

Interdepartmental Coordination in Hospitals: Strategies for Enhancing Quality, Safety, and Efficiency

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ABSTRACT

Interdepartmental coordination within hospitals is a cornerstone of modern healthcare systems, directly influencing patient safety, care quality, and operational efficiency. Despite advancements in clinical practices and technology, fragmented communication and siloed departmental operations remain major contributors to medical errors, delays, and inefficiencies. This article examines strategies to strengthen coordination across hospital departments—including medicine, nursing, pharmacy, laboratory, radiology, emergency, and surgical units—through an integrative review of recent studies and frameworks. Key strategies identified include enhancing communication through standardized tools and electronic health records, fostering collaborative decision-making via interdisciplinary committees, leveraging digital transformation technologies such as real-time dashboards and teleconsultations, and implementing training programs that build teamwork and leadership capacity. Additionally, Lean and Six Sigma approaches are highlighted as effective methods to streamline processes, reduce duplication, and improve patient flows. The review also discusses barriers such as organizational silos, hierarchical structures, and cultural differences between specialties. Findings underscore that coordinated interdepartmental efforts not only reduce medical errors but also enhance efficiency and patient-centered outcomes. Ultimately, hospitals that invest in structured coordination mechanisms create safer, higher-quality, and more sustainable healthcare systems.

Keywords: *Interdepartmental coordination, hospital efficiency, patient safety, quality improvement, collaboration, healthcare management.*

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1. INTRODUCTION

The complexity of modern healthcare requires hospitals to function as integrated systems in which multiple departments—such as medicine, nursing, pharmacy, laboratory, radiology, emergency, and surgery—collaborate to deliver safe, efficient, and high-quality care. However, despite advances in medical science and technology, the persistence of fragmented communication and siloed departmental practices continues to pose significant challenges for patient outcomes and organizational performance (Manser, 2018). Poor coordination between departments has been identified as a leading cause of medical errors, treatment delays, and inefficiencies that compromise patient safety and increase healthcare costs (World Health Organization [WHO], 2021).

Interdepartmental coordination refers to the processes, structures, and strategies that enable different hospital departments to work collaboratively toward shared goals of quality care, operational efficiency, and patient safety (Körner et al., 2016). Effective coordination is vital for managing complex patient journeys that often require input from multiple specialties, from diagnosis to treatment and follow-up. For example, timely laboratory results are essential for clinical decision-making in emergency and surgical departments, while pharmacy coordination ensures appropriate medication management across care units. The absence of structured collaboration can result in duplicated tests, conflicting treatment plans, or prolonged hospital stays (Bajwa et al., 2022).

Global healthcare reforms increasingly emphasize patient-centered care, which cannot be achieved without strong interdepartmental collaboration (O’Leary et al., 2020). Integrated approaches, such as multidisciplinary team meetings, electronic health records (EHRs), and Lean Six Sigma quality improvement methods, have shown promising results in streamlining workflows and minimizing errors (Côté et al., 2021). Nevertheless, hospitals still face barriers including hierarchical structures, cultural differences between specialties, and limited resources that restrict sustainable collaboration (Willis et al., 2022).

This article aims to explore strategies for enhancing interdepartmental coordination in hospitals, focusing on how communication systems, collaborative decision-making, digital transformation, training, and Lean approaches can improve quality, safety, and efficiency. By synthesizing recent evidence, the study highlights best practices, identifies barriers, and proposes a conceptual framework for achieving sustainable hospital collaboration.

2. LITERATURE REVIEW

Hospitals have historically been organized into specialized departments that function relatively independently, leading to efficiency in expertise but also fragmentation in service delivery. Early studies highlighted the negative impact of poor coordination, including communication breakdowns, delays, and increased medical errors (Manser, 2018). Recent reforms emphasize the need for integrated, patient-centered systems where departments operate collaboratively to achieve holistic care outcomes (O’Leary et al., 2020).

Several frameworks explain the role of interdepartmental collaboration in healthcare. **Systems theory** views hospitals as complex adaptive systems where coordination between parts is essential for overall performance (Körner et al., 2016). **Lean and Six Sigma models** have been applied to streamline processes and reduce variability across departments, showing improvements in quality and safety (D’Andreanmatteo et al., 2018). **Team-based models of care**, such as interdisciplinary rounds and collaborative governance, further emphasize the integration of diverse expertise in decision-making (Zwarenstein et al., 2021).

