

Managerial Challenges in the Clinical Use of Checklists: Proven Benefits, Yet Untapped Potential?

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Purpose: Research shows that surgical safety checklists can reduce adverse events in hospitals, but their real-world effectiveness varies due to inconsistent implementation. This study investigates managerial barriers to effective checklist use across surgical subspecialties, focusing on factors like organisational structure, workplace culture, and staff attitudes. Patient safety is a shared responsibility, yet differences in priorities and communication between system-level and frontline management can hinder safety efforts. Theories such as high reliability and complex adaptive systems highlight the importance of feedback and alignment between strategic goals and operational realities.

Methods: Using semi-structured interviews at two Norwegian university hospitals, the study explores perceptions of checklist use among section and clinic managers. Nine participants, representing both nursing and medical backgrounds, provided insights into the challenges of integrating checklists into daily practice. The data were analysed to identify barriers and their underlying causes, aiming to inform strategies for improving checklist implementation and patient safety outcomes.

Results: This evaluation of surgical safety checklist practices reveals a significant gap between policy and practice. While the checklist is widely accepted and integrated into routine surgical workflows, its actual use is rarely monitored or discussed across managerial levels. Senior managers often assume compliance without verification, and checklist non-compliance is seldom reported through formal deviation systems. Communication about checklist use is fragmented, and key elements—such as the team presentation round—are frequently overlooked. The checklist is treated more as a static tool than as part of a dynamic safety system. Systemic barriers, including competing priorities and limited feedback mechanisms, hinder its effective use.

Conclusion: To enhance patient safety, hospitals must adopt a more adaptive and reflective safety culture, integrating checklist use into broader governance frameworks and establishing mechanisms for monitoring, feedback, and continuous learning.

Keywords: safe surgery checklist, patient safety, safety management

Introduction

A substantial and growing body of research indicates that the use of checklists in clinical settings can significantly reduce the number of adverse events associated with surgical procedures in hospitals.^{1–6} These efficacy studies demonstrate that checklists can have positive and desirable effects.

However, efficacy studies are typically conducted under highly controlled conditions.⁷ It has been noted that the implementation and use of checklists vary across institutions and departments. For instance, frontline personnel report that checklist usage is heavily influenced by the level of engagement from clinical managers.⁸ Therefore, the effectiveness of checklists, defined as their impact under real-world conditions, may still have room for improvement.⁹

This survey aims to identify managerial challenges that hinder the effective use of checklists. These challenges, referred to here as barriers, will be examined within the context of clinical activities across various surgical subspecialties. Each identified barrier will be analysed in relation to organisational structure, workplace culture, staff attitudes, knowledge gaps and other factors potentially within managerial control.

Literature Review

Even though several studies have demonstrated the potential of using checklist in surgical practice, we still lack through knowledge on barriers to an effective use of them. Some barriers have been described in other studies.^{10,11} In addition to lacking education and training, factors as hierarchy, increasing work load, fear of delays, concerns about raising anxiety of patients and the risk of developing a “tick-box exercise” have been suggested as important barriers.¹¹ The role of the managers and leaders on different levels and organisational aspects have scarcely been studied.

Patient safety is a shared responsibility among employees and managers at all levels within hospitals. However, differences in how patient safety is approached across organisational levels have been observed. Several factors may contribute to these discrepancies, including challenges in communication and reporting between hierarchical levels.¹²

One explanation may lie in the differing priorities at various management levels. System-level management, often associated with budgeting and strategic oversight, typically operates at the top of the organisational hierarchy. In contrast, operational or frontline management is situated closer to clinical staff and patients, focusing on day-to-day activities.¹³

Organisational strategies for safety and risk management vary widely. Some emphasise system-level structures and managerial frameworks – a perspective central to high reliability theory.¹⁴ This theory assumes that robust safety governance will lead to safe operations. However, a critical question is how these strategies are implemented in practice by those responsible for executing daily tasks. Misalignment between strategic intentions and operational realities can increase the risk of adverse events.

This challenge echoes the classic concerns raised by Charles Perrow back in 1984 and was notably analysed in the aftermath of the Columbia space shuttle disaster where a disconnect between system-level oversight and frontline operations had catastrophic consequences.^{15,16}

A potential bridge between these perspectives may be found in the theory of complex adaptive systems, which emphasises feedback, self-organisation and non-linear dynamics.¹⁷ These characteristics are particularly relevant to the “sharp end” of hospital operations, where clinical leaders must constantly prioritise and adapt to shifting demands, especially in high-pressure environments like operating theatres where emergencies often disrupt planned activities.

