ISSN: 2996-2536

Review Article

Japanese Journal of Medical Science

Artificial Intelligence Enabled Complaint and Feedback Management in the NHS: A Strategic and Operational Leap Forward

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Submitted: 2026, Sep 10; **Accepted:** 2026, Oct 02; **Published:** 2026, Oct 22

Citation: Krasopoulos, G., Palin, C. A., Harris, K. (2026). Artificial Intelligence Enabled Complaint and Feedback Management in the NHS: A Strategic and Operational Leap Forward. *Japan J Med Sci, 4*(2), 01-07.

Abstract

Objectives: *Patient complaints and wider feedback provide valuable insights into healthcare quality, patient safety and organisational performance. This paper examines the potential role of AI in strengthening complaint and patient feedback management within the NHS. It explores how AI-enabled systems can support organisational learning, improve decision-making and facilitate continuous service improvement while considering the governance and implementation challenges associated with their adoption.*

Methods: *A narrative review of academic literature, NHS policy documents and grey literature was undertaken to examine current evidence relating to AI-enabled complaint management, organisational learning and digital transformation in healthcare. To illustrate the practical application of these concepts, a phased implementation strategy developed at Oxford University Hospitals NHS Foundation Trust (OUH) is presented as an illustrative case study. As implementation is ongoing, the case study is intended to demonstrate implementation planning rather than report effectiveness outcomes.*

Results: *Current NHS complaints management systems remain predominantly manual, fragmented and reactive, limiting their ability to generate organisational intelligence from patient feedback. AI-enabled systems have the potential to improve complaint triage, thematic analysis, sentiment classification and early risk detection while reducing administrative burden. However, successful implementation requires robust governance, human oversight, organisational readiness, interoperability with existing digital infrastructure and phased implementation strategies.*

Conclusions: *AI has the potential to transform healthcare complaints and patient feedback into strategic organisational intelligence that supports planning, governance and quality improvement. Realising this potential will depend on responsible governance, organisational readiness and effective integration within NHS systems to strengthen organisational learning.*

Keywords: Artificial Intelligence, NHS, Complaints Management; Patient Feedback, Organisational Learning, Quality Improvement, Digital Transformation

Abbreviation	: Definition
AI	: Artificial Intelligence
AI-CFMS	: Artificial Intelligence–Enabled Complaint and Feedback Management System
CQC	: Care Quality Commission
NHS	: National Health Service
NLP	: Natural Language Processing
OUH	: Oxford University Hospitals NHS Foundation Trust
UK GDPR	: United Kingdom General Data Protection Regulation
WHO	: World Health Organization

1. Introduction

Healthcare organisations increasingly recognise that patient complaints and feedback provide valuable insights into healthcare quality, patient safety and organisational performance. Within the National Health Service (NHS), more than 3,000 formal complaints are received each week at an estimated annual cost exceeding £2 billion [1]. These complaints relate to clinical care, communication, waiting times, administrative processes and organisational failures, reflecting increasing expectations for transparency, accountability and patient-centred care. Despite the scale and richness of these data, complaints management across many NHS organisations remains labour-intensive, fragmented and focused primarily on resolving individual cases, limiting opportunities to identify recurring themes, detect emerging risks and support organisational learning [2,3].

Recent advances in Artificial Intelligence (AI), particularly Natural Language Processing (NLP), offer the potential to analyse large volumes of free-text complaints and patient feedback rapidly and consistently [4-6]. This could transform feedback management from a reactive administrative function into a strategic capability that supports organisational learning and quality improvement [7,8]. However, successful implementation depends on effective governance, organisational readiness and workforce engagement, and there remains limited evidence regarding the use of AI for complaint and patient feedback management within NHS organisations [9-11]. Greater understanding is therefore needed of the opportunities, governance requirements and implementation considerations associated with these technologies and their potential contribution to learning healthcare organisations [12-14].

This paper explores the emerging role of Artificial Intelligence (AI) in complaints and patient feedback management within the NHS. Drawing on the published literature and an illustrative implementation strategy developed at Oxford University Hospitals NHS Foundation Trust (OUH), it examines the opportunities, challenges and governance considerations associated with AI-enabled approaches. In doing so, the paper considers how AI may reshape the use of patient feedback to support organisational learning, service improvement and health system management, while identifying key priorities for future implementation and research.

2. Complaints and Patient Feedback as Strategic Organisational Intelligence

Complaints have traditionally been regarded as mechanisms for resolving individual grievances and ensuring compliance with statutory and regulatory requirements[15]. Individual complaints frequently reflect wider issues relating to communication, care coordination, access, clinical processes and system performance that may not be apparent through routine performance metrics alone. However, viewed collectively, they represent an important source of organisational intelligence [16].