Communication failures are consistently cited as a leading cause of adverse events in hospitals. Studies demonstrate that standardized communication protocols (e.g., SBAR—Situation, Background, Assessment, Recommendation) and integrated electronic health records (EHRs) significantly reduce coordination errors (Muller et al., 2018). Digital health technologies, including telemedicine and real-time dashboards, are increasingly used to facilitate interdepartmental communication, particularly in emergency and critical care (Côté et al., 2021).

Evidence shows that interdisciplinary teamwork improves patient safety, reduces hospital stays, and enhances satisfaction. Bajwa et al. (2022) found that structured collaboration between medical, nursing, and pharmacy departments was associated with fewer medication errors and improved patient monitoring. Similarly, collaborative case reviews and joint morbidity/mortality conferences have been shown to enhance learning and prevent repeat errors (Willis et al., 2022).

Despite evidence of benefits, hospitals face challenges in achieving sustainable interdepartmental collaboration. Barriers include professional hierarchies, cultural differences among specialties, and limited leadership support (Manser, 2018). Financial and resource constraints further hinder the implementation of integrated technologies and continuous training programs (Ozkaynak et al., 2023). Addressing these barriers requires not only technological investment but also cultural transformation and leadership commitment.

While literature highlights the importance of interdepartmental collaboration, most studies focus on single aspects such as communication or teamwork rather than comprehensive strategies that integrate multiple domains—technology, governance, training, and quality improvement. There is also limited research in low- and middle-income countries, where coordination challenges are exacerbated by resource constraints. This article contributes by synthesizing strategies across domains and proposing an integrative framework tailored for hospitals.

3. METHODOLOGY

This study adopts an integrative literature review approach to examine strategies that enhance interdepartmental coordination in hospitals. The review was conducted between June and August 2025 and followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure transparency and rigor. Electronic databases including **PubMed**, **Scopus**, **Web of Science**, and **Google Scholar** were systematically searched. Search terms combined keywords such as “*interdepartmental coordination*,” “*hospital collaboration*,” “*interprofessional teamwork*,”

“patient safety,” “healthcare efficiency,” and “quality improvement”.

The inclusion criteria comprised peer-reviewed journal articles, systematic reviews, policy reports, and empirical studies published in English between **2016 and 2024**. Studies were included if they addressed interdepartmental collaboration within hospital settings and reported outcomes related to quality, safety, or efficiency. Exclusion criteria eliminated articles focusing on single-department improvements, studies outside healthcare, and non-peer-reviewed materials.

Data from eligible studies were extracted and analyzed thematically, focusing on communication systems, collaborative decision-making, digital transformation, training and leadership development, and Lean or Six Sigma quality improvement initiatives. Findings were synthesized to identify best practices, common challenges, and gaps in the literature. This methodological approach provides a comprehensive evidence base to propose strategies for strengthening hospital-wide coordination and enhancing healthcare delivery.

4. KEY STRATEGIES FOR INTERDEPARTMENTAL COORDINATION

Hospitals require structured strategies to overcome departmental silos and enhance collaboration. The literature highlights several effective approaches—ranging from communication protocols and digital technologies to leadership development and Lean methodologies—that collectively improve quality, safety, and efficiency.

4.1 Enhancing Communication Systems

Effective communication is the foundation of coordination. Standardized tools such as **SBAR (Situation, Background, Assessment, Recommendation)** have demonstrated significant improvements in clarity during patient handoffs (Muller et al., 2018). The use of **integrated electronic health records (EHRs)** ensures that all departments have access to real-time patient data, reducing duplication of tests and treatment errors. Daily interdisciplinary **huddles and joint clinical rounds** foster direct information exchange and help align departmental priorities (O’Leary et al., 2020).



Figure 1. Conceptual Framework for Interdepartmental Coordination

4.2 Collaborative Decision-Making Structures

Hospitals increasingly adopt **interdisciplinary committees** for quality improvement, morbidity and mortality reviews, and patient safety initiatives. These platforms enable representatives from medicine, nursing, pharmacy, laboratory, and radiology to jointly evaluate cases and establish standardized protocols (Willis et al., 2022). Shared governance models empower frontline staff to contribute to decisions, which enhances accountability and cross-departmental trust.

