

# Assessing the implementation of occupational safety and health management system in the hospital

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## Abstract

The implementation of occupational health and safety programs in hospitals aims to improve access, affordability, and quality of safe health services in hospitals. While some hospitals have implemented Occupational Safety and Health Management Systems (OSHMS), their effectiveness varies. This study aimed to examine and evaluate the effectiveness of OSHMS implementation in Hospital X. This qualitative research used a case study design. A purposive sampling technique was used in this study. The research informants selected included an OSH Committee Team of three people and seven hospital employees. This study used a combination of observation, in-depth interviews, and documentation methods to obtain comprehensive data on the implementation of OSHMS. Data analysis was conducted through a series of systematic steps, starting with the transcription of observation and interview results in textual form. The coded data were analyzed to identify patterns, meanings, and relationships between themes. Themes were analyzed deductively, focusing on policy, responsibility, and authority to act, and the review and evaluation of OSHMS. The results of this analysis were interpreted by the researcher and linked to the research context and relevant theories, resulting in useful and meaningful findings. The results showed that the hospital demonstrated a commitment to OSH through comprehensive policies and implementation efforts. However, there are still some shortcomings in terms of the person in charge of the OSH in the work unit, as well as review and evaluation mechanisms. Improvements in these aspects can help to increase the effectiveness of OSHMS implementation in hospitals.

**Keywords:** Occupational Safety and Health Management Systems, implementation, case study

## Introduction

Occupational safety and health (OSH) is a fundamental aspect that is inseparable from the smoothness and effectiveness of work processes. Therefore, various preventive and promotive efforts need to be made on an ongoing basis to minimize the potential for accidents and occupational diseases.<sup>1,2</sup> Hospitals, as complex places with various activities involving patients, medical personnel, and medical equipment, have high potential hazards. Therefore, the implementation of OSH in hospitals is very important.<sup>3</sup> Effective OSH implementation can minimize the risk of occupational accidents and occupational diseases for medical personnel, patients, and visitors.<sup>4</sup> Medical personnel who work in safe and comfortable conditions will be more focused and productive in providing services to patients. In addition, the implementation of OSH in hospitals is in line with the ethical principles of the health profession, which requires medical personnel to protect themselves and others from harm.<sup>5</sup>

Work accidents in hospitals remain a significant concern globally. Hospital adverse events (AEs) are a significant global health concern, with an estimated 43 million AEs occurring annually worldwide, causing 23 million disability-adjusted life years (DALYs).<sup>6</sup> A meta-analysis of 94 studies found that the incidence of hospital AEs was 8.6 per 100 patient admissions, with 52.6% being preventable.<sup>7</sup> Common types of AEs

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include cuts, perforations, and ulcerations, with inobservance and imprudence being the primary causes.<sup>8</sup> The occurrence of AEs has been found to increase with patient age and over time, varying by country income level.<sup>7</sup> Studies from Brazil, Chile, and Portugal reveal prevalence rates ranging from 13.57% to 63% for specific types of accidents.<sup>9-12</sup> The most common accidents involve sharps injuries and exposure to biological materials.<sup>11,12</sup> Factors associated with increased risk include younger age, lower education levels, and inadequate training.<sup>9,12</sup> Nurses and nursing technicians are particularly vulnerable to accidents.<sup>10,11</sup> Accidents are more frequent during morning shifts and early weekdays.<sup>9</sup> Workplace absenteeism is influenced by factors such as advanced age, low education, and musculoskeletal injuries.<sup>10</sup> These findings underscore the importance of continued health education, proper use of personal protective equipment, and targeted interventions to reduce occupational accidents in hospital settings.<sup>11,12</sup>

Work accidents in Indonesian hospitals remain a significant concern. Studies indicate that healthcare workers, particularly nurses, face various occupational hazards. Common incidents include exposure to blood and body fluids, sharp objects, and needles.<sup>13</sup> Male workers under 35 years old are more prone to accidents, with most occurring at work locations between 6 AM and noon.<sup>14</sup> Factors influencing accident rates include knowledge of occupational safety and health, worker behavior, and implementation of safety plans and promotions.<sup>15,16</sup> While some hospitals have implemented Occupational Safety and Health Management Systems (OSHMS), their effectiveness varies. Policies and regulations alone are insufficient; proper implementation, training, and worker compliance are crucial for accident prevention.<sup>16</sup> Education level and work experience significantly affect the rate of hospital incidents.<sup>8</sup>

Evaluating the implementation of OSHMS in hospitals is essential for ensuring a safe and healthy work environment, compliance with legal requirements, and continuous improvement in occupational health and safety practices. Hospital X, a private teaching hospital located in the center of Batam City, has never been the subject of research related to the OSHMS implementation. Therefore, this study aimed to examine and evaluate the effectiveness of OSHMS implementation in Hospital X. This study is expected to provide a comprehensive overview of OSHMS implementation in Hospital X, including the identification of potential problems and recommendations for improvement to increase the effectiveness of the system in realizing a safe and healthy working environment for all workers and patients.

