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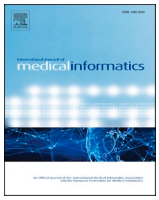

Evaluating AI adoption in healthcare: Insights from the information governance professionals in the United Kingdom

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ABSTRACT

Background: Artificial Intelligence (AI) is increasingly being integrated into healthcare to improve diagnostics, treatment planning, and operational efficiency. However, its adoption raises significant concerns related to data privacy, ethical integrity, and regulatory compliance. While much of the existing literature focuses on the clinical applications of AI, limited attention has been given to the perspectives of Information Governance (IG) professionals, who play a critical role in ensuring responsible and compliant AI implementation within healthcare systems.

Objective: This study aims to explore the perceptions of IG professionals in Kent, United Kingdom, on the use of AI in healthcare delivery and research, with a focus on data governance, ethical considerations, and regulatory implications.

Methods: A qualitative exploratory design was employed. Six IG professionals from NHS trusts in Kent were purposively selected based on their roles in compliance, data governance, and policy enforcement. Semi-structured interviews were conducted and thematically analysed using NVivo software, guided by the Unified Theory of Acceptance and Use of Technology (UTAUT).

Results: Thematic analysis revealed varying levels of AI knowledge among IG professionals. While participants acknowledged AI's potential to improve efficiency, they raised concerns about data accuracy, algorithmic bias, cybersecurity risks, and unclear regulatory frameworks. Participants also highlighted the importance of ethical implementation and the need for national oversight.

Conclusion: AI offers promising opportunities in healthcare, but its adoption must be underpinned by robust governance structures. Enhancing AI literacy among IG teams and establishing clearer regulatory frameworks will be key to safe and ethical implementation.

1. Introduction

Artificial Intelligence (AI) is transforming various industries, and healthcare is no exception. The integration of AI into healthcare delivery and research has the potential to enhance diagnostic accuracy, improve patient care, and optimize administrative efficiency. Recent research outlined how AI is reshaping public health and clinical services, yet noted that implementation remains uneven due to systemic and ethical concerns [1,2]. AI-driven applications such as predictive analytics, automated diagnostic tools, and virtual health assistants are already being explored in healthcare systems globally [3–5]. These studies have demonstrated AI's utility in automating routine clinical and administrative functions, but often stop short of analysing the governance systems required for long-term sustainability.

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Despite these promising advancements, AI implementation in healthcare is met with significant challenges, particularly concerning data privacy, ethical considerations, regulatory compliance, and trust among key stakeholders [6]. One of the most critical groups involved in AI governance is the Information Governance (IG) team, which is responsible for ensuring that patient data is used securely, ethically, and in accordance with regulatory requirements. Rees et al. [7] argue that IG is a socio-technical process, essential for building public trust in healthcare AI, yet empirical insights into IG professionals' own perspectives are lacking. Ho [8] highlights that the regulatory framework for AI in healthcare is fragmented and often not aligned with data ethics.

AI is increasingly being used in healthcare settings for clinical decision support, administrative process automation, and medical research. Machine learning algorithms can analyze large volumes of healthcare data, enabling early disease detection and personalized treatment planning. However, as noted by Soladoye et al. [9] and Rehan [10], the reliability of AI tools is largely dependent on the quality of the training data and the transparency of AI systems—areas where many healthcare applications fall short. AI-powered systems, such as those used in radiology, can assist in detecting abnormalities in medical imaging, reducing the burden on healthcare professionals while improving diagnostic accuracy [11,12]. Pinto-Coelho [11] and Barragán-Montero et al. [12] confirmed AI's diagnostic potential but acknowledged that deployment often outpaces policy development, making governance an urgent concern. Additionally, AI is being explored in patient triaging, virtual consultations, and workflow optimization, making healthcare services more efficient.

While AI holds the promise of enhancing healthcare delivery, it also introduces complexities related to data security, bias, and ethical concerns. Ensuring patient confidentiality and compliance with data protection laws such as the UK General Data Protection Regulation (UK GDPR) is a critical aspect of AI adoption [13,14]. Scheibner et al. [13] emphasise the growing tension between data-driven innovation and data protection compliance, while Williamson and Prybutok [14] highlight that many institutions lack the systems required to enforce these regulations consistently. This is particularly important in the NHS, where sensitive patient data must be handled with the highest levels of security and integrity [14]. Without clear regulatory oversight and risk mitigation strategies, AI applications in healthcare could inadvertently compromise patient data, leading to potential breaches and ethical dilemmas.

Despite its advantages, the adoption of AI in healthcare remains a topic of concern, particularly among healthcare administrators and governance professionals. One of the primary challenges is ensuring that AI systems adhere to strict data security and privacy regulations [1]. AI models rely on vast amounts of patient data to function effectively, and improper data handling could lead to breaches of patient confidentiality. Rao et al. [15] note that security vulnerabilities are magnified in AI environments due to the scale and sensitivity of data processed, yet governance mechanisms lag behind technical advancements. Information Governance professionals play a key role in overseeing how AI interacts with patient data, ensuring compliance with legal frameworks such as the Data Protection Act 2018 and NHS Digital's Data Security and Protection Toolkit [16]. Morley et al. [16] contend that globally, AI regulation lacks specificity and enforcement tools, which poses a barrier to confident implementation in public health systems like the NHS. Concerns regarding the ethical implications of AI in healthcare are also central to discussions surrounding its adoption. Issues such as algorithmic bias, lack of transparency in AI decision-making, and the potential for AI systems to perpetuate healthcare inequalities need to be addressed before AI can be fully integrated into clinical settings [17]. Mennella et al. [17] argue that ethical lapses in AI design can reinforce systemic inequities, making it essential to involve governance experts in decision-making. If AI models are trained on biased datasets, there is a risk that they could reinforce existing disparities in healthcare outcomes, leading to ethical and legal consequences.

