

## Risk Management Implementation in Primary Health Care Quality Improvement: A Qualitative Case Study at Siriwo Community Health Center

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### ABSTRACT

**Introduction:** Primary health care plays a vital role in ensuring equitable access to essential health services; however, significant quality and patient safety gaps persist, particularly in resource-limited settings. Risk management is recognized as a governance strategy for reducing preventable harm and improving service quality, yet its implementation at the facility level is often inconsistent.

**Objectives:** This study aimed to examine how risk management was implemented and how it contributed to improving service quality at Siriwo Primary Health Care in Indonesia.

**Methods:** A single-case qualitative study design was employed. Participants included the health center director, quality improvement officers, health professionals, and administrative staff with at least 1 year of experience. Data were collected through in-depth semi-structured interviews, non-participant observations, and document reviews. All interviews were audio-recorded and transcribed verbatim. Data were analyzed thematically using coding, categorization, and theme development. Triangulation across data sources was applied to enhance credibility and rigor.

**Results:** Risk management was implemented progressively through risk identification, assessment, and control integrated into routine service activities. Key risks included patient safety incidents, service delays, procedural errors, supply limitations, and human resource constraints. The implementation strengthened adherence to standard operating procedures, improved internal monitoring, enhanced staff awareness of patient safety, reduced the recurrence of complaints, and increased perceived community satisfaction.

**Conclusions:** Integrating structured risk management into daily operations improved service quality and fostered a stronger patient safety culture. Context-adapted risk governance may be an effective strategy for enhancing primary health care performance in resource-limited settings.

## Introduction

The efficacy of primary health care remains challenged by persistent quality gaps and patient safety incidents, despite its critical role in ensuring equitable access to essential services and achieving universal health coverage. According to the World Health Organization (2023a) unsafe care is a significant cause of preventable harm, with adverse events influencing approximately 10% of patients worldwide and occurring at a disproportionately high rate in low- and middle-income countries. In primary health care contexts, the likelihood of service inefficiencies and compromised patient safety is increased by exacerbated clinical and managerial risks, often resulting from high service demand, fragmented governance structures, and limited resources. Risk management is often implemented procedurally rather than strategically integrated into decision-making and continuous quality improvement processes, despite regulatory mandates that promote quality assurance and patient safety standards. The need to evaluate risk management implementation at the facility level, particularly in community



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health centers, to enhance service quality, reduce preventable harm, and strengthen governance is underscored by the gap between policy expectations and operational practice.

Globally, primary health care systems continue to encounter substantial patient safety challenges, as the implementation of structured risk management and incident reporting remains suboptimal. Recent evidence suggests that incident reporting rates in primary care settings may capture fewer than 50% of actual adverse events, indicating under-detection and a deficient safety culture (Chaneliere et al., 2024). Additionally, only approximately 60% of health organizations consistently implement established risk management frameworks, suggesting that many facilities lack systematic risk identification, monitoring, and mitigation mechanisms. The vulnerabilities in primary care delivery are exacerbated by resource limitations, high service demand, and governance constraints in low- and middle-income countries (LMICs). These disparities are particularly pronounced.

In the Indonesian context, quality improvement efforts in Primary Health Care Centers continue to encounter institutional and managerial barriers. National data show that compliance with patient safety targets remains at approximately 70%, indicating a 30% shortfall from the expected standard (Nasrullah, 2024). Empirical findings further demonstrate that structured implementation of patient safety principles can increase service quality indicators by more than 20%, underscoring the measurable impact of safety-oriented management (Ferial & Wahyuni, 2022). However, despite accreditation mandates, implementation discrepancies persist, with several facilities reporting compliance with standard operating procedures below 75% (Qurrotaayun et al., 2025). This implementation gap underscores the need for in-depth qualitative exploration of how risk management is operationalized in real-world primary care settings. The novelty of this study lies in its focus on the practical implementation of risk management within a community health center context, providing contextualized insights into governance, managerial processes, and quality-improvement dynamics at the facility level.

