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Risk Management Analysis of Public Health Facilities as an Effort to Improve Service Units at Community Health Center X

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Abstract

Risk management is an essential component in maintaining service quality and patient safety within primary healthcare facilities. This study aims to analyze the implementation of risk management at Puskesmas X Jakarta in 2025, referring to Jakarta Provincial Regulation No. 122 of 2020. The methods used include a literature review, field observations, and questionnaires administered to 76 respondents. The findings indicate that Puskesmas X identified 91 risks, all of which remain within the categories of the 82 risk indicators established by the Ministry of Health, demonstrating a comprehensive identification process. Six risks were designated as priority due to their potential impact on service quality and patient safety. Mitigation efforts, such as relocating the TB room, reorganizing maternity care areas, and conducting patient safety training, were shown to reduce risk levels. The questionnaire results revealed high visitor satisfaction, while the management of medical and liquid waste complied with existing standards. Overall, the implementation of risk management was found to be effective, although further improvements in facility layout, human resources, and risk-based budgeting are needed to support continuous service quality enhancement.

Introduction

The Ministry of Health of the Republic of Indonesia is the primary regulator in the health sector and plays a crucial role in regulation and oversight (Adji, 2024; Gamalliel, N., & Fuady, 2024; Amin et al., 2020; Setiadi, 2025). In carrying out its functions, the Ministry of Health encourages the implementation of Good Corporate Governance (GCG) principles in healthcare facilities, including Community Health Centers (Puskesmas). The implementation of GCG within an organization is key to success, enabling long-term profitability and providing quality services (Halawa et al., 2022; Syamsuddin et al., 2025; Idris et al., 2025).

Wijayanti & Setyorini (2023) and Afiyah & Ayuningtyas (2023) said that, Through the application of GCG principles, it is hoped that a more measurable risk management system, transparent reporting, and improved service quality and public trust in Community Health Centers (Puskesmas) will be created. Public health is a fundamental aspect of sustainable national development. Improving the community's quality of life is crucially determined by the availability of equitable, affordable, and high-quality healthcare services (Kruk et al., 2018; Sarbasheva et al., 2024; Ugwu et al., 2025; Aljuaid et al., 2021).

In this regard, community health centers, hereinafter referred to as Puskesmas, are healthcare facilities that provide primary-level public and individual health services, prioritizing

promotive and preventive efforts within their respective areas (Simanjuntak et al., 2025). Community Health Centers (Puskesmas) are tasked with managing and ensuring health development in their respective areas.

Therefore, they are at the forefront of achieving minimum health assessment standards (Ministry of Health of the Republic of Indonesia, 2024). However, the dynamics of health services at Puskesmas, particularly in densely populated urban areas of Jakarta, face increasingly complex challenges. High patient numbers, limited human resources, limited infrastructure, and public demands for service quality often give rise to various risks (Che et al., 2004; Trzeciak & Rivers, 2003).

These risks can arise from various units. If these risks are not managed appropriately, they can lead to operational disruptions, decreased service quality, and even undermine public trust in the Puskesmas. According to Aven (2024) Risk management is a crucial instrument in addressing these challenges, as it requires a rigorous and ongoing process. This process encompasses risk identification, analysis, evaluation, control, information communication, monitoring, and reporting, including various strategies implemented to manage risks and their potential (Simanjuntak et al., 2025; Adepoju et al., 2025; Ongesa et al., 2025).

Kunreuther (2002) said that, through risk management, each potential problem can be identified, analyzed, and evaluated based on its likelihood and impact. Thus, Community Health Centers (Puskesmas) can develop appropriate mitigation strategies to control risks. The risk management function is responsible for directing enterprise risk management practices within the organization, particularly in addressing key risks that could disrupt the achievement of organizational goals (Simanjuntak et al., 2025).

This aligns with the latest regulations from the Ministry of Health, such as Ministerial Regulation No. 6 of 2024 concerning Technical Standards for Fulfilling Minimum Health Service Standards and Ministerial Regulation No. 19 of 2024 concerning the Implementation of Community Health Centers (Ministry of Health, 2024), which emphasize the importance of standardized, safe, and quality-oriented public health service governance (Fadhel & Alqurs, 2025; Mauliah et al., 2025; Alhammadi et al., 2025).

The risk management function includes establishing policies and strategies, being the primary driver of risk implementation at the strategic and operational levels, building a risk-aware culture, developing and reviewing risk management processes, coordinating risk-related activities, preparing emergency response and business continuity plans, and submitting risk reports to the board of directors and stakeholders (Simanjuntak et al., 2025).

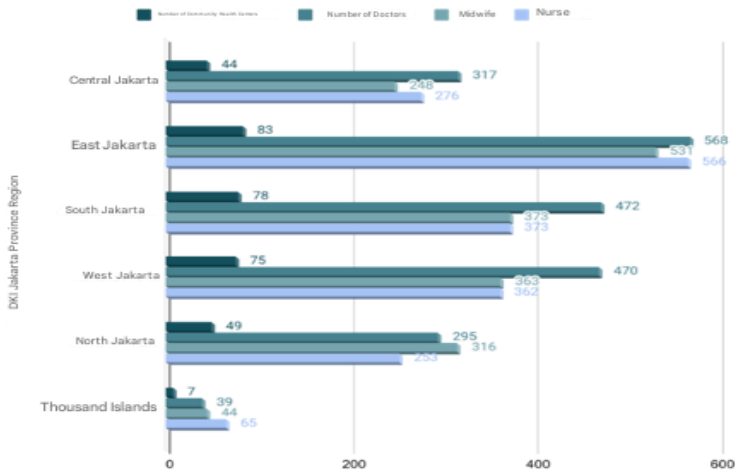

Figure 1. Distribution of the Number of Community Health Centers, Doctors, Midwives & Nurses in DKI Jakarta Province in 2024

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Figure 1 shows that the distribution of healthcare facilities and personnel in the DKI Jakarta Province shows significant disparities between administrative regions. This difference in distribution reflects variations in the capabilities and readiness of each region in DKI Jakarta to provide healthcare services to the public. This disparity can impact the effectiveness of risk management in public healthcare facilities, particularly in efforts to improve the performance of medical, support, and environmental service units. Therefore, analyzing risk management in each region is crucial to optimizing public healthcare capacity by 2025.