The level of AI literacy among healthcare professionals also varies widely, contributing to differing perceptions regarding its use. While some professionals are optimistic about AI's potential, others are skeptical due to a lack of understanding or exposure to AI-driven healthcare applications [18,19]. Rehman et al. [18] and Masawi et al. [19] demonstrated that attitudes toward AI are closely tied to familiarity and training, with governance and administrative staff often overlooked in organisational AI readiness assessments. This variation in knowledge levels extends to IG teams, where some members may have direct experience with AI tools, while others are still navigating the complexities of AI governance [20]. Papagiannidis et al. [20] stress that governance frameworks must be co-developed with end-users—including IG professionals—to reduce resistance and ensure realistic adoption paths. Given that IG teams are at the forefront of ensuring compliance with data protection and governance policies, their perspectives on AI adoption are crucial for shaping NHS policies and strategies.

The Information Governance team's perceptions of AI are further influenced by external pressures, including governmental policies, public trust, and the broader regulatory environment. Healthcare institutions must align their AI strategies with national and international guidelines while also addressing concerns raised by professionals within their organisations [14]. The introduction of AI into healthcare settings requires well-defined governance structures, ongoing monitoring, and clear accountability frameworks [16]. However, existing research has not sufficiently explored how governance professionals themselves interpret, support, or resist AI adoption, especially within publicly funded healthcare systems like the NHS.

Existing literature on AI in healthcare has predominantly focused on its technical capabilities and clinical applications, with limited attention given to the governance and regulatory aspects. Studies that have examined AI adoption in healthcare governance settings highlight concerns about data security, compliance, and ethical decision-making [13,19]. Nonetheless, these studies often remain theoretical or focus on high-level policy implications without incorporating the experiential knowledge of those managing implementation on the ground. However, these studies often do not capture the nuanced perspectives of IG professionals who are directly involved in managing patient data and ensuring regulatory adherence. There remains a critical gap in understanding how IG teams interpret the risks, benefits, and practical constraints of AI technologies within real-world healthcare institutions.

Therefore, this study adopts a qualitative approach, guided by the Unified Theory of Acceptance and Use of Technology (UTAUT), to explore the perceptions of IG professionals in Kent. This framework allows for the exploration of performance expectancy, social influence, and facilitating conditions that affect technology adoption. By exploring the perceptions of the Information Governance team in Kent, this study aims to provide insights into the opportunities and barriers associated with AI implementation in healthcare. Through qualitative data collection, the study will examine the extent of AI knowledge among IG professionals, their experiences with AI-based healthcare services, and their concerns regarding data security, ethics, and regulatory compliance. The findings will contribute to ongoing discussions on AI governance and inform strategies for enhancing AI adoption in healthcare while addressing governance-related challenges. Ultimately, this research fills a crucial gap by giving voice to governance professionals whose expertise is pivotal for ethical and sustainable AI integration in public healthcare systems. Understanding the viewpoints of IG professionals will be essential for policymakers, healthcare administrators, and AI developers as they work toward responsible and effective AI integration in healthcare systems.

2. Methodology

This study employed a qualitative research approach to explore the perceptions of the Information Governance (IG) team in Kent regarding the application of Artificial Intelligence (AI) in healthcare delivery and

research. A qualitative approach was chosen due to its ability to capture in-depth perspectives, uncover context-specific insights, and explore the complex nuances of AI adoption in healthcare settings.

2.1. Study design

A qualitative exploratory design was employed to capture in-depth insights into the knowledge, experiences, concerns, and attitudes of Information Governance (IG) professionals regarding the adoption of Artificial Intelligence (AI) in healthcare. To structure the investigation and interpret the findings systematically, the Unified Theory of Acceptance and Use of Technology (UTAUT) model was adopted as the analytical framework [21].

The UTAUT model provided three core constructs that guided both the interview protocol and thematic analysis:

- Performance Expectancy: The extent to which IG professionals believe AI will enhance healthcare performance (e.g., efficiency, accuracy, diagnostics).
- Social Influence: The degree to which external pressure or stakeholder expectations affect IG professionals' openness to AI adoption.
- Facilitating Conditions: The availability of resources (training, infrastructure, regulatory clarity) to support AI implementation.

These constructs informed the development of interview questions and shaped the coding process during analysis, ensuring that findings could be interpreted within a consistent and validated behavioural framework. To further enhance clarity, Research Framework Flow Diagram was developed (Fig. 1), which illustrates how the UTAUT constructs align with the qualitative research process—from data collection (semi-structured interviews), through thematic analysis, to interpretation of findings and derivation of policy implications. This visual model demonstrates how data was mapped to the UTAUT framework and how themes were derived to address the research objectives.