From a complex adaptive systems perspective, the processes of giving and receiving feedback between managerial levels become especially important. This aligns with systems thinking in safety governance, particularly the emphasis on feedback loops. Leveson argues that not only must lower-level controllers understand their roles and responsibilities, but senior managers and decision-makers must also be actively engaged and informed.¹⁸

Methods

To explore the underlying perceptions and motivations behind the use of checklists in clinical practice, a qualitative research design was chosen, utilising semi-structured interviews.¹⁹ The questions posed were quite open. Three main entries in the interviews were: What do you know about the use of checklists in your department? How do you follow up the use of them? What do you know about barriers for using them? Based on these three entries the interviewees were free to comment. Every interview lasted between 30 and 40 minutes. The interviews were performed during spring 2023.

The interviews were conducted at two of Norway’s six officially designated university hospitals. Both institutions serve as teaching hospitals for nursing and medical students and possess broad expertise across a wide range of surgical specialties. They perform a high volume of elective surgeries and play a central role in emergency and trauma care. Additionally, both hospitals are closely linked to research and educational activities related to surgical practice.

Participants and Consent

Participants were strategically selected from among section managers and clinic managers – those in direct leadership roles over departments where surgical safety checklists have been implemented, as well as their immediate superiors. In this study section managers are defined as leaders closely involved in clinical operations, overseeing the daily work of frontline staff such as nurses and physicians. Clinic managers operate at the next hierarchical level and report directly to the hospital’s chief executive officer.

Six interviews were performed: three with two persons and three with one person present. In total nine persons took part, five of whom were women and four men. Five were educated nurses and four physicians. One was under 40 years old, four in the age group 40–49, two in the 50–59 group and two over 60 years old. Participation was voluntary. Invitations were sent via Email and informed consent was obtained both in writing (via email) and orally at the start of each interview.

Written notes from the interviews were presented for comments from the interviewees, which led to only minor adjustments. The interviews were performed in Norwegian. The written notes from the interviews were analysed in the Norwegian version and the citations to be used in the article here were translated into English.

Data Collection and Analysis

Interview notes formed the basis for a content analysis aimed at identifying barriers to effective checklist use in clinical settings, as well as uncovering participants' perceptions of the causal mechanisms underlying these barriers. Participants were given the opportunity to review and comment on the written summaries of their interviews, which resulted in only minor revisions.

Ethical Considerations

As this was planned and performed as an organizational study, the project was conducted in accordance with the ethical guidelines for research in the social sciences and humanities.²⁰ It complied fully with the Norwegian Data Protection Act and the General Data Protection Regulation (GDPR) of EU.²¹ No data of special categories were processed, cf. article 9 in GDPR. Thus, no sensitive personal data were collected or processed and no information related to identifiable patients or individuals was included. The participation and subsequent publication of anonymized responses were based upon consent, cf. article 7 in GDPR. The study was approved legally and ethically by the clinical managers of the participating departments according to local procedures and national legislation. Therefore, based on applicable legal and ethical standards as mentioned above, there was no requirement for external ethical approval.

Limitations

It can be questioned that the number of interviewees may be too low for the findings to be representative. However, all managers at both levels were managers with extensive experience and good knowledge of the relevant topics. The managers from both management levels came up with highly identical answers and facts regarding the relevant topics. The study thus appeared to reach a satisfactory level of saturation for a qualitative study. We therefore believe that the findings can be defended as relevant contributions to a widened understanding of barriers to the use of surgical checklists.

Results

Based on an analysis of the written interview summaries, several key themes emerged that help explain managerial aspects related to the use of surgical safety checklists. These are detailed immediately below.

Patient Safety

All interviewees described surgical safety checklists as a well-integrated tool that is widely accepted as standard practice. Managers at various levels considered their use self-evident. Typical expressions were:

Everybody takes part in the reading of the list.

We seldom notice that anyone doesn't listen to the reading of the list.

In the beginning the problems were greater. It was then considered the duty of the anaesthetic nurse.

However, there was little evidence of systematic monitoring or documentation of checklist use. Moreover, few managers, particularly at higher levels, appeared to take initiative in evaluating or updating the checklists. It was therefore difficult to assess how strongly managers actually associated checklist use with patient safety outcomes.