Table 1. Distribution of Health Workers and Health Center Visits in DKI Jakarta in 2024

Profession Name / Type of Service	Total
Medical	27,396
Nursing	38,677
Midwifery	6,771
Pharmacy	8,411
Public Health	651
Environmental Health	644
Nutrition	1,290
Physical Therapy	1,766
Biomedical Engineering	2,599
Medical Technician	4,129
Community Health Center Visits	8,313,101

Source: DKI Jakarta Provincial Health Office (2024), and processed by the author

The data in Table 1 shows that nursing and medical personnel are the dominant components of the human resource structure at Community Health Centers (Puskesmas), playing a crucial role in providing direct services to the community. The number of Puskesmas visits, reaching 8,313,101, also reflects the high level of public health service utilization in the DKI Jakarta area in 2024. This high number of visits indicates that Puskesmas remain at the forefront of the primary healthcare system. However, the large number of visits requires effective risk management, both in medical and supporting services, and in the work environment, to maintain service quality and minimize operational risks.

Although numerous studies have been conducted on the quality of Puskesmas services, most have focused on patient satisfaction, the effectiveness of health programs, or service efficiency. Meanwhile, studies on the implementation of comprehensive risk management are still limited, particularly in Puskesmas in dense urban areas like Jakarta. Therefore, this research is relevant to address this gap. The analysis of risk management at Puskesmas X in Jakarta in 2025 is expected to provide a comprehensive overview of the potential risks faced by various service units. As a limitation of the study, this research focuses on risk management analysis at Community Health Center X in Jakarta in 2025. The results of this study are expected to be the basis for Community Health Center X in developing more effective risk mitigation strategies, improving the quality of public health services, strengthening the internal management system, and supporting the achievement of national health development targets.

Literature Review

Ministry of Health

Healthcare services in Indonesia are governed by national regulations that prioritize safety, quality, and public protection (Yumame & Morin, 2025; Hasnida et al., 2021). Law No. 36 of 2009 stipulates that healthcare facilities are required to provide services that meet safety standards and pose no risk to patients or the public. Therefore, implementing risk management is not merely a technical effort but also a systematic strategy to increase public trust. Operational provisions are reinforced through Minister of Health Regulation No. 25 of 2019,

which mandates the integrated implementation of risk management at all stages of service delivery, from planning to evaluation. In the DKI Jakarta region, these provisions are detailed in DKI Jakarta Governor Regulation No. 122 (2020), which provides guidelines for risk identification, assessment, and control for all regional healthcare facilities. Therefore, the implementation of risk management at Community Health Centers (Puskesmas) has a clear legal basis and is mandatory.

Community Health Centers

Puskesmas are first-level healthcare facilities that provide direct services to the community within their respective jurisdictions. In practice, Community Health Centers (Puskesmas) not only handle individual health services but also manage public health programs within their areas of responsibility, such as disease prevention, environmental health maintenance, and community empowerment (Haemmerli et al., 2021; Lahfana & Machdum, 2025; Suryani et al., 2025).

Furthermore, Community Health Centers implement promotive and preventive public health programs, such as health education, disease prevention, and control of environmental risk factors that can impact community health (Brown, 1991; Freudenberg, 2004). Community Health Center X implements risk management in accordance with DKI Jakarta Gubernatorial Regulation No. 122 of 2020, which serves as the basis for the process of risk identification, analysis, assessment, and control.

Implementation of this regulation ensures that every potential risk is handled according to standards, thereby ensuring the quality of service and the safety of patients and healthcare workers (Beaussier et al., 2016; Auraaen et al., 2020; Kioskli et al., 2025). According to Minister of Health Regulation No. 30 of 2022, Community Health Centers deemed high quality must meet the National Quality Indicators (INM), which include compliance with hand hygiene, compliance with the use of personal protective equipment (PPE), compliance with patient identification, successful treatment of all drug-sensitive tuberculosis patients, pregnant women receiving antenatal care services according to standards, and patient satisfaction.

Risk Management

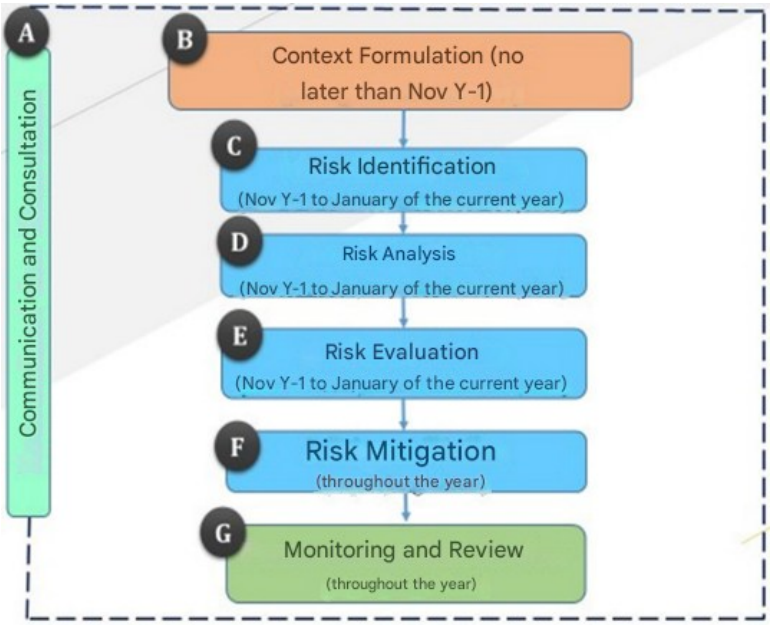

Figure 2. Risk Management Process

Risk management is a structured process for identifying, analyzing, evaluating, and controlling risks that could hinder the achievement of organizational goals. Risk retention is a term used

in risk management. Risk retention is how an organization accepts the possibility of loss and chooses not to transfer the risk through insurance (Hartwig& Wilkinson, 2007; Horvey & Odei-Mensah, 2025; Oyerinde et al., 2025). Risk transfer costs are included in the Risk Financing component. In BS 31100 and ISO 31000, Risk Financing is understood as the process of providing reserve funds to cover the financial impact if a risk actually occurs. This funding mechanism is generally provided through insurance, so insurance is viewed as a form of contingency financing for the occurrence of an insured event.