2.2. Participants and Recruitment

The study population consisted of Information Governance (IG) professionals working within healthcare organisations in Kent, United Kingdom. Participants were purposively selected based on their roles in data governance, compliance, cybersecurity, and research oversight, ensuring that insights were gathered from individuals directly responsible for AI-related policies, data privacy, and regulatory adherence.

2.2.1. Inclusion Criteria

- Currently working in an Information Governance role within a healthcare organisation in Kent.
- Have experience with data privacy, cybersecurity, regulatory compliance, or AI-related governance.
- Willing to share their perspectives on AI in healthcare and research.

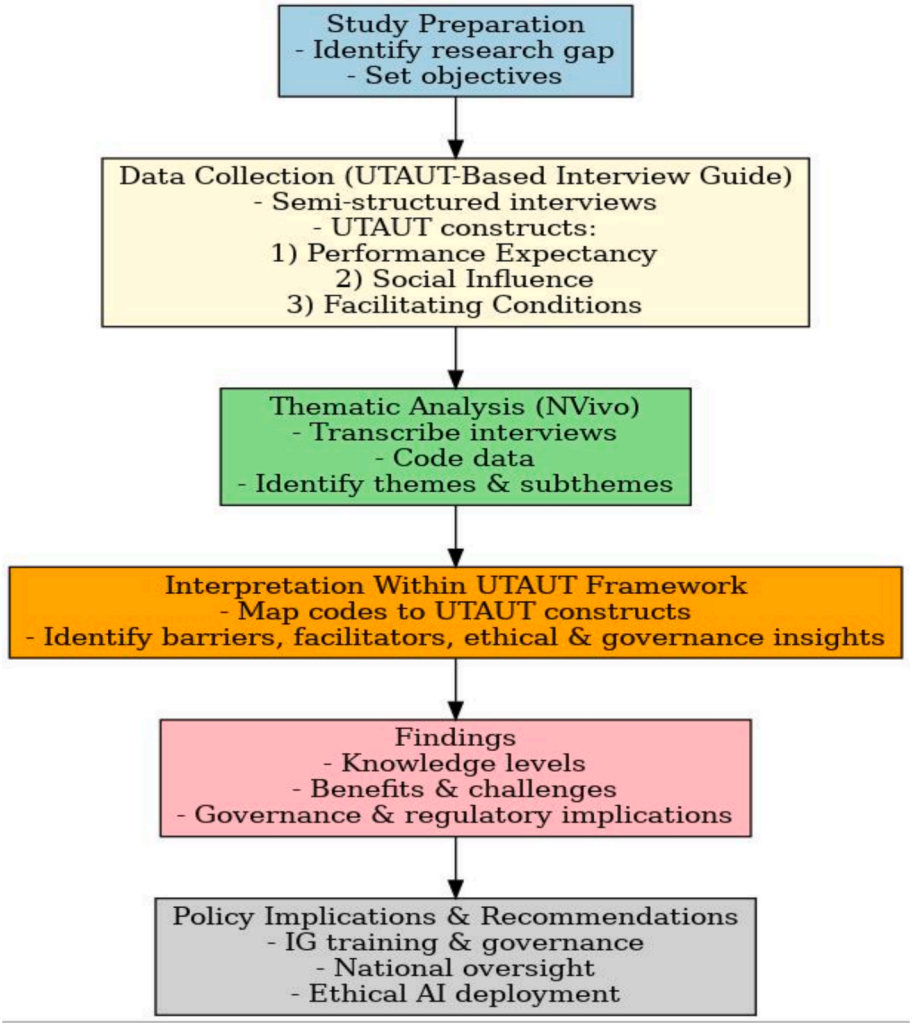

Fig. 1. Research Framework for Exploring AI Adoption Among IG Professionals.

2.2.2. Exclusion Criteria

- Individuals not involved in governance or regulatory oversight of AI-related healthcare applications.
- Those unwilling to participate or unable to provide informed consent.

Participants were recruited through internal professional networks, email invitations, and referrals from colleagues within NHS Trusts in Kent. A total of six IG professionals participated in the study.

2.3. Data collection

Data was collected through semi-structured in-depth interviews, allowing participants to discuss their experiences, perspectives, and concerns regarding AI applications in healthcare. This method was chosen for its ability to capture detailed, participant-driven narratives while ensuring consistency across key themes.

2.4. Interview process

- Interviews were conducted virtually via Microsoft Teams, allowing for flexibility and accessibility.
- Each interview lasted approximately 30–40 min.
- An interview guide was used, with open-ended questions to encourage participants to elaborate on their experiences.
- Interviews were audio-recorded (with consent) and transcribed verbatim for analysis.

The interview questions covered key thematic areas, including:

1. Knowledge and Awareness of AI – Participants' familiarity with AI technologies in healthcare.
2. Perceived Benefits of AI – The advantages of AI in improving efficiency, decision-making, and research.
3. Challenges and Risks – Concerns about data security, AI bias, ethical implications, and governance.
4. Trust and Confidence in AI – Participants' levels of trust in AI applications.
5. Regulatory and Compliance Considerations – Views on AI governance, legal frameworks, and NHS policies.