4.3 Technology and Digital Transformation

Technological tools play a transformative role in coordination. **AI-driven dashboards** and **clinical decision-support systems** provide real-time alerts that improve workflow efficiency across departments. Telemedicine has proven particularly valuable in connecting emergency, radiology, and specialty units, especially in resource-limited settings (Côté et al., 2021). Digital platforms also streamline communication between inpatient and outpatient services, ensuring continuity of care.

4.4 Training and Capacity Building

Cross-departmental training initiatives foster a culture of teamwork. **Simulation-based training programs** allow staff from multiple specialties to practice complex clinical scenarios together, improving preparedness for emergencies (Bajwa et al., 2022). Leadership development programs further enhance managers' ability to promote collaboration, resolve conflicts, and sustain interdepartmental initiatives. Hospitals that invest in interprofessional education report higher staff satisfaction and reduced turnover (Zwarenstein et al., 2021).

4.5 Lean and Quality Improvement Approaches

Lean and Six Sigma methodologies are increasingly applied to reduce inefficiencies across departments. **Process mapping** helps visualize patient journeys across multiple departments, identifying redundancies and bottlenecks. For instance, implementing Lean pathways for surgical patients has reduced wait times and unnecessary testing (D'Andreamatteo et al., 2018). Six Sigma's data-driven focus further minimizes errors in interdepartmental handoffs, particularly in medication and laboratory services.

4.6 Integrated Framework for Coordination

Sustainable coordination requires a comprehensive model that combines communication, decision-making, technology, training, and Lean practices. This integrated framework ensures that collaboration is not isolated to specific projects but embedded in the hospital's organizational culture and daily operations.

Table 1. Summary of Strategies for Interdepartmental Coordination in Hospitals

Strategy	Key Tools/Methods	Expected Outcomes	Challenges
Communication Systems	SBAR, EHR, daily huddles	Reduced errors, faster information sharing	Staff resistance, training requirements
Collaborative Decision-Making	Interdisciplinary committees, governance	Standardized protocols, shared accountability	Hierarchical barriers
Technology & Digital Tools	AI dashboards, telemedicine	Real-time coordination, continuity of care	Infrastructure costs
Training & Capacity Building	Simulation, leadership programs	Improved teamwork, staff satisfaction	Resource constraints
Lean & Quality Improvement	Process mapping, Six Sigma	Streamlined workflows, reduced duplication	Need for continuous monitoring

5. CHALLENGES AND BARRIERS

While interdepartmental coordination has proven benefits for enhancing patient safety, care quality, and hospital efficiency, its implementation is often hindered by several organizational, cultural, and resource-related barriers.

5.1 Organizational Silos and Hierarchies

Hospitals traditionally operate in departmental silos, where each unit has distinct workflows, policies, and leadership structures. Such fragmentation limits knowledge sharing and makes cross-departmental collaboration difficult. Hierarchical dynamics—where physicians, nurses, and allied health professionals operate within rigid structures—further restrict open communication and teamwork (Manser, 2018).

5.2 Communication Gaps

Despite advances in electronic health records (EHRs), hospitals continue to face communication challenges. Misinterpretation of patient information, incomplete handovers, and delays in reporting diagnostic results remain common sources of error (Muller et al., 2018). These gaps are magnified during emergencies, where timely coordination across departments is critical.

5.3 Cultural and Professional Differences

Differences in departmental cultures and professional identities often create tension in collaboration. For example, physicians may prioritize rapid decision-making, while laboratory staff emphasize accuracy and validation, leading to misaligned expectations (Willis et al., 2022). Building mutual respect and trust across specialties remains a persistent

challenge.

5.4 Limited Resources and Infrastructure

Implementing coordination mechanisms such as simulation-based training, real-time dashboards, or Lean Six Sigma projects requires significant financial and technological investment. In resource-limited settings, budget constraints often result in underfunded training programs and outdated IT infrastructure (Ozkaynak et al., 2023).

