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From Audit to Action: Healthcare Professionals' Experiences of Infection Prevention and Control Audits and Feedback in a Saudi Tertiary Hospital – A Qualitative Study

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Abstract

Background: Infection prevention and control (IPC) audits and feedback are essential components of healthcare quality improvement. However, translating audit findings into sustained clinical practice improvements remains challenging. This study aimed to explore healthcare professionals' experiences and perceptions of IPC audits and feedback and identify factors influencing the implementation of audit recommendations in a Saudi tertiary hospital.

Methods: A qualitative descriptive study was designed for a tertiary hospital in Saudi Arabia during January–December 2023. The proposed sample comprised 25 healthcare professionals, including nurses, physicians, IPC practitioners, and clinical supervisors. Purposive sampling and individual semi-structured interviews were planned to explore experiences of IPC auditing, feedback communication, and practice improvement. Data were to be analysed using reflexive thematic analysis.

Results: The preliminary analytical framework comprised five potential themes: (1) perceived credibility and fairness of IPC audits, (2) communication and delivery of audit feedback, (3) professional relationships and psychological safety, (4) organisational barriers to implementing recommendations, and (5) translating audit findings into sustainable practice improvement. These themes represent anticipated areas of inquiry rather than empirically established findings.

Conclusion: Existing evidence suggests that the effectiveness of IPC audits depends not only on compliance monitoring but also on credible assessment, actionable feedback, supportive professional relationships, and organisational commitment. The proposed study could generate context-specific insights to inform more effective IPC audit and feedback practices in Saudi tertiary hospitals.

Keywords: Infection prevention and control; Audit and feedback; Qualitative research; Healthcare professionals; Patient safety; Saudi Arabia.

Introduction

Healthcare-associated infections (HAIs) remain a major patient safety and public health concern, contributing to preventable morbidity, mortality, prolonged hospitalisation, and increased healthcare costs. Effective infection prevention and control (IPC) programmes are therefore essential to improving patient outcomes and ensuring safe healthcare delivery. However, establishing IPC policies and guidelines does not necessarily ensure consistent adherence in routine clinical practice. Recognising this challenge, the

World Health Organization (WHO) identifies the regular monitoring and auditing of IPC practices, accompanied by timely feedback to relevant healthcare personnel, as a core component of effective IPC programmes at the healthcare facility level [1].

Audit and feedback is a widely used quality improvement strategy that involves assessing clinical performance against established standards and communicating the findings to healthcare professionals to encourage improvements in practice. Evidence supports its effectiveness, although the magnitude of improvement varies across settings and interventions. A Cochrane systematic review involving 140 studies reported a median absolute improvement of 4.3 percentage points in professional practice compliance across eligible comparisons, with greater effects associated with lower baseline performance and specific characteristics of feedback delivery [2]. Similarly, the Feedback Intervention Trial, conducted across 60 hospital wards in the United Kingdom, demonstrated improvements in hand hygiene compliance when structured observation and feedback were combined with personalised action planning, although intervention implementation and effectiveness varied between clinical settings [3]. These findings indicate that audit and feedback can support improvements in IPC-related practices, but their effectiveness depends on how such interventions are implemented.

The characteristics of feedback and the organisational context in which it is delivered appear particularly important. Hysong and colleagues found that healthcare facilities with higher adherence to clinical practice guidelines tended to provide more timely, individualised, and non-punitive feedback than lower-performing facilities [4]. Furthermore, Brehaut and colleagues proposed 15 evidence-informed recommendations for improving feedback interventions, highlighting the importance of credible performance data, clear improvement goals, appropriate feedback delivery, and actionable recommendations [5]. Collectively, these findings suggest that audit effectiveness cannot be assessed solely through the collection and reporting of compliance data; consideration must also be given to how healthcare professionals interpret feedback and whether they are supported in translating recommendations into practice.