A reflexive approach was adopted throughout data collection, ensuring that emerging insights informed subsequent interviews to enhance depth and coverage.

2.5. Data analysis

A thematic analysis approach was used to identify and interpret recurring patterns within the data. This method was selected due to its flexibility, depth, and ability to generate meaningful insights from qualitative data.

2.5.1. Analysis process

1. Familiarisation with Data – Interview transcripts were reviewed multiple times to ensure deep engagement with the data.
2. Initial Coding – Open coding was performed, assigning labels to significant excerpts related to AI adoption, risks, and governance.
3. Thematic Development – Codes were grouped into broader themes based on patterns and relationships emerging across participant responses.
4. Review and Refinement – Themes were reviewed for coherence, alignment with research objectives, and relevance to existing literature.
5. Interpretation – The findings were contextualised within the UTAUT framework and compared with current AI governance literature.

NVivo software was used to aid in data organisation and theme identification, ensuring a rigorous, systematic approach to analysis.

2.6. Ethical considerations

This study adhered to strict ethical research guidelines to ensure participant safety, confidentiality, and informed consent. Ethical approval was obtained from HRA and Health and Care Research Wales (HCRW).

- Ethical Approval: The study was approved by the HRA and Health and Care Research Wales (HCRW) under the reference 24/HRA/3221. Approval was granted for the research conducted at Medway NHS Foundation Trust, ensuring compliance with ethical and regulatory standards.
- Informed Consent: Participants were provided with a detailed information sheet outlining the study's objectives, procedures, data protection measures, and their right to withdraw. Written informed consent was obtained before participation.
- Confidentiality: To protect participant identities, all data was anonymised, and transcripts were securely stored in compliance with UK GDPR and NHS data security protocols. Only authorised researchers had access to the data.
- Right to Withdraw: Participants were informed that they had the right to withdraw at any stage of the study without providing a reason, ensuring voluntary participation.
- Data Protection Compliance: The study followed UK GDPR (2018) regulations, ensuring that participants' personal and professional data were handled responsibly and securely.

3. Results

The thematic analysis presents key themes from six participant interviews on AI adoption in healthcare, focusing on variations in knowledge, perceived benefits, challenges, ethical concerns, and regulatory implications. Table 1 summarises the participants' backgrounds, their organisations, and their engagement with AI based on their transcript responses.

3.1. Knowledge and awareness of AI in healthcare

3.1.1. Varied levels of AI knowledge across teams

AI knowledge within healthcare organisations varies significantly. Some teams collaborate closely with AI specialists, ensuring a higher level of expertise, while others have only a general awareness of AI applications. Some participants highlighted the presence of AI specialists and research professionals within their teams, helping them gain insights into AI applications. However, others, particularly in governance and compliance roles, described a learning curve in understanding AI's full potential.

Participant 1:

- *"For our Information Governance (IG) team, knowledge of AI is low. We are learning as we go along and playing catch-up."*
- *"We are currently testing Microsoft Copilot, and some teams use tools like Wolfram and ChatGPT, but overall, AI literacy is still developing."*

Participant 2:

- *"I work in research governance, and I would say my knowledge of AI is more general rather than specific."*
- *"There isn't a strong AI knowledge base outside the IT and IG teams in our organisation."*

Table 1
Socio-demographic details of the participants.

Participant	Gender	Organisation	Role/ Department	Experience with AI
1	Male	NHS Trust	Information Governance (IG) Team	Limited AI knowledge, learning as they go, testing Microsoft Copilot and ChatGPT
2	Male	NHS Trust	Research Governance	General AI knowledge, AI knowledge is minimal
3	Male	NHS Trust	Information Governance	Moderate AI knowledge, observing early-stage AI implementations in call triaging
4	Female	Kent and Medway NHS and Social Care Partnership Trust	Research and Innovation Team	Basic AI knowledge, uses ChatGPT for summarisation, team includes AI specialists
5	Female	Kent and Medway NHS and Social Care Partnership Trust	Research and Innovation Team	Uses AI tools like ChatGPT but lacks deep technical expertise, team has AI experts
6	Female	NHS Trust	Information Governance & Research	Strong AI knowledge, involved in AI implementation projects, focus on regulatory aspects

Participant 3:

- *"Our IG team has a reasonable level of AI knowledge, but the wider organisation lacks awareness."*
- *"We are seeing AI being introduced in areas like call triaging, but overall, implementation is in its early stages."*

3.1.2. Learning through implementation

Some participants emphasised that their teams were acquiring AI knowledge through practical implementation rather than structured training. While some organisations had AI specialists guiding them, others were still figuring out best practices.

Participant 4:

- *"We're part of the Research and Innovation Team… Our team is growing, particularly in research development."*
- *"We collaborate with AI specialists, including computing experts and data scientists. Some team members have extensive knowledge, while others only have a basic understanding."*

Participant 5:

- *"I personally use AI tools like ChatGPT, which I find helpful for summarisation, but I don't have technical AI expertise."*
- *"Our team includes an AI specialist who helps guide implementation efforts."*

Participant 6:

- *"I've worked on AI projects before, including cutting-edge implementations, so I have a solid understanding."*
- *"We are mindful of* regulatory *concerns, particularly privacy-by-design approaches."*

3.2. AI adoption in clinical and administrative settings

3.2.1. Early AI testing and implementation

Some participants mentioned that their organisations had started exploring AI applications, primarily in administrative functions such as call handling and patient triaging. However, wider clinical implementation remains in its early stages.