Enhanced service quality, patient satisfaction, and organizational efficiency have been empirically linked to risk management. Hardy & Paramarta (2025) found that risk management and safety culture accounted for nearly 50% of the variance in patient satisfaction scores. Park & Sharp (2019) reported that structured risk control systems can result in efficiency gains and cost reductions of up to 15%. In primary care, comprehensive risk management approaches have also been associated with increased patient safety incident reporting rates (Chaneliere et al., 2024), indicative of more robust surveillance and learning systems. Nevertheless, implementation remains a challenge, particularly in resource-constrained settings, where approximately 40% of healthcare initiatives experience delays or suboptimal outcomes due to insufficient risk assessment (Oluoch & Kisimbii, 2021). The central issue is not the acknowledged significance of risk management, but rather its consistent and context-sensitive implementation, as evidenced by the fact that effective execution is further constrained by limited human resource capacity, weak clinical governance, and competency disparities across more than 30% of Indonesian facilities (Lestari, 2018; Naidoo & Suthiram, 2025).

Despite regulatory mandates requiring structured risk governance in primary health care, there are significant discrepancies between actual implementation at the facility level and the policy's expectations. Aswad et al (2025) and Yostin et al (2023) have conducted studies that primarily rely on quantitative evaluations or large-scale assessments to measure compliance levels and outcome indicators. However, these studies offer limited insight into the operationalization of risk management processes in daily clinical and managerial practice. Therefore, there is a significant gap in understanding the contextual, organizational, and behavioral factors that influence the effectiveness of risk management in primary health care settings. Additionally, there is a dearth of qualitative evidence on the integration of risk governance into routine decision-making, quality improvement cycles, and frontline service



delivery. Moving beyond compliance measurement is imperative to gain a deeper understanding of the practical challenges and implementation dynamics at the facility level. This study aimed to examine how risk management was implemented and how it contributed to improving service quality at Siriwo Primary Health Care in Indonesia.

## Methods

### Study Design

This study employed a qualitative single-case design to explore the implementation of risk management to improve the quality of primary health care at Siriwo Primary Health Care. A case study approach was selected to enable an in-depth understanding of risk management processes within their real-life organizational context.

### Study Setting

The study was conducted at the Siriwo Primary Health Care in Dogiyai Regency, Indonesia.

### Participants and Sampling

This study employed purposive sampling to recruit participants who were directly involved in the implementation of quality improvement and risk management at the Primary Health Care center. Participants were deliberately selected based on their roles, responsibilities, and experience related to governance, service delivery, and patient safety processes. A total of 12 participants were included, comprising the Head of the Primary Health Care (1), quality improvement officers (2), healthcare providers, including nurses, midwives, and pharmacy staff (6), and administrative personnel (3). The inclusion criteria required participants to have at least 1 year of work experience at the facility and to be actively involved in either clinical service provision or managerial functions. Data collection continued until data saturation was achieved, defined as the point at which no new themes, codes, or substantive insights emerged from subsequent interviews. Saturation was reached after the tenth interview, with two additional interviews conducted to confirm thematic consistency and ensure analytical completeness.

### Data Collection

Data were collected using methodological triangulation, including in-depth interviews, non-participant observations, and document review. Semi-structured in-depth interviews were conducted with all 12 participants using an interview guide devised through a structured process. The guide was formulated based on established risk management frameworks (risk identification, risk analysis, risk control, and monitoring) and national primary health care quality standards. It was further refined through expert consultation with two senior researchers in health service management to ensure content relevance and clarity. A pilot interview was conducted with one health staff member outside the study site to assess the flow and comprehensibility of the questions, and minor revisions were made accordingly. The final guide explored five domains: risk identification practices, risk analysis procedures, mitigation strategies, perceived impact on service quality, and implementation challenges. Each interview lasted approximately 45–60 minutes, was conducted in a private setting, and was audio-recorded with participant consent before being transcribed verbatim for analysis. Non-participant observations and document evaluations were conducted to corroborate interview findings, strengthening data credibility through triangulation.

### Data Analysis

Data were analyzed thematically through an iterative and systematic process. All interview recordings were transcribed verbatim, and data from interviews, observations, and document



evaluations were organized using a structured data management matrix. The analysis involved stages of data reduction, data display, open coding, categorization, and theme development. Codes were generated inductively from meaningful data segments and subsequently aggregated into broader categories before being refined into overarching themes related to risk identification, risk assessment, risk control strategies, service quality impact, and implementation barriers. Data from multiple sources were continuously compared to ensure consistency and strengthen analytical rigor through methodological triangulation.

