

THE ROLE OF INTRA-HOSPITAL COMMUNICATION IN ENHANCING HEALTHCARE QUALITY IN CHINA

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Paper Received: 15.02.2025 / **Paper Accepted:** 11.03.2025 / **Paper Published:** 12.03.2025

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Abstract

Healthcare quality in China has progressed rapidly, but uneven service standards, risk of clinical errors, and inconsistent coordination within public hospitals remain persistent challenges. This paper examines intra-hospital communication as a critical determinant of healthcare quality, focusing on how clarity, speed, accuracy, and structure of information exchange influence treatment outcomes, workflow efficiency, and patient experience. Data collected from 438 healthcare personnel across four Chinese provinces reveal strong positive relationships between communication effectiveness and perceived service quality. Statistical analysis confirms communication as a significant predictor of overall care performance ($\beta = 0.68$, $p < .001$), supporting communication as a core quality improvement mechanism. These findings align with existing scholarship emphasising communication as a foundational element of hospital functioning and patient safety. The study advocates for policy-driven communication training, digital integration and structured reporting standards to strengthen China's hospital system.

Keywords: Intra-Hospital Communication, Healthcare Quality, Public Hospitals, China, Patient Safety..

Introduction

China's healthcare sector has experienced remarkable transformation over the past decade, driven by government reforms, expanded insurance coverage, digital medical records, telehealth, and public hospital modernization (Yip, Hsiao & Chen, 2021). Despite these improvements, healthcare quality remains uneven across provinces and hospital tiers, particularly in high-volume public hospitals where patient traffic is heavy and service pressure is continuous. Several studies suggest that improvements in infrastructure and technology alone are insufficient to guarantee high-quality care unless supported by coordinated human processes, communication clarity, and inter-departmental information flow (Zhou & Zhang, 2020; Wang & Liu, 2022). In other words, hospitals succeed not only through advanced clinical technology, but through how well people inside the institution transfer, interpret, and act upon medical information.

Intra-hospital communication plays an increasingly critical role in this context. It encompasses information flow among clinicians, nurses, pharmacists, administrators, and supporting departments - whether verbal, written, chart-based, electronic, or digitally automated. It influences everything from diagnosis and medication prescription to discharge instructions and emergency response. When communication is timely, accurate, and structured, treatment teams align effectively, decision errors decrease, and patient care becomes efficient and safe (Li, Chen & Huang, 2022). Conversely, when information breaks down, clinical handovers weaken, duplication of work increases, and the risk of preventable failure sharply escalates.

Global evidence suggests that communication failures account for nearly 60% of reported clinical errors in hospitals worldwide (WHO, 2023), highlighting its importance as a foundational determinant of patient safety. In China's large public hospitals - where patient volumes are high, shift schedules intense, and medical hierarchy's rigid - communication challenges are amplified (Sun & Gao, 2021). The healthcare workforce increasingly

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relies on rapid decision cycles, digital record transitions, and interdisciplinary collaboration, making communication efficiency a vital predictor of outcome quality. However, existing research often studies communication indirectly under broader themes like digital transformation, staff competence, and hospital management (Zhang et al., 2021), leaving a significant knowledge gap.

This study addresses that gap by empirically examining communication as a primary variable, not merely a supporting factor. The objective is to evaluate how information flow inside hospitals affects accuracy, patient experience, treatment coordination, and operational efficiency. Through this inquiry, the research contributes both theoretical clarity and practical evidence for policymakers and hospital administrators seeking quality-driven reform.

Literature Review

Healthcare quality is a multidimensional construct involving patient safety, effectiveness of treatment, satisfaction, responsiveness, and continuity of care. The Chinese government has strengthened accreditation standards, promoted value-based care, and invested heavily in digital hospital upgrades (Liu et al., 2020). However, despite structural development, hospitals continue to face challenges such as overcrowding, uneven staff competence, limited doctor-patient interaction time, and inconsistent handover processes (Huang & Luo, 2021). Scholars increasingly argue that quality is not only a product of technology, but of communication-enabled coordination that connects professionals, procedures, and technologies into a functioning care network (Wang & Liu, 2022; Xu & Ren, 2023).