5.5 Resistance to Change

Change management in hospitals is complex, with staff often resistant to adopting new communication protocols, digital tools, or cross-departmental workflows. Resistance stems from workload concerns, fear of accountability, or skepticism regarding the effectiveness of new initiatives (Côté et al., 2021). Without strong leadership and continuous support, coordination projects risk being unsustainable.



Figure 2. Challenges and Strategies for Interdepartmental Coordination

6. DISCUSSION

The findings of this review highlight that effective interdepartmental coordination is not a luxury but a necessity for hospitals striving to deliver safe, high-quality, and efficient care. Evidence shows that communication tools, shared decision-making structures, digital transformation, interprofessional training, and Lean quality improvement methods can significantly reduce errors, enhance patient outcomes, and streamline workflows (Muller et al., 2018; Bajwa et al., 2022). Yet, despite these advances, coordination remains uneven across hospitals, with persistent barriers related to culture, hierarchy, and resources (Ozkaynak et al., 2023).

While each strategy—such as SBAR for communication or Lean pathways for efficiency—has demonstrated value independently, their greatest impact emerges when applied as part of an integrated framework. Hospitals that combine technological solutions with training and governance reforms tend to achieve more sustainable results. For instance, implementing an electronic health record (EHR) system without parallel training or leadership support may improve access to data but still fail to foster genuine collaboration (Côté et al., 2021).

Leadership commitment and organizational culture are central to overcoming barriers. Hospitals with leaders who actively promote shared governance, flatten hierarchies, and encourage cross-departmental dialogue report stronger collaboration and higher staff morale (Willis et al., 2022). Cultural transformation—shifting from a siloed, discipline-specific mindset to a patient-centered approach—emerges as a crucial driver of coordination.

At the policy level, accreditation bodies such as the Joint Commission and the World Health Organization’s *Global Patient Safety Action Plan* emphasize collaboration as a core requirement for hospital quality and safety (WHO, 2021). Embedding interdepartmental coordination into national and institutional healthcare policies can standardize practices and reduce variability across hospitals. In Saudi Arabia and similar contexts, such reforms align with broader healthcare transformation initiatives under national visions for efficiency and patient-centered care.

Despite progress, research gaps remain. Most studies focus on high-income countries, leaving limited insight into how hospitals in resource-constrained settings can adopt coordination strategies. Future research should explore cost-effective, scalable approaches—such as low-cost digital communication platforms or blended simulation training—that adapt strategies to diverse healthcare environments. Additionally, longitudinal studies are needed to assess the sustainability of coordination initiatives over time.

Overall, the evidence underscores that interdepartmental coordination is not solely a technical challenge but a socio-organizational one. Hospitals that integrate communication tools, digital solutions, training, and Lean quality improvement within a supportive cultural and leadership framework are more likely to achieve durable improvements in patient safety, care quality, and operational efficiency.

7. CONCLUSION

Interdepartmental coordination stands as a critical determinant of hospital performance, directly influencing the quality, safety, and efficiency of patient care. This review demonstrates that effective collaboration across departments such as medicine, nursing, pharmacy, laboratory, radiology, emergency, and surgery requires more than isolated interventions—it demands an integrated approach. Communication systems like SBAR and EHRs, collaborative decision-making structures, digital transformation, interprofessional training, and Lean quality improvement initiatives collectively offer a powerful framework for strengthening coordination.

Despite these promising strategies, significant barriers persist. Organizational silos, hierarchical dynamics, professional differences, resource constraints, and resistance to change remain pressing challenges that limit hospitals from fully realizing the benefits of interdepartmental collaboration. Addressing these obstacles requires not only technical solutions but also cultural transformation and leadership commitment.

Hospitals that embrace structured coordination models can expect measurable improvements in patient outcomes, reduced medical errors, greater staff satisfaction, and more efficient use of resources. At the policy level, embedding interdepartmental coordination into accreditation standards and national healthcare reforms will further support sustainability. Future research should prioritize scalable and context-specific strategies, especially in resource-limited settings where challenges are often magnified.

Ultimately, building a culture of shared responsibility and integrated practice will ensure that hospitals evolve into systems that are not only clinically advanced but also organizationally resilient—capable of delivering safe, high-quality, and patient-centered care in an increasingly complex healthcare landscape.

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