To enhance trustworthiness, several strategies were employed. Member verification was conducted by sharing preliminary findings with selected participants to verify accuracy and interpretation. An audit trail was maintained throughout the research process, documenting coding decisions, theme refinement, and analytical memos to ensure transparency and dependability. Additionally, researcher reflexivity was applied by acknowledging the researchers' professional backgrounds in health management and continuously reflecting on potential biases during data interpretation. These procedures strengthened the credibility, dependability, confirmability, and overall rigor of the qualitative analysis.

## Results

The findings indicate that risk management at Siriwo Primary Health Center has been progressively implemented and embedded within routine service activities. Integration across data sources was evident, as interview narratives were consistent with observational findings and document review. Statements from participants regarding risk identification meetings, incident reporting practices, and SOP adherence were corroborated through direct observation of workflow processes and verification in internal reports and risk registers. This triangulation strengthened the credibility of the thematic conclusions. Two major themes emerged: 1) Stages of risk management implementation; 2) Perceived impact on service quality.

### Theme 1: Stages of Risk Management Implementation

Participants described risk management as a structured yet evolving cycle consisting of risk identification, risk analysis, mitigation planning, and monitoring. Interview data revealed that coordination meetings and incident-reporting mechanisms were central to implementation, and these accounts were corroborated by observational evidence of monthly evaluation meetings and documented risk registers.

As explained by QI Officer 1:

*"We identify risks during monthly meetings, especially when there are incident reports or service delays. After that, we analyze the causes and determine corrective actions."*

This statement aligned with field observations showing structured meeting agendas that included risk review sessions and follow-up documentation. Similarly, risk registers examined during document review contained categorized risks and assigned responsible personnel, confirming the process described in interviews.

A frontline perspective was provided by Nurse 1, who stated:

*"Risk management is not only for accreditation purposes. In daily practice, when there is a patient complaint or documentation error, we immediately discuss it and record it as part of risk control."*

Observational data supported this claim, as SOPs were visibly displayed in service units and staff were seen documenting service incidents in standardized forms.



Additionally, Administrative Staff 1 highlighted the monitoring component:

*"After identifying and addressing risks, we monitor whether the same problem occurs again. If it does, we revise the strategy."*

This iterative monitoring process was confirmed through document analysis of internal evaluation reports, which showed periodic follow-up reviews.

#### Theme 2: Perceived Impact on Service Quality

Participants consistently perceived that structured risk management positively influenced service coordination, incident response, and overall service organization. Interview narratives describing improved practices were validated through clearer workflow patterns observed and documented evidence demonstrating increased reporting completeness.

For example, Pharmacy Staff 1 stated:

*"Since we strengthened incident reporting and verification procedures, medication errors have decreased, and we double-check prescriptions more consistently."*

This perception was supported by document review, which indicated more complete medication incident forms and verification logs than in earlier records.

From a managerial standpoint, Head of PHC 1 noted:

*"Risk management allows us to anticipate problems before they escalate. It strengthens teamwork and makes our services more systematic."*

Observational findings reinforced this statement, as coordination among service units during patient referrals appeared more organized, and staff followed standardized procedures during patient registration and clinical service delivery.

Similarly, Midwife 1 emphasized improvements in responsiveness:

*"When there is a delay or complaint, we now respond faster because there is a clear mechanism."*

Field notes documented shorter response intervals during observed service disruptions, reflecting alignment between participant accounts and real-time practice. Overall, the explicit integration of interview data with direct observation and documentary evidence demonstrates consistent patterns across data sources. This triangulated analysis indicates that risk management implementation at the health center not only follows a structured process but also contributes to tangible improvements in organizational performance and perceived service quality.