Effective complaint management is crucial for improving patient experience and ensuring compliance with NHS regulations, including standards from the Care Quality Commission and NHS Ombudsman (https://www.ombudsman.org.uk) [17]. The Department of Health and Social Care in the “10-Years Health Plan for England has also indicated a growing emphasis on linking patient and stakeholder feedback to the commissioning and funding of health services in England, a strategic shift toward value-based healthcare and accountability [18].

Formal complaints represent only one component of a broader patient feedback ecosystem [19]. NHS organisations also collect compliments, Friends and Family Test responses, patient experience surveys, staff feedback and comments generated through digital platforms [20]. Although each source provides a different perspective, they are commonly analysed in isolation, limiting opportunities to identify recurring themes, triangulate findings across datasets and detect emerging organisational risks [12-14]. This broader perspective aligns closely with NHS ambitions to strengthen patient-centred care while embedding learning and continuous improvement across the health system.

3. Artificial Intelligence as an Enabler of Feedback Intelligence

AI should be viewed as an enabling technology that strengthens the NHS's capacity to understand, interpret and act upon patient experience data at scale. Current applications of AI in healthcare typically fall into two categories: assistive AI, where clinicians retain decision-making authority but are supported by AI-generated insights or recommendations; and autonomous AI, where the AI system independently makes clinical decisions without human intervention [17,21]. Advances in NLP allow large volumes of qualitative feedback to be analysed rapidly and consistently,

transforming unstructured text into meaningful organisational intelligence [13]. Beyond improving administrative efficiency, AI enables complaints and patient feedback to contribute more effectively to healthcare planning, operational management and quality improvement [14].

AI-enabled systems can support multiple stages of the feedback management process [22-23], including automated classification, thematic clustering, sentiment analysis and risk prioritisation. By identifying recurring themes and detecting patterns across large datasets, these systems can reveal organisational issues that may otherwise remain hidden. Continuous analysis also enables earlier identification of emerging risks, allowing organisations to intervene proactively rather than responding only after problems become widespread.

Nevertheless, AI should complement rather than replace human judgement. Complaints frequently involve complex clinical, ethical and emotional issues that require contextual understanding, empathy and professional expertise [24]. AI-enabled Complaint and Feedback Management Systems (AI-CFMS) should therefore be regarded as decision-support tools that reduce administrative burden while enabling complaints professionals and clinicians to focus on complex cases, meaningful patient engagement and organisational improvement.

4. Governance, Ethics and Human Oversight

The successful implementation of Artificial Intelligence (AI) in complaints and patient feedback management requires more than technological capability. It depends on governance arrangements that ensure transparency, accountability, patient trust and responsible use of data [25-26]. Complaints frequently contain highly sensitive clinical information, descriptions of adverse experiences and personal narratives. Consequently, AI-enabled systems must operate within robust legal, ethical and organisational frameworks that protect confidentiality while supporting learning and service improvement.

Within the NHS, implementation must comply with the UK General Data Protection Regulation (UK GDPR), the Data Protection Act 2018 and NHS England guidance on AI [27-29]. These frameworks emphasise that AI should augment professional judgement rather than replace it, while ensuring that data are processed lawfully, proportionately and transparently [30]. Information Governance Leads, Data Protection Officers and Caldicott Guardians should therefore be actively involved throughout system design, procurement, implementation and ongoing evaluation.

Governance extends beyond legal compliance [26-30]. Organisations must also establish clear accountability for AI-supported decisions, ensure transparency regarding how AI-generated outputs are produced, and continuously monitor algorithm performance. Explainability is particularly important where AI contributes to complaint prioritisation, sentiment analysis or response generation. Both patients and staff should understand that important decisions continue to be reviewed by appropriately trained professionals.

Human oversight remains essential [30]. Complaints often involve emotionally sensitive circumstances, including harm, bereavement or failures in communication. While AI can support the identification, categorisation and analysis of complaints, compassionate engagement with patients remains fundamentally a human responsibility [24,31]. AI should therefore be viewed as a decision-support technology that reduces repetitive administrative tasks while enabling complaints teams and clinicians to dedicate more time to complex cases, communication and organisational learning [30].

Effective governance should also include continuous evaluation through clearly defined performance indicators [32,33]. The key principles that should underpin responsible implementation of AI-enabled complaint and patient feedback management are summarised in Box 1. Measures such as complaint resolution time, consistency of thematic classification, escalation accuracy, user satisfaction and the extent to which organisational learning results in measurable service improvements provide a more meaningful assessment of implementation success than technical performance alone.