This research refers to DKI Jakarta Gubernatorial Regulation 122 of 2020, which places risk management as part of the organizational management process at Community Health Centers (Puskesmas). This standard can be used by various organizations to help increase the likelihood of achieving goals, improve performance in identifying opportunities and threats, and utilize existing resources to address risks (Ayuwulantari et al., 2024; Schwaeke et al., 2025; Ugwu et al., 2025). The Risk Management process is described as follows.

In the healthcare sector, the implementation of risk management aims to reduce incidents that could threaten patient safety, degrade service quality, and disrupt operational effectiveness. Thus, risk management serves as a strategic mechanism for maintaining the sustainability and consistency of healthcare services.

Methods

Research Design

This study employed a descriptive qualitative case study design with supporting quantitative data. The case study approach was chosen to enable an in-depth and contextual analysis of the implementation of risk management at a public primary healthcare facility. The study focused on Community Health Center (Puskesmas) X in Jakarta in 2025 as a single case, allowing for a comprehensive examination of risk identification, assessment, mitigation, and monitoring processes in accordance with DKI Jakarta Governor Regulation No. 122 of 2020.

Data Sources and Data Collection Techniques

Data were collected using multiple sources to ensure data triangulation and enhance the credibility of the findings. Primary qualitative data were obtained through direct field observations of service processes, facility layout, occupational health and safety practices, patient flow, and environmental conditions within the community health center. Observations focused on identifying potential operational, clinical, environmental, and reputational risks related to service delivery. In addition, document analysis was conducted on internal organizational documents, including risk registers, standard operating procedures (SOPs), internal reports, budgeting documents, and relevant regulatory guidelines related to risk management in public sector organizations. These documents provided institutional and regulatory context for the analysis. To support the qualitative findings, a questionnaire survey was administered to 76 visitors of Community Health Center X. The questionnaire used a six-point Likert scale to measure visitors' perceptions of service quality, safety, comfort, and overall satisfaction. The questionnaire data were not treated as the main analytical basis but were used as supporting evidence to strengthen the interpretation of the effectiveness of risk management implementation from the service users' perspective.

Data Analysis Techniques

Data analysis was conducted using an interactive qualitative analysis model adapted from Miles and Huberman, which consists of data reduction, data display, and conclusion drawing and verification. During the data reduction stage, relevant information related to risk management practices was selected, coded, and summarized from observations, documents, and field notes. The reduced data were then organized into descriptive narratives, tables, and risk matrices to facilitate interpretation. Risk analysis was carried out using a 5×5 risk analysis

matrix in accordance with DKI Jakarta Governor Regulation No. 122 of 2020, which combines the likelihood (possibility) and impact levels of identified risks. Each risk was assessed to determine its initial risk level and residual risk level after mitigation measures were implemented. Risks were then classified into priority levels to identify risks requiring further monitoring and management. The questionnaire data were analyzed using descriptive statistical techniques, including frequency distributions and mean scores, to describe visitor satisfaction and perceptions of service quality. These quantitative results were used to support and complement the qualitative findings rather than to test statistical hypotheses.

Results and Discussion

This community health center has a service system divided into four floors, each with a different function. The first floor serves patients of all ages. The second floor focuses on pregnant women, those giving birth, postpartum women, and toddlers. The third floor is for adult and elderly patients. The fourth floor is used for management activities at the community health center.

Each day, the community health center receives approximately 800 visitors. To support the health services, Community Health Center X has 174 human resources, consisting of the Administration Management (Admen), Individual Health Efforts (UKP), and Community Health Efforts (UKM) working groups. Several patients said:

> *"From the moment I arrived, the staff greeted me with a friendly and polite welcome. Their attitude made me feel valued and didn't hesitate to ask questions."*

other patients also said similar things

> *"The staff's explanations were clear and easy to understand, especially when explaining the service flow and the medications provided."*
>
> *"The registration process was orderly and the queue was orderly, so even though there were many people, it still felt organized and not confusing."*

The community health center also serves five sub-districts within its operational area. However, patients from outside these areas are only allowed a maximum of three visits. If a patient wishes to continue to a fourth visit, they must pay or can transfer health facilities (BPJS transfer). One patient said:

> *"The fees I paid were still reasonable and commensurate with the service I received."*

Community Health Center X receives funding from three main sources: the Jakarta Provincial Budget (APBD) at 54%, Regional Public Service Agency (BLUD) revenue at 45%, and the State Budget (APBN) at 1%, representing the smallest portion. These three sources contribute to the Community Health Center's operational needs, including the provision of healthcare services, procurement of medical logistics, and maintenance of facilities and infrastructure. A portion of the budget is allocated as a reserve fund, known in risk management theory as Risk Financing. This is intended to anticipate risks or unforeseen events. As part of risk management, the Community Health Center allocates a special allocation (Risk Financial) of 0.1% of the total budget for emergency response needs, including the procurement, replacement, and maintenance of portable fire extinguishers (APAR) as a fire disaster mitigation measure.

In its management, the Community Health Center monitors the dynamics of revenue and expenditure realization, ensuring that budget use can be in surplus, meet needs, or even fall short of planned. If there is a budget surplus, the excess is recorded as a Budget Calculation Surplus (SILPA/SILVA) in accordance with regional financial management regulations. These SILVA funds can be utilized in the next budget period to support operational continuity, improve service quality, and strengthen the capacity of Community Health Centers

(Puskesmas) to provide more effective and sustainable public health services. An interview with one patient stated:

> *"The supporting facilities are quite complete, although some could be improved for greater comfort."*

Community Health Center X conducted a risk profile and mapping process in accordance with DKI Jakarta Governor Regulation Number 122 of 2020 concerning Guidelines for Risk Management in Regional Apparatus. Organizational targets were established based on guidelines from the Ministry of Health, which then served as the basis for the risk identification and measurement process. Based on these targets, the Ministry of Health identified 82 risks. However, the risk identification results at Community Health Center X revealed 91 risks.