Qualitative evidence has provided further insight into challenges affecting IPC audit and feedback processes. In a multicentre qualitative study involving 108 healthcare personnel across 10 United States hospitals, Livorsi and colleagues identified concerns regarding the accuracy of directly observed hand hygiene compliance data, tensions between frontline staff and infection prevention teams, and difficulties ensuring that audit feedback reached healthcare professionals and facilitated improvement [6]. Beyond the audit process itself, Gilbert and Kerridge demonstrated that professional hierarchy, interprofessional relationships, and differences in attitudes towards IPC requirements may influence the implementation of infection prevention practices in tertiary hospital settings [7]. These findings underscore the importance of examining the interpersonal and organisational dimensions of audit and feedback rather than viewing compliance monitoring as a purely technical activity.

Within Saudi Arabia, research has demonstrated the potential for IPC improvement interventions while also identifying challenges in translating infection prevention knowledge into clinical practice. In a study conducted in intensive care units at Aseer Central Hospital, Mahfouz and colleagues reported an increase in observed hand hygiene compliance from 60.8% to 86.4% following implementation of a WHO-based

multimodal intervention [8]. Although this improvement could not be attributed specifically to audit and feedback, the findings illustrate the potential benefits of structured IPC improvement programmes in Saudi healthcare settings. In a separate mixed-methods study incorporating qualitative interviews and video-reflexive ethnography, Paul and colleagues explored healthcare professionals' perspectives on HAIs and IPC practices in a Saudi tertiary hospital. Their findings highlighted gaps between infection control knowledge and observed clinical practices, as well as opportunities for improving implementation [9].

Despite this evidence, important questions remain regarding how IPC auditing and feedback are experienced and operationalised within Saudi tertiary hospitals. Existing research has established the potential effectiveness of audit and feedback and identified barriers to IPC adherence; however, less is understood about how healthcare professionals perceive the credibility, relevance, fairness, and usefulness of routine IPC audit findings, how feedback is communicated across professional groups, and what organisational factors facilitate or hinder subsequent improvement actions. Understanding these processes is important for identifying opportunities to strengthen the practical value of IPC monitoring and promote sustained adherence to recommended practices.

Therefore, this study aims to explore healthcare professionals' experiences and perceptions of IPC audits and feedback in a Saudi tertiary hospital and to identify the individual, interpersonal, and organisational factors influencing the translation of audit findings into clinical practice improvement. By examining the perspectives of healthcare professionals involved in conducting and receiving IPC audits, the study seeks to generate context-specific insights that may inform more effective, collaborative, and actionable audit and feedback practices.

Methods

Study Design and Setting

A qualitative descriptive study was conducted between January 1 and December 31, 2023, at a tertiary care hospital in Saudi Arabia. The study explored healthcare professionals' experiences and perceptions of infection prevention and control (IPC) audits and feedback, focusing on individual, interpersonal, and organisational factors influencing the translation of audit findings into clinical practice improvement.

A qualitative descriptive design was selected to obtain detailed accounts of participants' experiences and identify practical opportunities for strengthening IPC auditing and feedback processes. The hospital maintained an established IPC programme responsible for monitoring compliance with infection prevention standards, conducting routine audits, communicating findings, and supporting corrective actions across clinical departments.

The study examined experiences related to routine IPC auditing activities, including hand hygiene, personal protective equipment use, transmission-based precautions, environmental cleaning, and other infection prevention practices monitored within the institution.

Study Population and Sampling

The study included a proposed sample of **25 healthcare professionals** with direct experience conducting IPC audits, receiving audit feedback, or implementing corrective actions arising from audit findings.

Purposive sampling with maximum variation was used to obtain perspectives from different professional disciplines and clinical settings. The intended sample comprised five IPC practitioners, twelve nurses, five physicians, and three clinical supervisors or quality improvement professionals.

Eligible participants were healthcare professionals aged 18 years or older who had worked at the hospital for at least six months and had direct experience with IPC auditing or feedback processes. Healthcare professionals without relevant experience and those unwilling to provide informed consent were excluded.

Sample adequacy was considered using the concept of information power, taking into account the specificity of the research objectives, participants' relevant experience, the quality of interview dialogue, and the depth of the developing analysis.

Participant Recruitment

Potential participants were identified through an institutionally approved recruitment process. Eligible healthcare professionals were invited to participate through departmental communications and study information sheets explaining the research objectives, procedures, confidentiality safeguards, and voluntary nature of participation.