## Method

This qualitative research used a case study design that aimed to explore the occupational safety and health management systems in hospitals. The research was conducted in Hospital X, a private teaching hospital located in the center of Batam City in November 2022.

A purposive sampling technique was used in this study. This technique was chosen because it allows the researcher to selectively select informants who are considered the most relevant and informative for the purpose of the study. In this context, the selected informants had in-depth knowledge and experience related to OSH and work accidents in hospitals. The research informants selected included an OSH Committee Team of three people and seven hospital employees. The OSH Committee team was selected because they have in-depth knowledge and experience related to OSH in hospitals, so they can provide valuable information about the implementation of OSHMS. The selected hospital employees were at a high risk of being affected by occupational accidents. They were selected because they have greater potential exposure to hazards than other employee groups do. This allowed the researcher to gain a more diverse and in-depth perspective on the experiences and impacts of occupational accidents.

This study used a combination of observation, in-depth interviews, and documentation methods to obtain comprehensive data on the implementation of OSHMS. Observation is carried out to directly see and understand the situation regarding the implementation of OSHMS, as well as to observe the activities, events, and behavior of people or groups of people related to the OSHMS implementation. These data support the validity of the data obtained from the interviews and provide a clearer picture of the practice of OSHMS implementation in the field. In-depth interviews aimed to obtain in-depth information about the implementation of OSHMS from various points of view and understand the knowledge and experience of informants related to OSHMS. Researchers have also documented the research process and findings obtained to increase the credibility of the research and assist researchers in analyzing and interpreting the data.

Data analysis was conducted through a series of systematic steps, starting with the transcription of observation and interview results in textual form. The researcher then identified and categorized the data based on the emerging themes. The coded data were analyzed to identify patterns, meanings, and relationships between themes. Themes were analyzed deductively, focusing on policy, responsibility, and authority to act, and the review and evaluation of OSHMS. The results of this analysis were interpreted by the researcher and linked to the research context and relevant theories, resulting in useful and meaningful findings.

## Results

### Policy

Based on interviews and document reviews, the hospital demonstrated a strong commitment to worker and patient safety. This is supported by the comprehensive OSH policy. The hospital has an OSH policy that is written, dated, and contains clear goals, objectives, visions, and missions. The OSH policy was developed through a participatory process involving the head of the installation and the workforce. The OSH policy is also effectively communicated to all workers through various educational media such as training, simulations, and demonstrations.

Table 1. Audit results of OSH policy criteria according to Government Regulation No. 50 of 2012 at Hj. Bunda Halimah Hospital

No	Audit Criteria Based on Indonesian Government Regulation Number 50 of 2012	Audit Criteria and Compliance/Related Documentation	Implementation at Hj. Bunda Halimah Hospital	Criteria
1	A documented OSH policy is established, dated, and signed by the employer or management. This policy clearly outlines the OSH aims and objectives and demonstrates a commitment to continuous improvement in OSH performance.	The company establishes a formal, dated OSH policy document that outlines its objectives and commitment to implementing OSH within the workplace	Hj. Bunda Halimah Hospital has a documented OSH policy. This policy outlines the goals, target groups, vision, mission, and a strong commitment to implementing OSH	Already appropriate
2	Employers and administrators prepare policies after consulting with workforce representatives.	The consultation process can take the form of a meeting involving P2K3 members (labor representatives), department representatives, and/or labor unions. Please refer to the minutes of the meeting for a discussion of this policy.	The policy was formulated after a deliberative process involving the heads of each hospital installation and department.	Already appropriate
3	The company communicates its OSH policy appropriately to all stakeholders, including workers, guests, contractors, customers, and suppliers.	The form of communication for this K3 policy includes postings, announcements during morning briefings, visitor ID cards, attachments in contracts, briefing materials provided to guests, notices on entry boards, induction training sessions, and other methods.	After a new policy is created, it is communicated and disseminated to all employees, including both hospital staff and external workers, and is reinforced through OSH training.	Already appropriate
4	Custom policies are formulated to respond to particular K3 concerns.	Custom OSH policies are developed based on the company's risk levels and may involve cross-departmental considerations (though they are not mandatory). For example, these policies may address issues related to explosives, radiation, alcohol, and drugs.	Custom policies are established to address various areas, including the management of Hazardous and Toxic Materials, occupational health services, fire prevention and control, hospital infrastructure management concerning occupational safety and health, and medical equipment management.	Already appropriate
5	The OSH policy, along with other specific policies, is periodically reviewed to ensure alignment with changes in the company and relevant laws and regulations.	There is a mechanism in place to periodically review the contents of the policy, such as through annual management review meetings, P2K3 meetings, or other relevant gatherings. If there are changes in the company name, management, vision, or other significant factors, the policy must be revised accordingly. The review schedule should also be included.	A review is conducted either periodically or on an ad-hoc basis, typically during a K3 Committee meeting. However, there is currently no established schedule for periodic reviews.	Already appropriate

The OSH policy covers not only general aspects but also specific issues such as the use and management of Hazardous and Toxic Substances (B3), fire prevention and control, and overall hospital safety and security. The hospital also demonstrated a commitment to implementing the OSH policy in a sustainable manner through various efforts, such as the provision of adequate personal protective equipment (PPE) for workers, periodic and ongoing OSH training for all workers, and periodic identification and evaluation of risks in the workplace. The active involvement of the workforce in the drafting, socialization, and implementation of OSH policies demonstrates the hospital's commitment to building a strong and participatory OSH culture.

