

A critical analysis of the impact, benefits and risk of artificial intelligence (AI) in relation to people analytics in the Health Board

Introduction

Hywel Dda University Health Board, with a workforce of over 13,000 staff, serves the population of Dyfed and neighbouring communities (H DUHB, 2024). It is recognised across Wales that many health boards are facing financial pressures and challenges in relation to their available workforce. Hywel Dda is currently not in a position to currently produce a balanced integrated medium-term plan (IMTP) with a savings target of £19m recurrent and £25.4m non recurrent to achieve in year (H DUHB,2025).

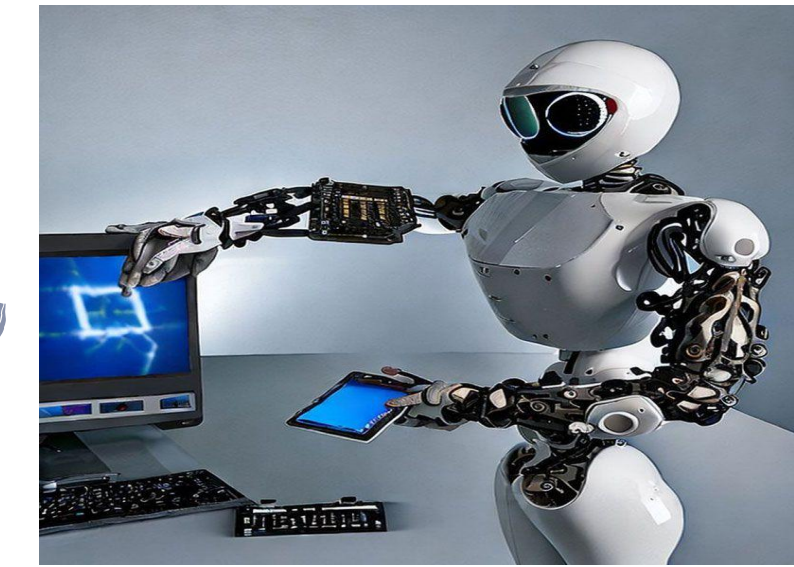
Artificial Intelligence (AI) presents the opportunity to enhance strategic planning, with real-time insights into staff wellbeing and performance plus transformative people analytics. To support such transformation the skillsets within the workforce need to be redesigned and developed (Audit Wales, 2025). With any innovation consideration must be given to its risks as well as its potential benefits. Ethical integration will mitigate potential pitfalls and will be key to collaborative evidence-based decision-making. This will unlock AI’s value while safeguarding workforce trust.



Literature Review



Methodology



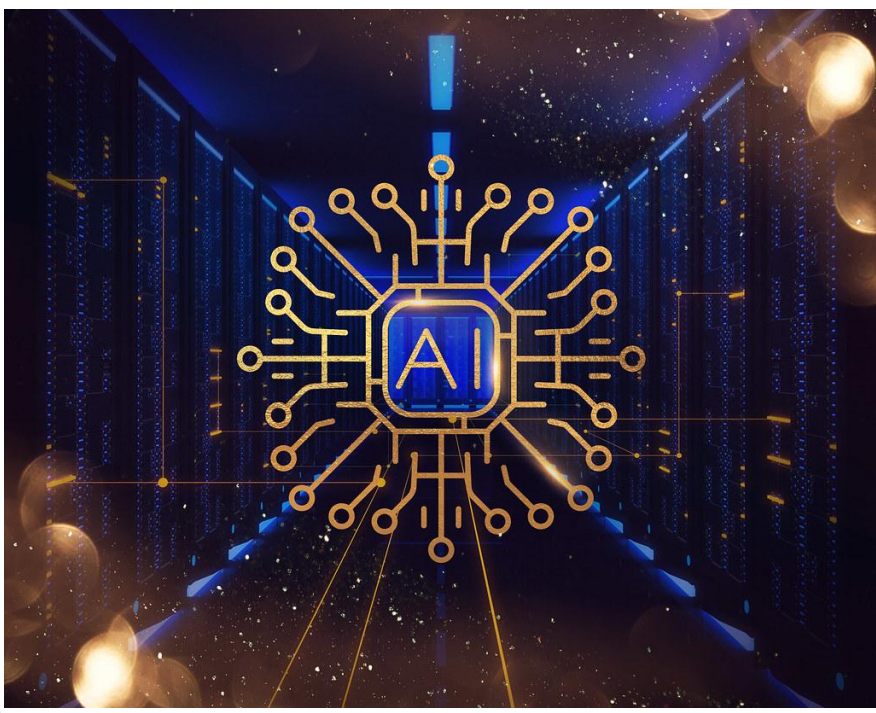
AI offers an opportunity that relies on strong foundations to ensure legal compliance, safe adoption and effective deployment of skills to fully realise its benefits whilst maintaining public trust (Gillespie et al, 2025). People analytics can support the resolution of business difficulties to bring about triangulation of strategy and operation allowing it to influence decisions (McBride, Crunden & Bryce, 2021). It must be used transparently, ethically and inclusively with the requisite oversight (Welsh Government, 2025). AI drives efficiency from data, but overreliance on it has the potential to reduce emotional intelligence, self-regulation and empathy (Richmond, 2025). To enable the effective use of AI the technological infrastructure must meet the needs of the NHS. Legacy IT systems and outdated devices can lead to cyber security concerns as well as a waste of fiscal resource due to incompatibility (Mistry, 2025).