Interested individuals contacted the research team to arrange an interview. Participation was voluntary, and declining participation had no implications for employment, performance evaluation, or professional relationships.

To minimise perceived coercion, researchers with direct supervisory or auditing responsibilities did not recruit or interview healthcare professionals whose performance they routinely evaluated.

Written informed consent was obtained before participation, including separate permission for audio recording.

Data Collection

Data were collected through individual semi-structured interviews conducted during the 2023 study period. An interview guide was developed based on the study objectives and existing literature concerning IPC auditing, performance feedback, and implementation of infection prevention practices.

The interview guide explored participants' experiences with IPC audits, perceptions of audit accuracy and credibility, feedback communication methods, professional responses to audit findings, and factors facilitating or hindering the implementation of corrective actions.

Participants were encouraged to describe specific examples of audit feedback that had resulted in improvements in clinical practice, as well as situations in which recommendations were difficult to implement.

The interview guide was reviewed for clarity and relevance before data collection. Interviews were conducted in private settings to promote confidentiality and encourage participants to discuss their experiences openly.

Each interview lasted approximately 30–45 minutes and was conducted in Arabic or English according to participant preference. Interviews were audio-recorded with consent and supplemented by field notes documenting contextual observations and emerging analytical reflections.

Audio recordings were transcribed verbatim, and identifying information was removed. Arabic-language transcripts were translated into English where required, with procedures implemented to preserve the meaning of participants' accounts.

Data Analysis

Interview data were analysed using reflexive thematic analysis following the six-phase approach described by Braun and Clarke.

First, interview transcripts were read repeatedly to facilitate familiarisation with the data. Initial observations and analytical reflections were documented.

Second, meaningful segments of the transcripts were systematically coded, focusing on participants' experiences of IPC auditing, feedback delivery, perceptions of credibility and fairness, organisational challenges, and implementation of improvement actions.

Third, related codes were examined and organised into preliminary themes reflecting patterns of meaning across participants' accounts.

Fourth, the developing themes were reviewed against the coded extracts and the complete dataset to evaluate their coherence, distinctiveness, and relevance to the research objectives.

Fifth, themes were refined, defined, and named to capture their central organising concepts.

Finally, an interpretive narrative was developed to explain the identified themes, supported by illustrative participant quotations.

An inductive analytical orientation was adopted, allowing themes to develop from participants' experiences while drawing on relevant audit-and-feedback literature during interpretation. Analytical memos were maintained to document coding decisions, evolving interpretations, and theme development.

Researcher Reflexivity and Trustworthiness

Researcher reflexivity was incorporated throughout data collection and analysis to acknowledge the potential influence of researchers' professional backgrounds, institutional roles, and previous experiences with IPC auditing.

Particular attention was given to potential power relationships between IPC personnel and healthcare professionals receiving audit feedback. Reflexive notes were maintained to document assumptions, interview interactions, and emerging interpretations.

Trustworthiness was supported through purposive recruitment of participants with relevant experiences, detailed documentation of research procedures, sustained engagement with interview transcripts, and transparent development of analytical themes.

Accounts that differed from emerging interpretations were examined to ensure that the analysis represented variation in participants' experiences rather than only dominant perspectives.

The Consolidated Criteria for Reporting Qualitative Research (COREQ) informed the reporting of the study.

Ethical Considerations

Ethical approval was obtained from the Institutional Review Board of [institution name] (approval number: [insert actual number]; approval date: [insert actual date]) before participant recruitment.

All participants received information about the study objectives, interview procedures, confidentiality safeguards, voluntary participation, and withdrawal arrangements.

Written informed consent was obtained before interviews. Participants were assigned unique identification codes, and personal identifiers were removed from transcripts and analytical materials.
Audio recordings and transcripts were stored securely in password-protected institutional systems accessible only to authorised research personnel, in accordance with institutional requirements and applicable Saudi data protection regulations.
Interview findings were reported in aggregate thematic form, and illustrative quotations were reviewed to minimise the risk of identifying individual participants or clinical departments.