Participant 1:

- *"AI adoption is still a long road ahead. Right now, we are reviewing AI tools that staff bring forward rather than suggesting products ourselves."*

Participant 3:

- *"AI is both exciting and controversial… There are major concerns about bias in AI-driven diagnoses."*

Participant 5:

- *"AI can reduce duplication and waste….AI could help create accurate, accessible patient summaries that prevent miscommunication and delays in care."*

3.2.2. Challenges in Widespread clinical adoption

Despite some enthusiasm for AI's potential, concerns remain about its integration into healthcare services. Some participants noted that AI models currently lack the necessary regulatory frameworks and real-world testing to be fully trusted in clinical settings.

Participant 5:

- *"Coming into the NHS, I was shocked at how records are managed. Recently, I saw a specialist for a condition and had to go through multiple tests and consultations. By the time I reached the physiotherapist, they had no record of my previous tests. I had to sit with them as they manually searched through my records. That made me anxious—what if my records are inaccurate?"*

Participant 6:

- *"I think my team's level with AI is fairly good. I certainly have been involved in other organisations and this organisation in implementing AI products, some of which have been quite cutting-edge at the time."*
- *"Yeah. So in this Trust, there's ongoing projects. I can't speak much about it because it's ongoing, but there's the idea of implementing AI technology to help with non-medical tasks."*

3.3. Perceived benefits of AI in healthcare

3.3.1. Efficiency and Time-Saving

One of the key advantages of AI identified by participants is its ability to automate processes, streamline workflow, and reduce administrative burdens.

- AI can support administrative functions such as call handling and patient appointment scheduling.
- It can rapidly process large datasets, improving the speed of audits and research projects.
- AI is expected to reduce waiting times and enhance efficiency across various departments.

Participant 1:

- "Speed is the biggest benefit of AI—reducing delays in patient care and streamlining internal processes."

Participant 4:

- "AI can help reduce NHS backlogs, particularly in areas like radiology and diagnostics."

3.3.2. Improved patient care and diagnostics

AI's potential to assist in diagnosis and medical imaging was widely recognised. Participants noted its ability to support clinical decision-making and reduce diagnostic errors.

- AI can help radiologists by analysing scans, reducing the time required for diagnosis.
- It can identify patterns in patient records, flagging high-risk individuals for early intervention.

Participant 2:

- "AI can revolutionise diagnostics by identifying patterns that may be missed by human clinicians."

Participant 6:

- "AI applications in radiology are particularly promising—it can speed up cancer diagnoses and reduce referral times."

3.3.3. Support for neurodivergent patients and staff

AI also offers unique advantages for individuals with neurodivergence by providing accessibility features such as text summarisation, audio-to-text conversion, and automated assistance.

Participant 5:

- "From a neurodiversity perspective, I think AI can be useful. For someone who is neurodivergent, it can help identify mistakes more easily."
- "For example, it helps summarise meeting discussions, making information more digestible. In research, AI could help with systematic reviews. Right now, I've published a systematic review, but in the future, AI could make this process much more efficient."
- "Also, AI can help with reasonable adjustments, such as translating information or making it accessible for people with acquired brain injuries. It could adapt communications into a more multi-sensory format."

3.4. Challenges and risks of AI implementation in healthcare

While AI presents numerous opportunities, participants highlighted significant challenges and risks that could hinder its adoption.

3.4.1. Concerns about data accuracy and bias

Several participants raised concerns about the quality of NHS data, noting that inaccuracies and biases in existing records could affect AI models trained on them.

- Inconsistent or missing data could lead to unreliable AI-driven recommendations.
- Bias in AI models could disproportionately affect certain patient groups, leading to unequal healthcare outcomes.

Participant 5:

- "I think we need to clean up our data before we even consider using it. There are a lot of inaccuracies in NHS records. For example, I'm conducting an audit …. I've noticed that ethnicity data is often missing. Years ago, I did research on primary diagnoses, and it was shockingly difficult to retrieve accurate information."
- "So before we train AI on NHS data, we need to validate its reliability. Otherwise, AI could inherit and amplify existing biases."

Participant 3:

- "There are major concerns about bias in AI-driven diagnoses. If the training data isn't diverse enough, it can lead to incorrect or unequal outcomes for different patient groups."

Participant 6:

- "We need to make sure AI models are trained on representative datasets. Otherwise, we risk exacerbating disparities rather than reducing them."

3.4.2. Cybersecurity and data protection risks

Participants stressed the importance of securing AI systems to prevent data breaches and unauthorised access to sensitive patient information.

- AI tools need to comply with strict data protection regulations.
- There are risks associated with third-party AI vendors and potential security vulnerabilities in their systems.

Participant 5:

- "I think the main concern is cybersecurity—ensuring AI tools don't create vulnerabilities in our systems. If the software we use has any links to countries with ongoing conflicts, like Russia, that could be a security risk. Some reasonable adjustment tools I've used in the past were restricted due to such links."