The risk levels in the risk management process are classified into five categories: very low (1), low (2), moderate (3), high (4), and very high (5). Of the 91 risks identified at Community Health Center X, six were categorized as requiring further monitoring and management because they were deemed to have the potential to disrupt the achievement of organizational targets and service quality.

Table 2. Risk Analysis Matrix

5x5 Risk Analysis Matrix			**Level Dampak**				
			1	**2**	**3**	**4**	**5**
			Not Significant	**Minor**	**Moderate**	**Significant**	**Very Significant**
Level of Possibility	**5**	Almost Certain	**9**	**15** ★4 ★5	**18**	**23**	**25**
	4	Frequently Occurs	**6**	**12**	**16** ★2 ★3	**19** ★1	**24**
	3	Sometimes Occurs	**4**	**10**	**14**	**17**	**22**
	2	Rarely Occurs	**2**	**7**	**11**	**13** ★6	**21**
	1	Almost Never Occurs	**1**	**3**	**5**	**8**	**20**

Source: DKI Governor Regulation 122 (2020), and processed by the author

The table shows the 5x5 Risk Analysis Matrix used by Community Health Center X in its risk mapping and assessment process. This matrix combines the Hazard Level (likelihood) on the vertical axis and the Impact Level (impact) on the horizontal axis to comprehensively determine the risk level. The likelihood level is classified from 1 (Almost Never) to 5 (Almost Certain), while the impact level ranges from 1 (Insignificant) to 5 (Very Significant). The risk value is obtained by multiplying the likelihood level and the impact level, resulting in a risk score ranging from 1 to 25. Based on this matrix, the risk level is further classified into five categories: very low (1), low (2), moderate (3), high (4), and very high (5). The asterisks (★) displayed in some cells of the matrix serve as markers for priority risks, namely risks with a combination of relatively high likelihood and impact and therefore requiring special attention in risk management.

In more detail, an asterisk in the matrix indicates that these risks fall within the moderate to high risk zone, specifically a combination of moderate to very significant impacts with a high to almost certain probability of occurrence. Risks in this area are considered to have significant

potential to disrupt the achievement of organizational goals and the quality of healthcare services, and therefore cannot be managed solely through routine controls. Therefore, risks marked with an asterisk require continuous monitoring, additional controls, and a more structured mitigation plan. Of the 91 risks identified at Community Health Center X, six key risks were marked as priorities in this matrix. These risks were selected because they have a relatively high risk score compared to other risks, potentially significantly impacting organizational performance if not managed effectively. Therefore, the use of this 5x5 risk matrix serves not only as a risk mapping tool but also as a basis for establishing risk management priorities in accordance with the risk management principles stipulated in DKI Jakarta Gubernatorial Regulation Number 122 of 2020.

Table 3. Risk Priorities

Risk Priority	Risk Events	Risk Description	Handling Plan	Initial Risk			Residual Risk Expectation			Information	Monitoring Realization
				F	D	L	F	D	L		
1	TB room does not meet requirements	The room lacks proper ventilation, causing hot, stuffy air. This has resulted in transmission within the healthcare facility.	Relocation of TB polyclinics in accordance with Ministry of Health guidelines on TB control	4	4	4	1	4	2	Frequency: 10 to 12 times per year. Impact: Negative coverage on social media, low stakeholder trust. Category: Reputational Risk	Relocation will take place in April 2025.
2	The layout of the postpartum and delivery service rooms which are far apart and the transfer of delivery service patients during renovations	Transfer to the nearest regional hospital. As a result, the patient was transferred to another service facility without monitoring.	Reorganization of delivery and postpartum rooms.	4	3	4	2	3	2	Frequency: 10 to 12 times per year. Impact: Low stakeholder trust. Category: Reputational Risk.	The arrangement was carried out in April 2025.
3	Patient complaints include a lack of parking space for 2 and 4 wheeled vehicles.	Limited space at the Community Health Center results in patients parking on sidewalks or in public areas.	Advise patients not to bring private vehicles.	4	3	4	4	3	4	Frequency: 10 to 12 times per year. Impact: Moderate stakeholder trust. Category: Policy Risk.	Relocation will take place in December 2025.

4	There is no traditional health service room	The old room was renovated to accommodate the cluster. As a result, there are no traditional health services.	Providing Yankestrad service space together with UBM and Hajj.	5	2	3	1	2	1	Frequency: > 12 times in 1 year. Impact: Performance decline of 90% - 95% Category: Operational Risk	The arrangement will be carried out in December 2025.
5	There are no acupressure poly nurses	The previous officer was transferred to another clinic (rotation). As a result, there were no officers on standby at the clinic.	Apply for acupressure training	5	2	3	1	2	1	Frequency: > 12 times in 1 year. Impact: Performance decline of 90% - 95% Category: Operational Risk	December 2025
6	There are indicators of INM that are often not achieved, namely patient identification compliance.	The officer was negligent in identifying the patient. This resulted in medication errors and incorrect procedures.	In House Training on patient safety.	2	2	3	1	2	1	Frequency: 2 to 5 times per year. Impact: Negative coverage on social media, low stakeholder trust. Category: Compliance Risk.	IHT will be conducted in May 2025.

Source: Processed data, Author

TB Ward Does Not Meet Requirements (First Priority)

The TB ward is a priority risk because it is located in an area with frequent crowds. This situation does not align with the principles of preventing the transmission of infectious diseases, particularly TB. The prepared response plan involves relocating the TB clinic based on a review of the Infection Prevention and Control (PPI) and TB Program, ensuring compliance with Ministry of Health guidelines. Monitoring results indicate that the mitigation measures implemented effectively reduced the likelihood of TB transmission and improved patient safety.

Distant Layout of Postpartum and Delivery Rooms (Second Priority)

The distance between the postpartum and delivery rooms potentially hampers postpartum monitoring. Furthermore, during the renovation, there was a shift in delivery services, which could reduce the quality of care. The response plan was successfully implemented, and the reorganization of the service rooms has proven to help improve the smoothness and quality of care for pregnant and postpartum women, thus deeming the mitigation a success.