Typically, this was expressed as:

The practice is surely founded on a managerial level, but not really followed up.

The use is just regarded as self-evident.

Deviation Reporting

Every Norwegian health care provider is by law required to have an internal system for employees to report deviations and non-conformities with legal requirements, professional standards and internal procedures. These reports are expected to be evaluated and if necessary followed up by managers and leaders at appropriate levels.

Checklist non-compliance, whether incomplete or entirely absent, did not appear to be routinely reported through the hospitals' formal deviation reporting systems. Managers at both levels expressed uncertainty about whether such failures should be classified as deviations at all. However, the use of the list is documented in the electronic operation protocol, as reflected in the below:

The use of the check list is marked in the protocol.

However, deviations from the list are not noted or reported.

It may occasionally be mentioned as a general reminder in routine meetings.

In one of the interviews, it was noted that not making use of the list was once reported as a formal deviation, which lead to follow-up regarding the concerned individual.

Several senior managers believed that checklist use had received increasing attention after the initial implementation phase, and that it has since become routine. However, there was little indication that the completeness or quality of checklist use was being actively monitored or followed up.

Communication

Surgical safety checklists were not a topic of discussion in management meetings, not at the top level nor between top-level and mid-level managers, and also not between mid-level managers and those closest to frontline staff. It appeared that each managerial level had different priorities regarding patient safety, and that assumptions were made about checklist use without verification. Nonetheless they all confirmed that they were aware of potential areas for improvement regarding the use of the checklist.

It may be difficult to place the responsibility for performing Phase 1.

The surgeon is often not present in the initial phase.

One may be short of time and therefore does not spend enough time on the list.

The plan sketched in Phase 3 is not communicated to those responsible for following up.

There may be discrepancies from what is said in phase 3 on following up and what the surgeon subsequently describes in the patient files.

There are great differences between different clinical departments.

Senior managers generally assumed that checklists were still in use as intended, based on the belief that initial resistance had faded. However, there was no indication that checklist use, or related challenges, were considered relevant or timely topics for discussion in cross-level management forums. In fact, it seemed that few managers had reflected on these issues at all.

There was also no evidence that senior leadership was actively involved in the implementation or follow-up of checklist use, nor that they systematically collected information about potential barriers to their effective use.

The Presentation Round

This part of the checklist process, where team members introduce themselves before surgery, was not emphasised by managers at any level.

We often hear that the presentation round at the beginning is not done.

Some believed it was only performed when new participants were present, such as students or visiting colleagues. Overall, it appeared to be a low-priority element that had received little managerial attention.

In general, managers noted that they had not observed any particular challenges related to gender or professional roles during this part of the process.

There is no difference between females and males, in particular among the younger generations.

Even the older surgeons now use the list!

Discussion

Checklist Use and Managerial Perceptions

The World Health Organization Safe Surgery Checklist, introduced in 2009, was designed to reduce surgical complications and mortality while also promoting effective communication and shared situational awareness among surgical teams.^{6,22} Despite its proven efficacy, our findings suggest possible areas for improvement in order to increase its integration into hospital practice that can be influenced by managers at different levels.

Managers at the operational level demonstrated a practical focus on checklist use, often referencing specific items. In contrast, senior managers tended to view checklist implementation as a completed task, embedded in policy documents and action plans, without actively monitoring its use. This assumption of compliance, without verification, may reflect a broader issue of “work as imagined” versus “work as done”.²³

Fragmentation and Lack of Integration

The checklist was rarely discussed as a holistic tool or as an integral part of broader patient safety strategies. Instead, managers often highlighted isolated checklist elements, suggesting a fragmented understanding of its purpose. The link between checklist use and systematic quality improvement efforts appeared weak or absent. This disconnect may hinder the checklist’s potential to contribute meaningfully to a culture of safety.

Moreover, the role of the manager seemed to influence engagement. When clinical managers also participated in surgical procedures, checklist use was more likely to be prioritised. This suggests that proximity to clinical work may enhance awareness and accountability, while distance may foster complacency.

Deviation Reporting and Feedback Mechanisms

One of the more surprising findings was the limited use of formal deviation reporting systems in relation to checklist compliance. Despite being a key mechanism for identifying and addressing safety issues, checklist non-compliance was not typically reported as a deviation. This omission may reflect uncertainty about whether such incidents qualify as reportable events or may indicate a lack of awareness about the potential consequences of non-use. It may also signify that deviations in the provision of care are more related to unexpected outcomes than to non-compliance with given standards. In a sound risk governance system, also non-compliance should be monitored and not merely addressed by managers at different levels but also made topics for communication between managers at different levels. Often incidents and unexpected outcomes are made visible on the agendas of the managers, however non-compliance with standards are not given the same attention.