Ultimately, responsible governance [26-32] should not be viewed as a constraint on innovation but as an essential enabler of sustainable implementation. Organisations that combine technological capability with robust governance, transparency, explainability, auditing [26-30] and professional oversight will be better positioned to relish the benefits of AI while maintaining public confidence and safeguarding patient-centred care.

5. Illustrative NHS Case Study: Oxford University Hospitals NHS Foundation Trust

Although AI applications are becoming increasingly common across healthcare, published examples describing the implementation of AI-enabled complaint and patient feedback management within NHS organisations remain limited. Existing literature has focused predominantly on clinical AI applications, operational automation or customer service technologies, with comparatively little attention given to how AI may strengthen organisational learning through the analysis of patient experience. Consequently, there is currently limited evidence describing implementation strategies, governance arrangements or organisational impacts within NHS complaints services [14].

To illustrate how the concepts discussed throughout this paper may be translated into practice, Oxford University Hospitals NHS Foundation Trust (OUH) has developed a phased implementation strategy for an AI-CFMS. This case study is presented solely as an illustration of implementation planning. As the programme remains at an early stage of deployment, effectiveness outcomes are not yet available and are therefore not reported. Rather than evaluating the system, the case study demonstrates one possible approach to introducing AI within NHS complaints and patient feedback services [13]. The implementation strategy comprises

three sequential phases designed to support incremental learning, minimise organisational risk and facilitate continuous refinement [14].

- **Phase 1: Proof of Concept**
  The initial phase involves implementation within a digitally mature department using two software licences or readily available on the market AI-CFMS product to support the complaints coordinator and departmental administrator. The principal objectives are to evaluate usability, workflow integration and organisational acceptability, while assessing the potential of AI to reduce administrative burden and improve the consistency and reliability of complaint categorisation and thematic analysis. Within OUH, these capabilities are being evaluated at an estimated additional cost equivalent to approximately 1.7% of the current expenditure on complaint handling. This phase focuses on technical feasibility and stakeholder engagement rather than organisational outcomes.
- **Phase 2: Directorate-wide Implementation**
  Subject to successful completion of the proof-of-concept phase, implementation would progressively expand across additional clinical directorates. During this stage, governance processes, staff training, audit procedures and performance indicators would be refined. Close collaboration with technology providers would facilitate iterative system development while ensuring compliance with NHS information governance and emerging regulatory guidance.
- **Phase 3: Development of a Feedback Intelligence Platform**
  The final stage envisages the evolution of AI-CFMS into a comprehensive Feedback Intelligence Platform integrating complaints, compliments, Friends and Family Test responses, patient surveys and other qualitative feedback sources. Rather than functioning solely as a complaints management system, the platform would support continuous organisational learning through integrated analysis of patient experience, enabling strategic planning, quality improvement and service redesign across OUH, at an estimated additional cost equivalent to approximately 0.1% of the current expenditure on complaint handling.

The phased implementation strategy reflects recognised principles of digital transformation, including incremental deployment, multidisciplinary stakeholder engagement, iterative learning and benefits realisation. Although outcome data remain unavailable, the case study illustrates how NHS organisations may begin integrating AI into complaints and patient feedback management while maintaining governance, professional oversight and organisational accountability.

6. From Digital Innovation to Organisational Transformation

Demonstrating technical feasibility represents only the first stage of digital transformation. The greater challenge lies in translating local innovation into sustainable organisational change capable of improving healthcare quality at scale [34]. Many digital health initiatives achieve successful pilot implementation but fail to progress beyond early adoption because organisational, managerial and cultural factors receive less attention than technological developments [35,36].

The implementation of AI-enabled complaint and patient feedback systems should therefore be viewed as an organisational transformation programme rather than an information technology project. Successful adoption requires alignment between organisational strategy, leadership, governance, workforce capability and digital readiness [37]. Without these enabling conditions, even technically successful AI systems are unlikely to deliver meaningful improvements in patient experience or organisational performance [34].

Interoperability is central to this transformation [13]. Complaints and patient feedback should be integrated with wider organisational information systems, including electronic patient records, patient safety reporting systems, quality dashboards and business intelligence platforms. Such integration enables organisations to triangulate qualitative and quantitative data, identify relationships between patient experience and clinical outcomes, and support more evidence-informed planning and decision-making [14].

Organisational digital maturity is equally important as it provides a safe environment to test, learn, and adapt the AI-CFMS. NHS organisations vary considerably in their digital capability and readiness to implement AI-enabled technologies [37,38]. Successful adoption therefore requires investment in workforce development and multidisciplinary collaboration. Complaints teams, clinicians, managers, digital specialists and information governance professionals should work together to ensure AI is integrated into existing clinical and organisational workflows rather than introduced as a standalone technology.