Patient Complaints about Lack of Parking (Third Priority)

Limited parking for two- and four-wheeled vehicles is one of the primary complaints from patients at Community Health Center X. This situation is considered a priority risk because it can disrupt patient comfort and accessibility. The proposed management plan involves submitting a request for relocation of Community Health Center X to a more suitable location. Expectations regarding residual risk remain unchanged at this time. Community Health Center X has chosen to accept the risk in line with the risk retention theory. Because facility repairs are not yet possible, the community health center is mitigating the risk by advising patients not to bring private vehicles. However, this risk remains a concern until a relocation decision is made by the local government.

Lack of Traditional Health Service Space (Yankestrad)

All rooms at Community Health Center X are occupied, so traditional health services are combined with other rooms. This hinders the comfort and effectiveness of Yankestrad services. Monitoring has not yet been implemented, and implementation has not been implemented, resulting in the residual risk not being achieved. This delay indicates that community health centers need to plan space provision more carefully and align these plans with available facility capacity.

Unavailability of Acupressure Clinic Nurses

The unavailability of acupressure clinic nurses is a priority risk because acupressure services are part of the traditional health services expected to be available at community health centers. Human resource limitations stem from the transfer of acupressure clinic nurses to the TB clinic, as the TB clinic is perceived as a higher priority. Quarterly monitoring results indicate that acupressure clinic nurses are available, but still face limitations due to the lack of space for traditional health services.

Non-Compliance with the National Quality Indicator (NIM), namely Patient Identification Compliance

Patient identification compliance is one of the National Quality Indicators based on Ministerial Regulation No. 30 of 2022. Community Health Center X has not achieved the target for this indicator, increasing the risk of service quality. Quarterly monitoring results indicate that training was implemented as scheduled in May 2025, and the risk level has decreased. The training has been shown to improve staff understanding and compliance with patient identification processes in accordance with patient safety standards.

Questionnaire to Support the Analysis of Community Health Center Visitor Satisfaction

As part of an effort to obtain a more in-depth picture of visitor satisfaction with services at the Community Health Center, researchers developed a questionnaire using a rating scale of 1 to 6. This scale was chosen to provide more detailed assessment of respondents' perceptions of service aspects, comfort, and safety while at the Community Health Center. This questionnaire consists of 11 statements and each statement is answered with a value scale of 1 to 6, the minimum requirement for respondents is calculated using the formula of the number of items (11) multiplied by the number of scales (6), thus, the minimum number of respondents required is 66 people. In the implementation of the research, the number of respondents successfully collected exceeds the minimum number, namely 76 respondents. This number is considered sufficient to provide an adequate representation of visitor perceptions regarding the quality of services and facilities at the Community Health Center.

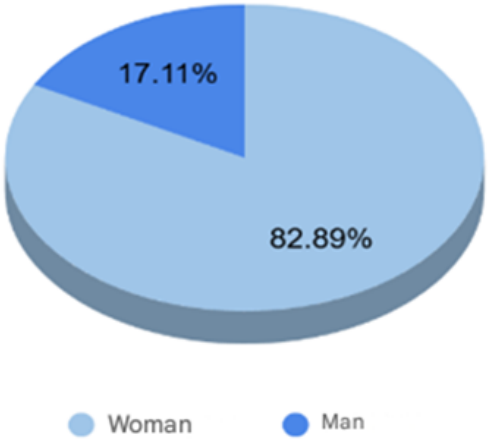

Figure 3. Percentage of Number of Visitors Based on Gender

Data processed by Author

The data collection results indicate that the majority of respondents were female. This is likely due to some male potential respondents declining to be interviewed due to time constraints and work constraints during data collection.

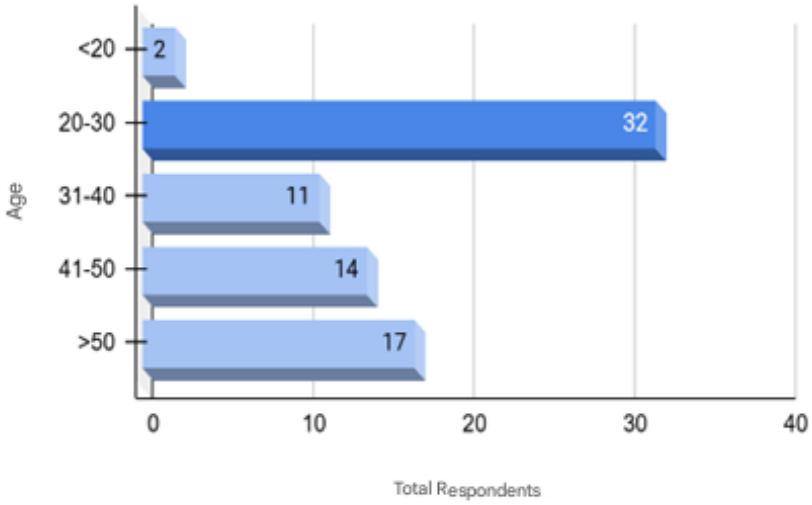

Figure 4. Number of Visitors by Age

Data processed by Author

Meanwhile, the age distribution graph shows that respondents were predominantly in the 20–30 age group. This finding indicates that individuals aged 20–30 constituted the largest proportion of respondents encountered during the data collection process. Consequently, the health complaints identified in this study largely reflect the experiences and conditions reported by participants within this age range, which should be taken into account when interpreting the overall findings of the study.

The dominance of respondents in this age group may be associated with their higher level of activity, mobility, and engagement in work or daily routines that potentially expose them to specific health risks or stressors. As a productive age group, individuals aged 20–30 often experience transitional life phases that may influence both physical and psychological health conditions, thereby shaping the pattern of complaints reported in this study.

Furthermore, the concentration of respondents within this age range suggests that the findings should be interpreted with caution when generalizing to older or younger populations. While

the results provide valuable insights into health complaints among young adults, differences in lifestyle, physiological conditions, and health awareness across age groups may lead to varying health experiences beyond the 20–30 age category.