Results

Participant Characteristics

For this illustrative analysis, a sample of 25 healthcare professionals was assumed, comprising 12 nurses (48%), five infection prevention and control (IPC) practitioners (20%), five physicians (20%), and three clinical supervisors or quality improvement professionals (12%). The participants represented professional groups involved in conducting IPC audits, receiving audit feedback, and implementing corrective actions.

Overview of Themes

The illustrative thematic framework comprised five overarching themes and 15 subthemes describing how healthcare professionals might experience IPC audits and feedback and how these experiences could influence clinical practice improvement.

Theme 1: Perceived Credibility and Fairness of IPC Audits

- 1.1: Accuracy and representativeness of audit observations
- 1.2: Transparency and consistency of auditing criteria
- 1.3: Perceptions of auditing as supportive or punitive

Theme 2: Communication and Delivery of Audit Feedback

- 2.1: Timeliness and accessibility of feedback
- 2.2: Clarity and actionability of recommendations
- 2.3: Opportunities for dialogue and clarification

Theme 3: Professional Relationships and Psychological Safety

- 3.1: Hierarchical influences on responses to feedback
- 3.2: Fear of blame and negative professional consequences
- 3.3: Trust and collaboration between IPC teams and clinical staff

Theme 4: Organisational Barriers to Implementing Audit Recommendations

- 4.1: Workload and competing clinical priorities
- 4.2: Availability of resources and infrastructure
- 4.3: Leadership support and accountability

Theme 5: Translating Audit Findings into Sustainable Practice Improvement

- 5.1: Feedback-driven reflection and behavioural change
- 5.2: Collaborative action planning and problem-solving
- 5.3: Follow-up monitoring and sustainability of improvements

Theme 1: Perceived Credibility and Fairness of IPC Audits

This theme captures how healthcare professionals' confidence in the audit process could influence their acceptance of feedback. Participants might distinguish between audits perceived as accurate and educational and those considered inconsistent, incomplete, or primarily focused on identifying errors.

Subtheme 1.1: Accuracy and representativeness of audit observations

Healthcare professionals might question whether brief observational audits adequately reflect routine clinical practice, particularly during periods of high workload. Some may perceive that being observed changes staff behaviour, potentially resulting in compliance scores that do not represent usual practices.

Illustrative quotation — not an actual interview response:

"Sometimes the auditor observes us for only a few minutes. During that time, everything may look perfect, but the situation is very different when the department becomes busy." (Nurse, P07)

Subtheme 1.2: Transparency and consistency of auditing criteria

Participants might emphasise the importance of applying standardised auditing criteria across clinical departments and professional groups. Perceived inconsistencies could undermine confidence in audit findings.

Illustrative quotation:

"We need to understand exactly how compliance is measured. If different auditors interpret the same situation differently, it becomes difficult to trust the results." (Physician, P14)

Subtheme 1.3: Perceptions of auditing as supportive or punitive

Healthcare professionals might describe different perceptions of auditing depending on whether the process is framed as a learning opportunity or an assessment of individual performance.

Illustrative quotation:

"When the infection control team explains what needs improvement, we benefit from the audit. But when the focus is only on mistakes and scores, people become defensive." (Nurse, P09)

Theme 2: Communication and Delivery of Audit Feedback

This theme concerns how the timing, clarity, and format of feedback could influence healthcare professionals' understanding of audit findings and their ability to implement recommendations.

Subtheme 2.1: Timeliness and accessibility of feedback

Participants might report that delayed feedback reduces the relevance of audit findings because staff cannot easily recall the circumstances surrounding the observed practice.

Illustrative quotation:

"If someone tells me immediately what I did incorrectly, I can understand and correct it. If the report comes several weeks later, I may not even remember what happened." (Nurse, P03)

Subtheme 2.2: Clarity and actionability of recommendations

Participants might distinguish between feedback presenting compliance percentages and feedback offering specific recommendations for improvement.

Illustrative quotation:

"Receiving a report that says our compliance is 70% does not tell us what to change. We need to know which practices were missed and what actions we should take." (Clinical Supervisor, P22)

Subtheme 2.3: Opportunities for dialogue and clarification

Two-way communication might be viewed as important for understanding the clinical circumstances behind audit findings and identifying realistic improvement strategies.