Blending semi-structured interviews with non-probability sampling allowed adaptability, by prioritising context over rigidity. This supported a pragmatic philosophy which is suited to the complex dynamic nature of the NHS (Fesmire, 2017). Often methods based on pragmatism will combine both quantitative and qualitative approaches to address the complex subject (Armstrong & Taylor, 2023). The thematic analysis utilised to critically review the primary research is based on the six-step framework proposed by Braun and Clarke (2022) as cited in (Anderson and Fontinha, 2024). The iterative review of transcripts and recording allows a thorough review and draws out the key themes. The methods of interview and sampling have their limitations, but assessing the areas of work of the participants has ensured multiple perspectives, thus mitigating sampling bias and allowing for differences based on their specific work remit

Findings

The primary research undertaken brought to light several themes that are prevalent. These include the predictive capability which enables real-time analytics to support workforce planning, as well as the opportunity to enhance efficiency and time saving plus human factors such as bias or emotion. All themes drawn from the interviews had both negative and positive connotations associated. The ability to consume large complex data sets and produce predictive real-time analyses enhances decision-making and forecasting resource requirements (HEIW, 2025). However, in order to do this, data needs to be clean, accessible and well structured. Unfortunately, data within the NHS is disorganised and held on older systems which limit integration and present a higher cyber risk (NHS Confederation, 2025). Given the sensitivity of both patient and employee data held within NHS systems, the requirement for strong governance structures and skilled users is paramount to ensure confidence is maintained (NHS Confederation, 2025) and the system and workforce redesign is successful in deploying the right skills to the correct place at the appropriate time (Hardie et al. 2021). There may be significant benefits in operational efficiency and increased job satisfaction from more value-adding activity being allowed from time saving (Armstrong, 2025). There are risks highlighted in both primary and secondary research where removal of human emotional intelligence allows the bias within algorithms to perpetuate and results in unethical decisions being progressed (McBride, Crunden & Bryce, 2021).

Conclusion



The potential of AI in people analytics is monumental but only if the risks are considered to establish strong sociotechnological frameworks (Hardie et al, 2021). It requires governance structures and technological infrastructures with a high cyber security focus to ensure its ethical use (Shrestha et al, 2019). However, upskilling staff to embrace the use of AI and release time by process automation will provide opportunities to understand and present detailed insights and causation; rather than merely descriptive commentary of historical trends (Eubanks, 2022).

This shift in workforce design will enable the needed progression from descriptive to prescriptive analysis to fully support evidence-based insight driven workforce planning along with role redesign to allow outcome driven strategies (Marchington et al, 2021). To achieve the full potential of AI adoption within the health board, consideration must be given to the stakeholders on implementation groups. Without a varied group of individuals with differing ethnicities, genders, specialisms and life experiences, there is a higher risk of bias being drawn into the algorithms (Eubanks, 2022). A range of perspectives and opinions helps to challenge assumptions and create an inclusive design to reduce risk of exacerbating existing bias within algorithms and foster an environment of scrutiny and constructive debate.