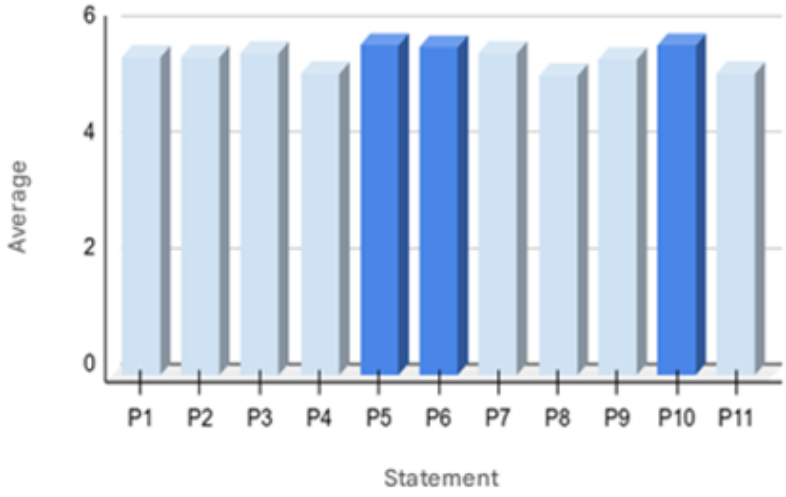

Figure 5. Average Visitor Satisfaction Level per Question

Data processed by Author

The results of the data analysis on the average rating scale graph show that most statements received an average score above five. Given that the researcher used a scale ranging from 1 to 6, this score indicates that the overall quality of service provided by the community health center falls into the good to very satisfactory category. Three statements received the highest average scores: statements 5 and 10, "The cost is still reasonable," with a score of 5.68, and statement 6, with a score of 5.66. Statement 5 concerns the cleanliness and comfort of the service area; statement 6 concerns visitors feeling safe and comfortable while at community health center X; and statement 10 concerns the relatively reasonable cost of medical service

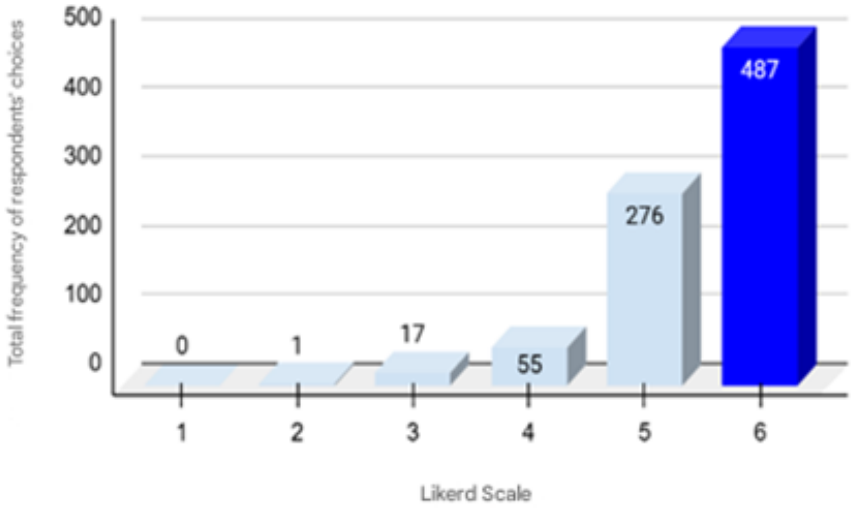

Figure 6. Highest Frequency of Respondents' Answers

Data processed by Author

These findings align with the frequency graph of respondents' responses, where the score of 6 was the most dominant. The predominance of "very satisfied" ratings reinforces the conclusion that the community health center's services are positively perceived by the majority of respondents.

Environmental Observations/Visit

Environmental and waste management at the Community Health Center (Puskesmas) is structured throughout all service areas. Each unit has three different waste bins categorized according to waste type: plastic medical waste bins for clinical waste, safety boxes for syringes and sharps, and inorganic waste bins for waste such as packaging and other non-medical materials. This separation system facilitates waste management at the source and reduces the risk of cross-contamination in the service area.

The Puskesmas also has an organized waste processing facility, including disposal areas for solid waste, infectious medical waste, and Hazardous and Toxic Materials (B3) waste. In the infectious waste area, a dedicated freezer is available for storing medical materials or tissues resulting from healthcare procedures. The Puskesmas uses a third-party service to transport the infectious waste every two days. Furthermore, air conditioning (AC) is provided in the infectious waste room to slow bacterial growth and maintain the temperature to prevent the waste from causing odors or additional biological risks.

This health center is even equipped with a Wastewater Treatment Plant (WWTP) that has a process flow including a septic tank, holding tank, and equalization tank. In each tank, liquid waste is processed through sedimentation and filtration until its chemical content is significantly reduced. Evidence of the success of this process is seen in how fish can live normally in the treated water in the final tank, this indicates that the hazardous chemicals have been decomposed. The treated water is also used to water the plants at Health Center X, and the sediment products such as spores or fungi formed from the processing process are also reused as organic plant fertilizer, thus supporting more environmentally friendly and sustainable environmental management.

Conclusion

The implementation of risk management at Community Health Center X in 2025 demonstrated that the organization had systematically implemented a risk management process in accordance with the ISO 31000 framework, encompassing the stages of risk collection, analysis, evaluation, and control. The study results showed that Community Health Center X successfully identified 91 risks, all of which remained within the 82 risk categories and scope established by the Ministry of Health, demonstrating that the identification process was carried out comprehensively according to operational needs. The six priority risks identified, related to TB facilities, maternal care layout, limited parking, lack of Yankestrad space, shortage of acupressure human resources, and non-compliance with patient identification, represent operational, presence, and reputational risks that require ongoing mitigation. Mitigation measures, such as TB room relocation, delivery room restructuring, and patient safety training, align with the risk treatment principles in ISO 31000 and have been shown to reduce risk levels in subsequent monitoring. From the perspective of Hopkin's (2017) risk management theory, Community Health Center X has also implemented the concept of risk retention for risks that cannot be eliminated, particularly related to limited parking space, where the risk is accepted because it is beyond the facility's control capacity. In addition, the 0.1% budget allocation for risk financing indicates the implementation of a risk financing mechanism that aims to provide a reserve fund for contingency conditions, in accordance with the principles of BS 31100 and ISO 31000. The questionnaire results showed a high level of visitor satisfaction (dominant score 5–6), which indicates that the risk management implemented not only strengthens the safety and quality of services, but also has a positive impact on the perception and experience of service users. Management of medical waste and liquid waste through sorting, routine transportation, and wastewater treatment shows alignment with environmental risk control that reduces the potential for biological and chemical risks.