Participant 4:

- "Data breaches are a significant risk. Another issue is the use of AI for patient interactions. For example, I was on the waiting list for medication, and they sent me an AI-driven app ……. I found it frustrating."
- " AI was being used as a way to cut corners instead of providing real support. It made me concerned that AI could be used to reduce waiting lists while offering minimal care."

3.4.3. Regulatory and ethical considerations

Ensuring compliance with healthcare regulations is a major barrier to AI adoption. Participants pointed out that AI must adhere to strict governance frameworks and ethical considerations.

- Proper oversight is needed to regulate AI use in clinical decision-making.
- Ethical considerations include ensuring informed consent and transparency in AI-driven patient interactions.

Participant 6:

- "We are mindful of regulatory concerns, particularly privacy-by-design approaches."

Participant 4:

- "Information sharing is another big issue. AI must be carefully monitored to prevent errors and legal complications. …if an AI tool leads to a fatal mistake, who is legally responsible? The trust, the software developer, or the NHS?"

Participant 5:

- "We need to examine case studies from other countries and learn from their experiences. AI adoption in healthcare should be evidence-based."

3.5. Regulatory implications and governance of AI in healthcare

Participants highlighted the importance of well-defined regulatory frameworks for AI implementation in healthcare settings.

3.5.1. Role of regulatory bodies

There is general agreement that AI in healthcare should be centrally regulated by national agencies to ensure consistency and accountability.

Participant 5:

- "It should be centralised under the Department of Health. We need strict policies around AI use, cybersecurity, and data governance. There should also be a national oversight body that regularly audits NHS data quality."

Participant 6:

- "I would consider the Department for Health and Social Care and the Information Commissioner's Office (ICO) as the key regulatory bodies."
- "If you're going through research, you might also want to get advice from the Research Ethics Committee or the Health Research Authority (HRA)."

3.5.2. Laws Governing AI and secondary data use

AI implementation in healthcare must comply with multiple legal frameworks, including data protection laws and NHS policies.

Participant 6:

- "Yes. So we've got so many laws. I will cover just a few—we've got the UK General Data Protection Regulation (UK GDPR), which is implemented by the Data Protection Act 2018. We also have NHS Health Acts throughout the years."
- "You also have a duty of confidentiality under the Access to Health Records Act 1990. And then there's the common law of confidentiality."

3.5.3. Challenges in research using secondary data

Using secondary data for AI-driven research comes with ethical and legal challenges. Participants emphasised the importance of transparency and patient consent.

Participant 6:

- "Lack of transparency is a key issue. Patients expect control over their data, and they may not realise that their information is being used for AI research. If the research lacks clarity, it does not meet legal standards."
- "For example, if data is being transferred to another third party, or even another country, that needs to be explicitly stated. Otherwise, it raises serious ethical concerns."

3.6. Key challenges in AI adoption for NHS institutions

3.6.1. Procurement and implementation issues

Many participants noted that AI adoption is often delayed due to procurement challenges and a lack of early engagement with key stakeholders.

Participant 6:

- "The danger is when AI tools get procured, and then safety cases and risk analysis have to be retrofitted. It can be done, but it takes project teams a longer amount of time."
- "We've seen cases where AI projects are bought without engaging Information Governance, IT, or clinicians early on. This stretches out project deadlines and complicates implementation."

3.6.2. Ensuring AI aligns with NHS Priorities

To successfully integrate AI, healthcare organisations must ensure that AI solutions align with existing patient care models and workflows.

Participant 6:

- "The NHS isn't a single entity—it's fragmented across different trusts with separate funding structures. AI could expose gaps in information sharing, leading to potential breaches."
- "So when AI tools get implemented, they must be adapted to the NHS structure, which is very different from private healthcare models."

3.7. Ongoing and Future AI projects in healthcare

Some participants shared insights into ongoing AI projects within their organisations, though details remain limited due to confidentiality agreements.

Participant 6:

- "Yes, there is an AI project ongoing in our trust, but I can't speak much about it because it's still in development."

Participant 5:

- "Our team is exploring machine learning for language analysis. AI could also help with quality data analysis and systematic reviews."

Participant 4:

- "We collaborate with computing experts who specialise in AI, so we're actively looking into its applications."

4. Discussion

The study found significant variability in AI knowledge among IG professionals, ranging from those with technical expertise to those with general awareness. Some participants reported working closely with AI specialists and data scientists, while others admitted to learning on the job or having minimal exposure. This aligns with existing literature, which indicates that AI literacy remains unevenly distributed within healthcare organisations [18]. Studies have shown that while IT and data science teams often have high AI familiarity, other departments, particularly governance and compliance units, tend to lack in-depth knowledge [22–24]. The variability in AI knowledge observed in this study suggests that structured AI training and cross-disciplinary collaboration could enhance AI competency within governance teams.

Under the Unified Theory of Acceptance and Use of Technology (UTAUT) model, Performance Expectancy (the perceived usefulness of AI) is a key factor influencing AI adoption. The mixed levels of AI knowledge indicate that higher familiarity with AI might lead to greater perceived usefulness, while lower knowledge could contribute to skepticism and resistance. As seen in prior research, a lack of familiarity often results in concerns about AI bias, data privacy, and regulatory compliance [18,25].