## Discussion

This study demonstrates that risk management at Siriwo Primary Health Care was implemented through systematic phases of risk identification, assessment, mitigation, and monitoring, and progressively embedded into routine service delivery. To interpret these findings, the discussion draws on the clinical governance model and patient safety culture theory as complementary theoretical lenses. The clinical governance model emphasizes accountability, structured monitoring, and continuous quality improvement within health organizations (Naidoo & Suthiram, 2025; Park & Sharp, 2019), while patient safety culture theory highlights shared values, leadership commitment, and open communication as foundations for safer care (Chaneliere et al., 2024; Hardy & Paramarta, 2025). The integration of risk management into



routine meetings, SOP reinforcement, and internal monitoring mechanisms operationalizes these governance principles at the facility level.

From a clinical governance perspective, the structured identification of clinical, operational, and managerial risks indicates a transition toward systematic quality oversight rather than reactive problem-solving. Although the health center did not fully utilize quantitative risk-scoring tools, regular team discussions, incident reviews, and documented follow-up actions demonstrate a context-adapted governance mechanism. In resource-constrained primary care settings, simplified and participatory risk management systems are often more sustainable than technically complex models (Oluoch & Kisimbii, 2021; Naidoo & Suthiram, 2025). This suggests that effectiveness depends less on sophisticated instruments and more on leadership engagement and shared accountability (Basuki & Setiawan, 2022; Saputro et al., 2023).

From a clinical governance perspective, the structured identification of clinical, operational, and managerial risks suggests a change toward systematic quality control rather than reactive problem-solving (Hibbert et al., 2023; Joseph, 2021). Although the health center did not completely utilize quantitative risk-scoring methods, regular team talks, event evaluations, and documented follow-up activities suggest a context-adapted governance process. In resource-constrained primary care settings, simplified and participatory risk management systems are often more sustainable than technically complex models (Naidoo & Suthiram, 2025; Oluoch & Kisimbii, 2021). This suggests that effectiveness depends less on sophisticated instruments and more on leadership engagement and shared accountability (Basuki & Setiawan, 2022; Saputro et al., 2023).

Through the lens of patient safety culture theory, improved staff alertness, stronger adherence to SOPs, and more responsive incident handling indicate a shift toward collective responsibility for safety. Participants perceived risk management not merely as an accreditation requirement but as embedded in daily practice. Evidence demonstrates that when safety practices get institutionalized within organizational culture, reporting behavior and service reliability improve (Chaneliere et al., 2024; Goldberg et al., 2023). Strengthened monitoring and procedural reinforcement further support the premise that organized governance decreases service variability and promotes efficiency (Park & Sharp, 2019).

Contextual factors strongly influenced implementation. Enabling conditions included leadership commitment, coordination forums, and increasing staff awareness of patient safety principles. However, structural limitations such as limited human resources, multiple role responsibilities, documentation burdens, and variable competency in formal risk assessment affected consistency. Similar constraints have been identified in primary care settings in Indonesia and other low-resource contexts, particularly regarding documentation systems and administrative workload (Harkensia et al., 2025; Heinzova et al., 2021). Capacity development remains essential for sustaining risk management practices and service quality improvement (Lestari, 2018; Rumondang et al., 2025). Overall, this study provides empirical support for institutionalizing risk management as a core governance strategy in primary health care. In line with global risk management guidance (World Health Organization, 2023). A structured yet context-adapted implementation, supported by leadership and continuous professional development, can strengthen procedural compliance, safety culture, and perceived service quality despite systemic constraints.

## Conclusion

This study demonstrates that systematic and context-adapted risk management can strengthen patient safety culture, procedural compliance, and service efficiency in resource-limited primary health care settings. Although human resource and documentation constraints



remain challenges, sustained leadership commitment and continuous capacity building are critical to ensuring long-term effectiveness and quality improvement.

### **Ethics approval and consent to participate**

The Institutional Ethics Committee of the affiliated institution granted ethical approval for this study prior to data collection. The management of Siriwo Primary Health Care also granted permission to conduct the research. The study objectives, procedures, potential risks, and benefits were all thoroughly explained to all participants, who were also informed of their right to withdraw at any time without penalty. Before interviews were conducted, written informed assent was obtained from all participants. All data was de-identified, and research documents were securely stored in accordance with ethical research standards to ensure confidentiality and anonymity.

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