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Suggestion

In line with ISO 31000 theory, which emphasizes the importance of integrating risk management into all organizational processes, Community Health Center X is recommended to strengthen its planning and service layout, particularly in the TB, strategic health services, and acupressure service areas, to ensure optimal and consistent risk treatment. Strengthening human resource competencies through regular training related to patient safety, patient identification, and traditional health services is necessary to support the effectiveness of human-based risk control. Furthermore, as part of risk sharing and risk avoidance, Community Health Center X can establish strategic coordination with local governments or external parties to find solutions to parking space limitations that cannot be addressed through risk retention. Quarterly risk monitoring mechanisms need to be strengthened to ensure a continuous cycle of risk monitoring and reporting (monitoring reviews). A risk-based budgeting approach should be used to align budget allocations with actual risk levels, allowing for more targeted, measurable, and sustainable mitigation strategies, in accordance with good risk governance principles.

References

Adepoju, A. H., Hamza, O., Collins, A., & Austin-Gabriel, B. (2025). Integrating Risk Management and Communication Strategies in Technical Research Programs to Secure High-Value Investments. *Gulf Journal of Advance Business Research*, *3*(1), 105-127.

Adji, A. S. (2024). Analysis of Ministry of Health Regulation No. 30 of 2022 on Hospital Service Quality In Indonesia. ARRUS Journal of Social Sciences and Humanities, 4(3), 310-318. https://doi.org/10.35877/soshum2582

Afiyah, N., & Ayuningtyas, D. (2023). Factors influencing the implementation of health service quality governance in puskesmas: systematic review. Asian Journal of Healthy and Science, 2(3), 130-147. https://doi.org/10.58631/ajhs.v2i3.36

Alhammadi, O. A. S., Othman, Z. K., Udokang, E. I., Sarfraz, T., Okesanya, O. J., Ogaya, J. B., & Lucero-Prisno III, D. E. (2025). Shaping the future of medical laboratory practices in Somaliland: a review of the current standards. *Discover Applied Sciences*, *7*(7), 730. https://doi.org/10.1007/s42452-025-07350-1

Aljuaid, T. H., Alqahtani, K. M., Altwaijri, S. A., Bokhamsin, T. H., Alshaghroud, S. M., Alrashed, M. A., ... & Alshammari, B. G. (2021). The role of public hospitals in providing free healthcare services: enhancing accessibility and promoting positive health outcomes for communities. International journal of health sciences, 5(S1), 1545-1565. https://doi.org/10.53730/ijhs.v5nS1.15433

Amin, M. E., Hafidah, N., Gozali, D. S., Faisal, A., Tornado, A. S., Irawan, R., & Firdaus, A. (2020). Public Understandings of Healthcare Services Regulations. Systematic Reviews in Pharmacy, 11(3). https://doi.org/10.5530/srp.2020.3.49

Auraaen, A., Saar, K., & Klazinga, N. (2020). System governance towards improved patient safety: key functions, approaches and pathways to implementation. OECD Health Working Papers, (120), 0_1-116. https://doi.org/10.1787/2abdd834-en

Aven, T. (2012). Foundational issues in risk assessment and risk management. Risk Analysis: An International Journal, 32(10), 1647-1656. https://doi.org/10.1111/j.1539-6924.2012.01798.x

Ayuwulantari, N., Septian, E., & Sutabri, T. (2024). Analisis Manajemen Resiko Sistem Informasi Elekronik Puskesmas (Siepus) Pada Puskesmas Xyz Menggunakan Iso 31000. Betrik, 15(03), 425-432.

Beaussier, A. L., Demeritt, D., Griffiths, A., & Rothstein, H. (2016). Accounting for failure: risk-based regulation and the problems of ensuring healthcare quality in the NHS. Health, risk & society, 18(3-4), 205-224. https://doi.org/10.1080/13698575.2016.1192585

Brown, E. R. (1991). Community action for health promotion: A strategy to empower individuals and communities. International Journal of Health Services, 21(3), 441-456. https://doi.org/10.2190/AKCP-L5A4-MXXQ-DW9K

Fadhel, R., & Alqurs, A. (2025). Enhancing Occupational Health and Safety Through Strategic Leadership: The Mediating Role of Total Quality Management in Hodeida Hospitals, Yemen. *Risk Management and Healthcare Policy*, 823-842. https://doi.org/10.2147/RMHP.S506296

Freudenberg, N. (2004). Community capacity for environmental health promotion: determinants and implications for practice. Health Education & Behavior, 31(4), 472-490. https://doi.org/10.1177/1090198104265599

Gamalliel, N., & Fuady, A. (2024). Indonesia's new health law: lessons for democratic health governance and legislation. The Lancet Regional Health-Southeast Asia, 23.

Haemmerli, M., Powell-Jackson, T., Goodman, C., Thabrany, H., & Wiseman, V. (2021). Poor quality for the poor? A study of inequalities in service readiness and provider knowledge in Indonesian primary health care facilities. International Journal for Equity in Health, 20(1), 1–12. https://doi.org/10.1186/s12939-021-01577-1

Halawa, Y. N. E., Ginting, C. N., & Kurnia, M. A. (2022). The impact of good coorporate governance implementation and the standard of medical care on patients' satisfaction in the inpatient unit at Medan Haji General Hospital. https://doi.org/10.25311/keskom.Vol8.Iss3.1330

Hartwig, R. P., & Wilkinson, C. (2007). An overview of the alternative risk transfer market. Handbook of International Insurance: Between Global Dynamics and Local Contingencies, 925-952. https://doi.org/10.1007/978-0-387-34163-7_20

Hasnida, A., Kok, M. O., & Pisani, E. (2021). Challenges in maintaining medicine quality while aiming for universal health coverage: a qualitative analysis from Indonesia. BMJ global health, 6(Suppl 3), e003663.