Participants expressed cautious optimism regarding AI adoption in healthcare, with recognition of its potential to reduce inefficiencies and improve patient care. However, they also highlighted barriers such as data accuracy concerns, system fragmentation, and ethical risks. Existing research supports these findings, with studies indicating that while AI can enhance diagnostic accuracy and streamline workflows, organisational resistance, integration challenges, and unclear regulations often hinder adoption [26,27]. Moreover, a study found that healthcare organisations with structured AI implementation plans reported greater success in adoption compared to those without clear governance structures [28].

The study found that AI adoption is more advanced in administrative tasks (e.g., patient triaging and call handling) than in clinical decision-

making [18]. This is consistent with literature indicating that AI has seen faster adoption in non-clinical functions due to lower regulatory barriers and fewer ethical concerns [29]. It was highlighted that AI can reduce duplicate processes and improve record accessibility, particularly for patients with complex conditions. Literature similarly highlights AI's ability to synthesise fragmented patient data and improve interoperability, reducing administrative burdens [15]. However, the concern raised about poorly managed patient records and missing clinical information aligns with studies indicating that electronic health record (EHR) systems often suffer from inconsistencies, leading to data biases and inaccuracies that could impact AI predictions [20,22].

Participants identified efficiency as one of AI's primary benefits, particularly in streamlining processes, improving diagnostic speed, and automating administrative workflows. These perceptions align with existing studies, which demonstrate that AI can significantly reduce workload burdens, enhance workflow automation, and optimise resource allocation [10,22]. Furthermore, the study highlighted AI's potential to improve diagnostics, particularly in radiology and pathology, where it can assist in identifying early disease markers and improving diagnostic accuracy. Prior research supports this, with AI-driven radiology tools showing superior accuracy rates compared to traditional diagnostic methods [11]. However, concerns regarding AI bias and algorithm transparency remain prevalent. A growing body of literature warns that AI models trained on biased datasets may reinforce existing health disparities, particularly for underrepresented demographic groups [9].

A unique insight from this study was the recognition of AI's role in supporting neurodivergent individuals. Participants noted that AI tools, such as text summarisation and voice-to-text conversion, can aid individuals with dyslexia and ADHD. This perspective is relatively underexplored in mainstream AI healthcare research, though some studies suggest that AI can enhance personalised learning and accessibility tools for neurodivergent populations [5,30]. Future research should explore how AI can be better leveraged to support diverse cognitive needs in healthcare settings.

Concerns about data reliability were a recurring theme. Participants stressed the need for clean, high-quality data before AI models could be safely deployed. This aligns with evidence showing that poor data quality is one of the most significant barriers to AI implementation in healthcare [1,6]. Research further confirms that bias in training datasets can lead to inaccurate predictions, disproportionately affecting marginalised patient groups [31,32]. Also, participants expressed concerns about AI-driven cybersecurity risks, particularly in relation to third-party vendors and international data access. This is supported by recent studies highlighting that AI-powered healthcare systems face an increased risk of cyber threats, data breaches, and hacking incidents [33,34]. Regulatory compliance remains a critical issue, with existing laws such as the UK GDPR and Data Protection Act 2018 providing legal frameworks, though enforcement and AI-specific guidelines remain limited.

Participants raised concerns about legal accountability in AI-driven healthcare errors—a topic widely debated in academic literature. As noted by Morley et al. [16], AI systems must operate within clear ethical and legal boundaries, yet many current policies lack specificity regarding AI-related liabilities. The issue of who is responsible when an AI system makes a clinical error remains legally ambiguous, echoing concerns raised in previous studies [14,17]. Additionally, participants called for centralised regulation, emphasising that AI governance should fall under the Department of Health and the Information Commissioner's Office (ICO). This view aligns with research suggesting that AI regulations must be standardised at a national level to ensure consistency, security, and compliance [14]. The study also highlighted the lack of transparency in secondary data use for AI-driven research. Participants stressed the importance of informed patient consent when using health data for AI training—a concern echoed in existing literature [17,28].

Participants pointed out procurement issues and delayed implementation timelines due to insufficient early stakeholder engagement. This aligns with findings from healthcare AI implementation case studies, which indicate that late-stage regulatory interventions often delay AI adoption [20]. Moreover, participants emphasised that AI must align with NHS structures, a sentiment reflected in research highlighting the unique challenges of integrating AI into public healthcare models compared to private sector applications [35,36].

5. Strengths and limitations of the study

One of the key strengths of this study is its focus on a relatively underexplored area—examining the perceptions of Information Governance (IG) professionals regarding AI implementation in healthcare. While much research has been dedicated to the technical and clinical aspects of AI in healthcare, relatively little attention has been given to the role of governance, compliance, and regulatory oversight in AI adoption. By centering the perspectives of IG professionals, this study contributes valuable insights into how AI technologies align with data security policies, ethical considerations, and NHS regulations.

Another strength of this study lies in its qualitative approach, which allows for an in-depth exploration of complex and nuanced issues surrounding AI governance. The use of in-depth interviews enables participants to share detailed experiences, concerns, and expectations regarding AI adoption, providing a rich dataset that goes beyond what a purely quantitative survey could capture. This approach ensures that the study captures diverse perspectives within the IG team, highlighting differences in knowledge, trust, and concerns about AI.