Leadership is critical to successful implementation. Executive sponsorship, clinical engagement and clear organisational ownership are essential to sustain adoption beyond initial pilots [39 40]. Equally important is fostering a culture that recognises patient complaints and feedback as strategic resources for organisational learning rather than administrative obligations. Organisations that integrate patient feedback into quality improvement, governance and service redesign are more likely to realise the benefits of AI-enabled analysis. This approach aligns closely with the NHS 10-Year Health Plan [18], which emphasises prevention, patient empowerment and the systematic use of patient experience to drive service improvement.

Implementation should be accompanied by continuous evaluation using measures that reflect organisational value rather than technical performance alone. Alongside operational indicators such as response times and classification accuracy, organisations should assess whether AI enables earlier identification of systemic risks, strengthens organisational learning, improves patient experience, reduces administrative burden and supports service improvement. Benefits realisation should therefore be embedded throughout implementation rather than treated as a post-implementation exercise, ensuring AI contributes to broader organisational

intelligence and better decision-making [12].

7. Discussion

This paper argues that the greatest value of AI in the NHS lies not in automating complaints management but in transforming complaints and patient feedback into organisational intelligence that supports health planning, management and continuous quality improvement. Although complaints have traditionally been managed as individual episodes requiring investigation and response, collectively they represent a valuable source of information about how healthcare systems function from the perspective of patients and their families. When integrated with other forms of patient feedback, including compliments, Friends and Family Test responses and patient experience surveys [34], complaints provide a richer understanding of patient experience and create a stronger foundation for organisational learning, quality improvement and service redesign. This integrated approach enables healthcare organisations to identify systemic issues, prioritise improvement efforts and evaluate the impact of change over time.

The principal contribution of this paper is therefore conceptual rather than technological. Rather than viewing AI-CFMS as stand-alone digital tools, we propose that they should be considered as components of a broader Feedback Intelligence Framework, in which diverse sources of patient experience are transformed into actionable organisational intelligence that supports governance, planning and management [13,14]. This conceptual shift moves the discussion beyond administrative efficiency towards the strategic use of patient feedback to support learning healthcare organisations [12, 14]. The paper also highlights that implementation should be viewed as an organisational transformation programme rather than an information technology project [41]. While AI technologies are increasingly capable of analysing large volumes of qualitative data, their successful adoption depends upon organisational readiness, leadership, governance and workforce engagement [42]. Interoperability with existing NHS digital infrastructure is particularly important, enabling complaint and patient feedback data to be considered alongside patient safety incidents, quality indicators and clinical outcomes [13]. Such integration creates opportunities for richer organisational insight and more informed management decisions than can be achieved through isolated complaints systems.

The illustrative implementation strategy described at OUH demonstrates one potential pathway through which NHS organisations may begin introducing AI-CFMS. However, the case study should not be interpreted as evidence of effectiveness. As implementation remains at an early stage, organisational outcomes are not yet available. More broadly, the limited published experience describing AI implementation within NHS complaints services highlights an important gap in the literature and reinforces the need for rigorous implementation research evaluating organisational, managerial and patient-centred outcomes. Ultimately, the successful adoption of AI-CFMS depends less on technological capability than on organisational readiness. Implementation should therefore be viewed as organisational transformation rather than technology deployment, supported by leadership, interoperability and workforce engagement.

This manuscript has several limitations. First, it presents a conceptual narrative review rather than a systematic review or empirical study; therefore, the conclusions should be interpreted as a strategic framework to inform future research, policy and practice rather than as evidence of effectiveness. Second, the implementation strategy has not yet been empirically evaluated. Its value as a practical approach to AI-enabled complaint and patient feedback management therefore remains hypothetical until tested in routine NHS practice. Finally, although the manuscript draws upon established literature on artificial intelligence, implementation science, organisational learning and learning health systems, published evidence specifically examining AI-enabled complaint and patient feedback management within NHS organisations remains limited. Consequently, several of the proposed organisational and managerial benefits require empirical validation. Future research should therefore focus on longitudinal implementation studies, comparative evaluations across NHS organisations and economic assessments to determine the impact of AI-enabled complaint and patient feedback management on organisational learning, service improvement, patient experience and health system performance.

8. Conclusion

Artificial intelligence has the potential to transform healthcare complaints and patient feedback into strategic organisational intelligence that supports planning, governance and quality improvement. Realising this potential will depend on responsible governance, organisational readiness and effective integration within NHS systems to strengthen organisational learning.

- Acknowledgments section: No further acknowledgments
- Declaration of conflicting interest: Nothing to declare
- Funding statement: No funding
- Ethical approval and informed consent statements: No ethical approval required
- Data availability statement: Not applicable
- Any other identifying information related to the authors and/or their institutions, funders, approval committees, etc, that might compromise anonymity: Not applicable

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