urgent and Emergency Care) Dashboard and the Quality and Safety Dashboard, includes self-service tools that allow users to customise how data is visualised. These tools provide flexibility through interactive features, such as filters and adjustable parameters, enabling users to narrow or broaden their analysis and drill into more granular insights. Even in dashboards without specific self-service components, users can still apply filters to explore data in a way that meets their needs.

Clear progress has been made through the BI Strategy 2022–2025, with remaining gaps to be addressed in the refreshed BI Strategic Plan 2025–2028.

# Appendix A Assurance Opinion & Prioritisation of Findings

## Assurance Opinion

	<b>Substantial</b>	Few matters require attention and are compliance or advisory in nature. <b>Low impact</b> on residual risk exposure.
	<b>Reasonable</b>	Some matters require management attention in control design or compliance. <b>Low to moderate impact</b> on residual risk exposure until resolved.
	<b>Limited</b>	More significant matters require management attention. <b>Moderate impact</b> on residual risk exposure until resolved.
	<b>Unsatisfactory</b>	Action is required to address the whole control framework in this area. <b>High impact</b> on residual risk exposure until resolved.
	<b>Advisory</b>	Given to reviews and support provided to management which form part of the internal audit plan, to which the assurance definitions are not appropriate. These reviews are still relevant to the evidence base upon which the overall opinion is formed.

## Prioritisation of Findings

Priority	Explanation
<b>High</b>	Significant risk to achievement of a system objective OR evidence present of material loss, error, or misstatement. Poor system design OR widespread non-compliance.
<b>Medium</b>	Some risk to achievement of a system objective. Minor weakness in system design OR limited non-compliance.

Website: [Audit & Assurance Services - NHS Wales Shared Services Partnership](#)

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## Public Sector Internal Audit Standards

Audit work undertaken by NHS Wales Audit and Assurance Services conforms with the International Standards for the Professional Practice of Internal Auditing and associated Public Sector Internal Audit Standards as validated through the external quality assessment undertaken by the Chartered Institute of Public Finance & Accountancy in April 2023.