Additionally, the study benefits from its relevance to current policy discussions. As AI adoption in healthcare accelerates, policymakers and NHS administrators require informed guidance on governance challenges. This study's findings will provide practical recommendations for integrating AI in a way that aligns with data protection laws and ethical standards. Furthermore, the inclusion of multiple participants from different areas within IG ensures that the study captures a broad spectrum of views, reducing the risk of individual bias dominating the findings.

However, despite these strengths, the study has certain limitations. One of the primary limitations is the relatively small sample size, as it focuses on IG professionals within a single NHS trust in Kent. While this provides a detailed understanding of local perceptions, the findings may not be fully generalizable to all NHS trusts or other healthcare systems. Different healthcare settings may have varying levels of AI exposure, governance challenges, and institutional support, which could influence perceptions differently.

Another limitation is the reliance on self-reported data, which may be influenced by individual biases or limited experiences with AI. Some participants may have had minimal interaction with AI tools, leading to responses that reflect speculation rather than direct experience. Conversely, those who have worked closely with AI may have a more favorable view, creating a potential imbalance in perspectives. Future research could mitigate this by incorporating observational data or case studies of AI implementations in NHS settings.

Additionally, while qualitative research provides depth, it does not allow for statistical generalization. The findings of this study will be context-specific and should be interpreted with caution when applied to broader AI governance discussions. Further research, potentially using a mixed-methods approach incorporating quantitative data, could enhance the robustness of the findings by validating themes identified in the qualitative analysis. Lastly, the rapid evolution of AI technology presents a challenge in keeping the study's findings fully up to date. AI applications in healthcare are continuously evolving, and regulatory frameworks are adapting to these changes. This means that some concerns raised by participants may become less relevant over time, while new challenges may emerge. Future studies could explore longitudinal data collection to track how IG perceptions of AI evolve alongside

technological and regulatory advancements.

Despite these limitations, this study provides an essential foundation for understanding the role of IG professionals in AI adoption within the NHS. By addressing critical concerns related to data governance, privacy, and ethics, the findings will help inform strategies for the responsible integration of AI into healthcare systems.

6. Policy implications

The findings of this study hold significant policy implications for the safe and ethical integration of AI in healthcare. Firstly, there is a critical need for nationally standardised AI governance frameworks that clearly define the roles, responsibilities, and oversight mechanisms applicable across all NHS Trusts. Participants consistently called for stronger central regulation, suggesting that bodies such as the Department of Health and Social Care and the Information Commissioner's Office (ICO) play a more proactive role in auditing and regulating AI technologies used within healthcare systems.

Secondly, enhancing AI literacy among Information Governance professionals should be a strategic priority. Investment in training and continuous professional development will equip IG teams with the necessary skills to critically assess AI tools, ensuring they align with ethical, legal, and technical standards. This includes understanding privacy-by-design principles, risk management strategies, and the implications of algorithmic bias.

Thirdly, the quality of health data used to train AI systems must be prioritised in policy reforms. This includes ensuring completeness, accuracy, and representativeness to prevent perpetuating inequalities and erroneous predictions. Policymakers should also mandate ongoing evaluation and accountability mechanisms to monitor the long-term impact of AI on patient safety, system efficiency, and public trust.

Overall, interdisciplinary collaboration between technologists, clinicians, IG experts, and legal advisors should be institutionalised to guide AI adoption in a way that is inclusive, transparent, and aligned with NHS values.

7. Conclusion

The integration of artificial intelligence (AI) in healthcare offers promising advancements in diagnostics, patient care, and administrative efficiency. However, this study highlights the critical role of information governance (IG) professionals in ensuring secure and ethical AI adoption. Their perceptions reveal both optimism about AI's potential benefits and deep concerns about data privacy, regulatory compliance, and the risks of bias in AI-driven decision-making. The findings suggest that AI implementation in healthcare must be approached with caution, prioritizing transparency, security, and accountability.

Challenges such as inconsistent AI knowledge levels within IG teams, cybersecurity risks, and inadequate data quality remain significant barriers to AI adoption. While participants acknowledged AI's ability to improve efficiency and assist neurodivergent individuals, they emphasized the need for robust governance frameworks. Regulatory oversight by bodies such as the Information Commissioner's Office (ICO) and the Department of Health and Social Care is crucial in setting clear guidelines for AI use. Addressing these governance challenges will be key to ensuring AI is deployed responsibly and equitably across healthcare systems.

To facilitate responsible AI integration, healthcare institutions should implement privacy-by-design approaches, strengthen stakeholder collaboration, and invest in AI literacy training for IG teams. Continuous regulatory updates, rigorous model validation, and proactive ethical assessments should be embedded in AI governance. Future research should further explore interdisciplinary collaboration between IG professionals, clinicians, and policymakers to create sustainable AI governance frameworks that align with evolving healthcare needs.

CRediT authorship contribution statement

David B. Olawade: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Kusal Weerasinghe:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis. **Jennifer Teke:** Writing – review & editing, Validation, Methodology, Investigation, Conceptualization. **Maines Msiska:** Writing – review & editing, Writing – original draft, Methodology, Investigation. **Stergios Boussios:** Writing – review & editing, Writing – original draft, Supervision, Methodology. **Eleni Hatzidimitriadou:** Writing – review & editing, Validation, Supervision, Methodology, Investigation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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