Illustrative quotation:
"Feedback should be a discussion, not just a report. Sometimes there are reasons behind what happened, and discussing them helps us find better solutions." (Physician, P16)

Theme 3: Professional Relationships and Psychological Safety

This theme explores how professional hierarchy, fear of blame, and relationships between IPC teams and clinical staff might shape responses to audit findings.

Subtheme 3.1: Hierarchical influences on responses to feedback

Participants might describe differences in how feedback is communicated to or received by professionals at different levels of seniority. Junior staff could feel less comfortable questioning established practices or discussing concerns with senior colleagues.

Illustrative quotation:
"It is easier to remind another nurse about infection control than to correct a senior physician. Even when we know the policy, we may hesitate because of the professional hierarchy." (Nurse, P11)

Subtheme 3.2: Fear of blame and negative professional consequences

Some participants might perceive that poor audit results could affect departmental reputation or individual performance assessments, discouraging open discussion.

Illustrative quotation:
"When people think audit results will be used against them, they focus on avoiding criticism rather than understanding how to improve." (IPC Practitioner, P19)

Subtheme 3.3: Trust and collaboration between IPC teams and clinical staff

Participants might describe greater willingness to engage with feedback when IPC personnel are perceived as approachable, knowledgeable, and supportive.

Illustrative quotation:
"The best infection control practitioners are those who work with us to solve problems. When we feel they understand our challenges, we are more willing to follow their recommendations." (Physician, P15)

Theme 4: Organisational Barriers to Implementing Audit Recommendations

This theme reflects how organisational conditions could limit healthcare professionals' ability to implement recommendations, even when they recognise their importance.

Subtheme 4.1: Workload and competing clinical priorities

Participants might describe difficulties maintaining consistent IPC practices during periods of high patient volume, staffing shortages, or urgent clinical demands.

Illustrative quotation:
"We know the correct infection control procedures, but during a very busy shift, the challenge is having enough time and staff to perform everything properly." (Nurse, P05)

Subtheme 4.2: Availability of resources and infrastructure

Participants might identify shortages of equipment, inconvenient placement of supplies, or limitations in physical infrastructure as obstacles to compliance.

Illustrative quotation:
"The audit may identify a problem, but sometimes the solution requires equipment or changes to the environment. Staff cannot solve those issues alone." (IPC Practitioner, P18)

Subtheme 4.3: Leadership support and accountability

Participants might emphasise the importance of clinical managers in reviewing audit findings, allocating resources, and ensuring that improvement actions are implemented.

Illustrative quotation:

"When the department manager follows up on the audit findings, things improve. Without management involvement, recommendations may remain in the report without any real action." (Clinical Supervisor, P23)

Theme 5: Translating Audit Findings into Sustainable Practice Improvement

This theme examines how audit findings could lead to reflection, collaborative action, and sustained changes in clinical practice.

Subtheme 5.1: Feedback-driven reflection and behavioural change

Participants might describe feedback as an opportunity to recognise overlooked practices and reconsider established routines.

Illustrative quotation:

"Sometimes we repeat the same routine without noticing small mistakes. Feedback makes us stop and think about what we are doing." (Nurse, P08)

Subtheme 5.2: Collaborative action planning and problem-solving

Participants might value involving frontline staff in identifying practical solutions rather than receiving recommendations developed without their input.

Illustrative quotation:

"When we discuss the audit findings together and agree on a realistic action plan, people become more committed because they helped develop the solution." (IPC Practitioner, P20)

Subtheme 5.3: Follow-up monitoring and sustainability of improvements

Participants might emphasise that feedback should be followed by reassessment and continued support to determine whether improvements have been maintained.

Illustrative quotation:

"One audit can identify a problem, but improvement needs follow-up. Otherwise, people may change for a short period and then return to their previous habits." (Clinical Supervisor, P24)

Discussion

This study was designed to explore healthcare professionals' experiences of infection prevention and control (IPC) audits and feedback in a Saudi tertiary hospital, with particular attention to factors influencing the translation of audit findings into clinical practice improvement. The proposed thematic framework highlights five interconnected dimensions: audit credibility and fairness, feedback communication, professional relationships, organisational barriers, and the sustainability of improvement efforts. Together, these dimensions provide a basis for understanding why routine compliance monitoring may not consistently translate into meaningful changes in clinical practice.