Equally concerning is the absence of structured feedback systems to monitor checklist use. Given the strong evidence supporting the efficacy of checklists, the lack of follow-up mechanisms raises critical questions about organisational learning and accountability. Without feedback loops, deviations may go unnoticed and opportunities for improvement may be lost.

Systemic Barriers and Competing Priorities

The findings also point to broader systemic challenges. Managers face competing demands, including economic efficiency, resource constraints and administrative burdens. These pressures may limit their capacity to engage deeply with safety tools such as checklists.

Several questions arise about how organisations can balance these competing goals: (a) How can risk assessments (eg HAZIDs) be used to navigate conflicting priorities? (b) To what extent do economic considerations shape the implementation and follow-up of safety initiatives? (c) Are new tools introduced systematically or do they emerge through ad hoc processes?

Questions like these highlight the need for a more deliberate and strategic approach to safety governance.

Towards a More Adaptive and Reflective Safety Culture

The gap between managerial assumptions and frontline realities underscores the importance of adaptive safety models. Theories such as high reliability theory (HRT), complex adaptive systems (CAS) and Leveson's Systems-Theoretic Accident Model and Processes (STAMP) emphasise the need for dynamic feedback, learning and resilience in complex environments.^{15–17}

As of today the list appears to be regarded as a single instrument more than an element in a holistic system for safety governance in hospitals.

In order to move forward organisations must develop control parameters that address not only economic performance but also safety and risk. This includes recognising and reinforcing positive performance, not just reacting to negative outcomes. Prerequisites for this are that managers at various levels have it on their regular agendas and communicate with their managerial colleagues about what this means for the safety of service provision. A shift towards proactive, learning-oriented safety governance is essential for realising the full potential of tools like the Safe Surgery Checklist.

Conclusion

This study highlights the complex and layered nature of checklist implementation in surgical settings, particularly the WHO Safe Surgery Checklist. While the checklist is widely accepted and assumed to be in use, our findings reveal a significant gap between managerial assumptions and actual practice. The lack of systematic monitoring, limited integration into broader patient safety strategies and absence of feedback mechanisms suggests that checklist use is not fully embedded in the organisational culture of safety.

The variation in engagement across managerial levels, where proximity to clinical work appears to influence awareness and prioritisation, underscores the need for stronger alignment between strategic oversight and frontline realities. Furthermore, the underutilisation of deviation reporting systems and the absence of structured feedback loops represent missed opportunities for learning and improvement. This may indicate that risk governance in hospitals still is suboptimal compared with what can be seen in other safety critical activities.

To enhance the effectiveness of safety tools like the Safe Surgery Checklist, healthcare organisations must move beyond compliance-based approaches and foster a culture of continuous learning, reflection and adaptation. This includes developing governance models that recognise both positive and negative safety outcomes and that support dynamic, cross-level communication.

Future efforts should focus on bridging the gap between “work as imagined” and “work as done”, ensuring that safety practices are not only well-intentioned but also well-executed. Integrating insights from HRT, CAS and systems thinking can provide valuable frameworks for designing more resilient and responsive safety systems in healthcare.

Abbreviations

CAS, Complex adaptive systems; HAZID, HAZard IDentification, a method for qualitative risk assessment; HRT, High reliability theory; STAMP, Systems-theoretic accident model and processes.

Data Sharing Statement

Data from interviews are not available due to the limited number of participants.

Ethics Approval and Informed Consent

The project was conferred with the Data protection officer at the hospital where the first author is working. The project was approved by the chiefs of relevant clinics at both hospitals, according to local procedures. The project adhered to Norwegian guidelines for research ethics in the social sciences and the humanities and to Norwegian and European legislation on processing of individual data.^{18,19} No personal data of special categories were processed. As no such data were recorded and no patients or clinical data involved, there was no need for external ethical approvals according to applicable ethical and legal standards.^{20,21} All interviewees gave their written and oral consent for participation.

Consent for Publication

Both authors have read and approved the submitted version and give their consent for publication.

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Disclosure

The authors declare no conflicts of interest in this work.

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