Horvey, S. S., & Odei-Mensah, J. (2025). Enterprise risk management, corporate governance and insurers risk-taking behaviour in South Africa: evidence from a linear and threshold analysis. *Journal of Accounting in Emerging Economies*, *15*(1), 53-83. https://doi.org/10.1108/JAEE-08-2023-0242

Idris, H., Sangkala, M., & Syachbrani, W. (2025). Enhancing Corporate Performance Through Good Corporate Governance: Evidence from Kalla Group. *Technium Soc. Sci. J.*, *76*, 132.

Kioskli, K., Grigoriou, E., Islam, S., Yiorkas, A. M., Christofi, L., & Mouratidis, H. (2025). A risk and conformity assessment framework to ensure security and resilience of healthcare systems and medical supply chain. *International Journal of Information Security*, *24*(2), 1-28. https://doi.org/10.1007/s10207-025-01009-z

Kruk, M. E., Gage, A. D., Arsenault, C., Jordan, K., Leslie, H. H., Roder-DeWan, S., ... & Pate, M. (2018). High-quality health systems in the Sustainable Development Goals era: time for a revolution. The Lancet global health, 6(11), e1196-e1252.

Kunreuther, H. (2002). Risk analysis and risk management in an uncertain world 1. Risk Analysis: An International Journal, 22(4), 655-664. https://doi.org/10.1111/0272-4332.00057

Lahfana, Q. A. A., & Machdum, S. V. (2025). Leveraging "Asset-based community development" to improve waste management through environmental cadres. *Asian Journal of Management, Entrepreneurship and Social Science*, *5*(01), 273-293.

Mauliah, F. U., Asriati, A., & Zainuddin, A. (2025). Comparative Analysis of the Implementation of Management Functions in Community Health Centers (Puskesmas) Accredited as Paripurna and Madya in Kolaka Regency. *Journal of Engineering Science and Technology Management (JES-TM)*, *5*(2), 316-325. https://doi.org/10.31004/jestm.v5i2.305

Ongesa, T. N., Ugwu, O. P. C., Ugwu, C. N., Alum, E. U., Eze, V. H. U., Basajja, M., ... & Ejemot-Nwadiaro, R. I. (2025). Optimizing emergency response systems in urban health crises: A project management approach to public health preparedness and response. *Medicine*, *104*(3), e41279. https://doi.org/10.1097/MD.0000000000041279

Oyerinde, M. T., Aduloju, A. S., & Tajudeen, Y. O. (2025). IMPLICATIONS OF CATASTROPHIC RISK FUTURE AS ALTERNATIVE RISKS TRANSFER SOLUTION ON PERFORMANCE OF MANUFACTURING COMPANIES IN NIGERIA. *ESUT JOURNAL OF SOCIAL SCIENCES*, *10*(1).

Sarbasheva, M., Makhieva, Z., Maltsagova, A., Khadzhieva, L., & Dzhafarov, M. (2024). Sustainable development of primary health care systems. Reliability: Theory & Applications, 19(SI 6 (81)), 1602-1608.

Schwaeke, J., Gerlich, C., Nguyen, H. L., Kanbach, D. K., & Gast, J. (2025). Artificial intelligence (AI) for good? Enabling organizational change towards sustainability. *Review of managerial science*, 1-26. https://doi.org/10.1007/s11846-025-00840-x

Setiadi, W. (2025). Institutional restructuring to sustain regulatory reform in indonesia. Hasanuddin Law Review, 5(1), 120-131. https://doi.org/10.20956/halrev.v5i1.1699

Simanjuntak, E., Hasibuan, A. S., Lubis, S. P. S., Karo, S. K., Ritonga, Z., & Hulu, D. (2025). Analisis Penerapan Manajemen Resiko Pada Rekam Medis Elektronik Di Upt Puskesmas Kota Matsum. Jurnal Ilmiah Pengabdian Kepada Masyarakat (Ji-SOMBA), 4(2), 88-95. https://doi.org/10.52943/jisomba.v4i2.1901

Suryani, E. A., Alghiffari, E. K., & Siswanto, D. H. (2025). Waste management training through composting: A creative solution for the community of Sinduadi Village, Sleman. *Journal of Social and Community Development*, *2*(01), 27-37. https://doi.org/10.56741/jscd.v2i01.796

Syamsuddin, A., Murniati, S., & Nur, A. N. (2025). CSR, GCG and Company Size Impact on Profitability and Company Value. *Jurnal Ekonomi*, *30*(1), 19-47. https://doi.org/10.24912/je.v30i1.2645

Trzeciak, S., & Rivers, E. P. (2003). Emergency department overcrowding in the United States: an emerging threat to patient safety and public health. Emergency medicine journal, 20(5), 402-405. https://doi.org/10.1136/emj.20.5.402

Ugwu, C. N., Ugwu, O. P. C., Alum, E. U., Eze, V. H. U., Basajja, M., Ugwu, J. N., ... & Uti, D. E. (2025). Sustainable development goals (SDGs) and resilient healthcare systems: Addressing medicine and public health challenges in conflict zones. Medicine, 104(7), e41535. https://doi.org/10.1097/MD.0000000000041535

Ugwu, C. N., Ugwu, O. P. C., Alum, E. U., Eze, V. H. U., Basajja, M., Ugwu, J. N., ... & Uti, D. E. (2025). Sustainable development goals (SDGs) and resilient healthcare systems:

Addressing medicine and public health challenges in conflict zones. *Medicine*, *104*(7), e41535. https://doi.org/10.1097/MD.0000000000041535

Wijayanti, D., & Setyorini, C. T. (2023). Implementation of Good Corporate Governance in Public Hospitals in Indonesia: Systematic Literature Review Approach. Buletin Poltanesa, 24(1). https://doi.org/10.51967/tanesa.v24i1.2567

Yumame, J., & Morin, H. (2025). Health Regulation Changes In Indonesia: Legal And Policy Review. International Journal Of Society Reviews, 3(6), 1123-1130