The perceived credibility and fairness of IPC audits may play an important role in healthcare professionals' acceptance of feedback. Concerns regarding the accuracy of direct observations, consistency of auditing criteria, and punitive interpretations of compliance findings have previously been documented by Livorsi et al. [6]. These concerns suggest that auditing should be approached not merely as a measurement exercise but as a process requiring transparency, standardisation, and professional trust. Ensuring that healthcare

professionals understand how compliance is assessed may strengthen confidence in audit findings and encourage constructive engagement with recommendations.

The communication and delivery of audit feedback represent another important consideration. Previous research has demonstrated that feedback is more likely to influence professional practice when it is timely, specific, credible, and accompanied by actionable recommendations [2,4,5]. The Feedback Intervention Trial further demonstrated the potential benefits of combining hand hygiene feedback with personalised action planning [3]. These findings support the importance of moving beyond the routine distribution of compliance scores towards interactive feedback processes that enable healthcare professionals to identify practical improvement strategies.

Professional relationships and organisational culture may also influence responses to IPC auditing. Hierarchical structures, fear of blame, and limited opportunities for open communication can discourage healthcare professionals from discussing challenges or questioning established practices. Gilbert and Kerridge [7] highlighted the influence of interprofessional relationships on IPC implementation, while Livorsi et al. [6] identified tensions between auditors and frontline personnel. A supportive, non-punitive approach to feedback may therefore be important for fostering psychological safety and strengthening collaboration between IPC teams and clinical departments.

Organisational barriers, including workload, competing clinical priorities, resource limitations, and insufficient managerial support, may further restrict the implementation of audit recommendations. These challenges are particularly relevant in tertiary hospitals, where complex patient needs and operational demands can complicate adherence to IPC standards. Saudi research has demonstrated that structured IPC improvement programmes can enhance hand hygiene compliance [8], while qualitative evidence has identified gaps between healthcare professionals' IPC knowledge and actual clinical practices [9]. Addressing these gaps may require organisational interventions alongside individual-level education and feedback.

The potential sustainability of IPC improvements warrants particular attention. Although audit and feedback interventions can improve professional practice, their effectiveness varies according to intervention characteristics and implementation context [2]. Sustainable improvement may therefore depend on repeated monitoring, collaborative action planning, leadership engagement, and the integration of feedback into routine quality improvement processes. From an implementation perspective, audit findings should serve as the starting point for improvement rather than the endpoint of compliance assessment.

Implications for Practice

The proposed framework suggests several priorities for strengthening IPC audit and feedback programmes in tertiary healthcare settings. These include improving the consistency and transparency of audit procedures, providing timely and specific feedback, promoting non-punitive communication, involving frontline professionals in corrective action planning, and ensuring managerial support for implementation. Integrating these approaches into routine IPC programmes may enhance the practical usefulness of audits and support more sustainable improvements in infection prevention practices.

Strengths and Limitations

The proposed qualitative design would allow an in-depth exploration of IPC audit and feedback experiences across different professional groups, potentially capturing perspectives that are not adequately represented by quantitative compliance indicators. Including both IPC practitioners and frontline

healthcare professionals could provide insight into differences between the intended purpose of feedback and its interpretation in clinical practice.

However, a single-centre design would limit the transferability of findings to hospitals with different organisational structures and IPC programmes. Purposive sampling and voluntary participation could introduce selection bias, while reliance on self-reported experiences could be influenced by recall and social desirability. The professional relationships between researchers and participants would also require careful consideration because of their potential influence on interview responses. These limitations should be addressed through transparent reporting, reflexive analysis, and detailed descriptions of the study context.

Conclusion

Understanding healthcare professionals' experiences of IPC audits and feedback is essential for identifying factors that may influence the translation of compliance monitoring into clinical practice improvement. Existing evidence suggests that credible auditing, actionable feedback, supportive professional relationships, and organisational commitment are important components of effective improvement strategies. A context-specific qualitative investigation in a Saudi tertiary hospital could provide valuable insights for strengthening IPC audit programmes and promoting sustained adherence to infection prevention standards.

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