Intra-hospital communication refers to information transfer between units, departments, and clinical roles during diagnosis, shift transitions, emergency escalation, or treatment planning. It includes vertical exchanges (junior nurse to senior physician, department to administration), horizontal interactions (doctor to doctor, nurse to pharmacist), and digital interfaces via EHR, PACS, HIS, or telemedicine systems (Chen et al., 2021). Effective communication ensures clarity of instructions, reduction of ambiguity, and standardization of medical pathways.

Several international studies link communication directly to quality outcomes. Leonard et al. (2019) argue that structured handover protocols reduce medication error rates. A U.S. study showed that improved communication reduced ICU mortality by up to 15% (Agarwal et al., 2020). The WHO (2023) identifies communication gaps as the single largest cause of preventable adverse events. Although

Chinese hospitals are increasingly adopting digital records and electronic order entry systems, gaps remain in interoperability, inter-shift data sharing, and real-time patient monitoring communication (Zhang et al., 2021; Li et al., 2022).

Public hospitals in China serve approximately 80% of patients nationally, making communication quality especially important (Yip et al., 2021). High patient volume often results in rapid information turnover, which can lead to miscommunication if reporting systems are not standardised. Hierarchical structures may restrain junior staff from questioning orders or initiating clarifications, contributing to silent errors (Sun & Gao, 2021). Moreover, many hospitals lack consistent SBAR-based communication training, leading to variability in how clinical information is transferred (Chen et al., 2021).

While evidence repeatedly highlights communication as a safety determinant, much of the literature frames it as a subset of organisational culture, leadership quality, or digital health transformation rather than a standalone construct (Xu & Ren, 2023). There remains limited empirical research isolating communication as a direct predictor of healthcare quality in China. This study targets that theoretical gap and seeks to quantify the strength of communication's effect using hospital-based data analysis.

Methodology

This study adopted a quantitative survey-based design to examine how intra-hospital communication influences healthcare quality in public hospitals in China. Data were collected from healthcare professionals working in Grade II and Grade III public hospitals located in Shanghai, Beijing, Sichuan, and Henan, representing both developed and developing provincial healthcare environments. A stratified sampling approach was used to ensure proportional representation of physicians, nurses, pharmacists, and administrative staff, recognising that communication processes operate across multiple professional hierarchies within the hospital environment. A total of 458 questionnaires were initially distributed, out of which 438 responses were retained after excluding incomplete and inconsistent entries, yielding a high usable response rate suitable for statistical modelling and generalisation.

The survey instrument consisted of three sections: demographic information, communication effectiveness measurement, and perceived healthcare quality indicators. Communication was assessed using a five-point Likert scale adapted from the Hospital Communication Survey (HCS), which evaluates message clarity, timeliness of information

exchange, feedback quality, and cross-departmental coordination. Healthcare quality perceptions were measured using the Patient-Care Quality Index (PCQI), which captures indicators such as reliability of treatment, procedural efficiency, patient safety confidence, and service responsiveness. Higher scores on both scales reflected stronger positive perception. Prior to full deployment, the questionnaire was pilot-tested with 32 participants to confirm clarity, internal consistency, and response comprehension. Cronbach's alpha coefficients exceeded the recommended threshold of 0.70 for all constructs, indicating satisfactory instrument reliability for large-sample testing.

Data analysis was performed using SPSS 27 for descriptive statistics, correlation tests, and normality checks, while AMOS 24 was applied to run regression models assessing the predictive effect of communication on healthcare quality. Descriptive analysis provided a general distribution of responses, Pearson correlation examined linear relationships between variables, and regression modelling determined the strength and significance of communication as an explanatory factor for perceived healthcare quality outcomes. Ethical considerations were strictly observed throughout the study; participation was entirely voluntary, no personal identifiers were collected, and respondents were informed of confidentiality and data protection measures prior to survey submission. All procedures aligned with standard research ethics for institutional data collection involving healthcare personnel.

Data Analysis

The dataset collected from 438 healthcare professionals was first examined using descriptive statistical procedures to understand overall perceptions of intra-hospital communication and healthcare quality within public hospitals in China. Mean scores were calculated to reflect average respondent views across both variables.

As shown below, descriptive outputs indicate that the sample reported moderately strong levels of communication performance inside hospitals ($M = 4.21$, $SD = 0.78$) and an even higher perception of healthcare quality ($M = 4.35$, $SD = 0.81$). These scores illustrate that while communication processes are functioning relatively well, there is still notable room for strengthening communication channels to align fully with quality expectations. Higher perception of quality further suggests that overall care delivery is considered satisfactory, yet communication remains an important mechanism for closing performance gaps.

Table 1: Descriptive Statistics

Variable	Mean (M)	SD
Intra-Hospital Communication	4.21	0.78
Healthcare Quality Perception	4.35	0.81

The results presented above establish the baseline condition of the two principal constructs, forming a foundation for further inferential evaluation. To examine the linear relationship between communication effectiveness and healthcare quality, Pearson correlation analysis was conducted. The correlation matrix displayed below reveals a strong, positive, and statistically significant association ($r = 0.72$, $p < .001$). This means that when intra-hospital communication improves - whether through clearer message transfer, timely information updates, or structured coordination procedures - overall healthcare quality is also perceived to increase. Such a strong correlation supports existing theoretical assumptions that communication is an integral operational variable in healthcare institutions.

Table 2: Correlation Matrix

Variables	1	2
1. Communication	1.00	—
2. Healthcare Quality	0.72**	1.00

Note: $p < .001$

The correlation test confirms relational strength but does not yet determine causal direction or predictive influence. Therefore, regression analysis was employed to further evaluate the extent to which communication effectiveness predicts variations in healthcare quality outcomes. As reflected in Table 3, communication emerges as a strong and statistically significant predictor ($\beta = 0.68$, $p < .001$). This regression coefficient demonstrates that hospitals with more structured, efficient, and transparent communication systems tend to achieve substantially higher levels of healthcare quality. The p-value below .001 reinforces that this effect is not random but statistically meaningful. These findings offer empirical support for the research hypothesis that better internal communication directly contributes to improved treatment accuracy, procedural coordination, and patient satisfaction across Chinese public hospitals.

Table 3: Regression Output

Predictor	Dependent Variable	β	p-value
Communication Effectiveness	Healthcare Quality	0.68	< .001

In summary, the analytical results clearly demonstrate that communication is not simply a supportive organisational function, but a core driver

of service standards within hospital environments. The strong correlation and predictive regression outcome jointly validate that improving communication processes - whether through digital integration, staff protocol training, or structured shift handovers - has measurable and immediate impact on healthcare quality. These statistical patterns align with the theoretical position of this study, confirming that effective intra-hospital communication significantly enhances healthcare quality in China's public healthcare system.

Results

The results of the study provide strong empirical support for the hypothesis that intra-hospital communication plays a significant role in improving healthcare quality in China's public hospitals. Descriptive findings show that respondents reported relatively high levels of communication effectiveness ($M = 4.21$, $SD = 0.78$), suggesting that most hospital units maintain functional communication channels, although variability in responses indicates inconsistency across departments. Healthcare quality perception also demonstrated a high mean score ($M = 4.35$, $SD = 0.81$), reflecting overall confidence in service performance, but with potential for enhancement through more structured information flow.

Correlation testing further revealed a strong and statistically significant association between the two constructs ($r = 0.72$, $p < .001$). This finding indicates that improvements in the clarity, timeliness, and accuracy of communication are closely linked to better patient outcomes, smoother workflows, and improved treatment satisfaction. In other words, hospitals reporting stronger internal communication also tended to report higher quality performance.

Regression analysis was conducted to determine the predictive strength of communication effectiveness on healthcare quality. The model produced a beta coefficient of $\beta = 0.68$ ($p < .001$), confirming that communication is not merely correlated with, but meaningfully predicts variations in perceived healthcare quality. This means that even incremental improvements in handover structure, message delivery, and interdepartmental coordination can produce measurable increases in care quality.

Collectively, the findings demonstrate that intra-hospital communication is a significant and influential contributor to healthcare quality outcomes. Hospitals that facilitate rapid information transfer, reduce message distortion, and promote feedback-driven reporting systems experience better care continuity, fewer clinical errors, and greater patient satisfaction. These results underline the value of communication as a central mechanism in healthcare management, supporting the argument

that reforms targeting communication infrastructure and culture can lead directly to measurable improvements in service delivery across China's public hospital system.

Discussion

The findings align with global evidence identifying communication as the backbone of healthcare safety (WHO, 2023). When reports are transferred clearly during shift-handovers, when doctors and nurses collaborate dynamically, when digital health records are updated timely, the overall healthcare system becomes faster, safer and more patient-centred. Improved communication reduces medication mistakes, accelerates emergency response, clarifies duty responsibility and enhances inter-departmental referral efficiency (Li et al., 2022). In China's dense public hospital system, where average daily patient volume is high, communication is not supportive - it is structural. Communication also reinforces organizational trust, strengthens teamwork and reduces interpersonal conflict, allowing clinical decisions to move smoothly through the chain of care.

Practical implications include mandatory SBAR-structured handovers, internal communication training, digital interoperability across departments, AI-based monitoring dashboards and shared electronic medication alerts. At policy level, healthcare authorities should integrate communication competency into professional licensing and require performance indicators linked to communication practices, as research shows that where communication improves, quality follows.

Conclusion

The findings of this research affirm that intra-hospital communication is not merely a supporting administrative element, but a core operational determinant of healthcare quality in China's public hospitals. Efficient communication enables professionals to exchange clinical information accurately, coordinate treatment decisions, and escalate critical updates in a timely manner - processes that directly influence the quality and safety of patient care. Statistical results from the study reveal a strong positive relationship between communication effectiveness and quality outcomes, indicating that when message clarity, information transparency, and rapid communication channels are present, both clinical performance and patient experience improve significantly. These outcomes align with global evidence linking communication systems to reduced medical errors, faster diagnosis cycles, and enhanced collaborative decision-making, thereby reinforcing communication as an indispensable indicator of hospital excellence.

Beyond confirming the association, the study highlights the strategic importance of communication systems in high-volume public hospitals, where patient load and decision speed demand precise coordination. In such environments, even minor breakdowns in communication can trigger cascading delays, diagnostic uncertainty, medication inconsistencies, and workflow interruptions. Conversely, structured communication practices, digital reporting integration, and collaborative interdepartmental exchange create an environment where healthcare professionals operate cohesively, resulting in safer care transitions and more consistent treatment quality. The implications are clear: hospitals can achieve substantial quality improvement not only through infrastructure and technology upgrades, but by strengthening internal communication culture, protocol standardisation, and digital information pathways.

However, the study must be interpreted with caution. The analysis relies primarily on perception-based survey measures rather than recorded clinical outcomes, which may introduce response subjectivity. Furthermore, data were collected from selected provinces and may not fully reflect national variation in resource allocation, staffing ratios, or digital maturity. To build on the present findings, future research should incorporate longitudinal patient outcome indicators, objective error-reporting records, and real-time communication audits. Comparative studies between urban and rural hospitals would also deepen understanding of contextual differences, while analytical models that integrate mediating variables - such as digital AI support systems, leadership strength, or staff communication training - could reveal more complex causal pathways within the communication-quality relationship.

The study contributes meaningful empirical evidence to the limited scholarship that directly examines communication as a primary driver of healthcare quality in China, rather than as a background condition. Intra-hospital communication emerges as a powerful, actionable mechanism for improving clinical reliability, enhancing professional coordination, and elevating patient experience within public hospital systems. Strengthening communication should therefore be prioritised as an essential quality-improvement strategy, embedded into policy, management, and everyday clinical practice. With deliberate investment and clear structural guidance, communication can operate not as a passive information channel, but as a transformative instrument for healthcare advancement across China.

Conflicts of Interest

The authors declare that there is no significant competing financial, professional, or personal interests that might have influenced the performance or presentation of the work described in this manuscript.

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