### *Responsibility and Authority*

The hospital has an OSH Committee that is formally responsible for the implementation of OSH in all areas of the hospital. However, there are no officially appointed persons in charge of the OSH in each work unit. This condition can cause confusion and inefficiency in the implementation of an OSH program at the work-unit level. The results show that officers are responsible for handling emergencies. This is a positive point shows that there is preparation to deal with critical situations that could potentially jeopardize the safety of patients and workers.

Table 2. Assessing compliance levels with OSHMS audit criteria at Hj. Bunda Halimah Hospital based on responsibility and authority

No	Audit Criteria	Explanation and Compliance/Related Documentation	Implementation at Hj. Bunda Halimah Hospital	Criteria
1	Responsibilities and authority for taking action and reporting to all parties related to the company in the area of occupational health and safety (K3) have been established, communicated, and reviewed.	There are documents that outline the responsibilities and authorities of authorized personnel and the company's management. For instance, the appointment of a Management Representative (MR) is essential for overseeing and reporting on K3 (Occupational Health and Safety). One type of document that supports this is the job description or K3 responsibilities outlined in the K3 manual, among others. It is crucial to ensure that all relevant personnel are aware of this information.	Each work unit lacks a designated person in charge	Not appropriate
2	Each work unit has a designated person in charge	There are several OSH officers designated in accordance with regulations, including the following: company doctor (Permenaker 01/MEN/1976), paramedic (Permenaker 01/MWN/1979), secretary (Permenaker 02/MEN/1992), and emergency response team (Kepmenaker 186/1999).	It has not yet been implemented/ The implementation is currently underway.	Not appropriate
3	The head of a work unit in a company is responsible for the OHS performance within that unit.	The job description provides evidence of involvement, such as participation in K3 unit performance assessments, attendance at K3 unit meetings, and monitoring of K3 unit performance.	It has not yet been implemented/ The implementation is currently underway.	Not appropriate
4	Entrepreneurs or managers are fully responsible for ensuring the implementation of OSHMS	Refer to the responsibilities of OSH management as outlined in OSH policies, OSHMS manuals, or job descriptions.	The management is fully responsible for the implementation of the Occupational Safety and Health Management System (OSHMS) at RS. Hj. Bunda Halimah. This responsibility is demonstrated by the provision of personal protective equipment (PPE), the organization of OSH training, and the conduct of health checks.	Already appropriate
5	Officers tasked with managing emergencies have been carefully selected and thoroughly trained to ensure effective response	The company's training efforts are evidenced by the training certificate, emergency training documentation, and attendance records.	The Fire/Internal Disaster Alert Command has not yet been established at Hj Bunda Halimah Hospital. Each unit is assigned a person responsible for OSH, in accordance with the Director's Decree.	Not appropriate

6	The company seeks advice from OSH experts both internally and externally.	This can include an OSH performance report from an external consultant or supervisor, as well as an internal OSH audit report, OSH inspection, benchmarking study report, or other relevant documents from within the company.	Constructive suggestions are essential. RS Hj. Bunda Halimah consistently welcomes suggestions, such as those from related agencies or comparative study results, to facilitate better improvements. However, at the time the research was conducted, there were no reports available regarding employee performance, internal audits, or similar evaluations.	Not appropriate
7	OSH performance is included in the company's annual reports as well as in other reports of equal importance.	OSH performance encompasses various metrics, including the number of accidents, accident claims, OSH achievements or awards, and the percentage of targets achieved.	The OSH Committee records the number of work accidents, instances of needle pricks among workers, and infections, as well as achievements in the implementation of occupational safety and health (OSH) initiatives. The annual reports include facility inspection reports, OSH program achievement reports, risk management assessments, reviews of standard operating procedures (SOPs) and OSH policies, and documentation of problems and obstacles encountered.	Already appropriate

### Monitoring and Evaluation

The mechanism for periodic monitoring and evaluation of the effectiveness of the implementation of the OHSMS in this company is not optimal. This was because the OSH Committee did not conduct monthly evaluation meetings. These findings were obtained from in-depth interviews with the informants. Based on the results of the interviews, information was obtained that the OSH Committee did not hold monthly evaluation meetings. This results in a lack of data and information related to the effectiveness of the OSHMS implementation. In addition, the absence of periodic evaluations hinders the identification and resolution of potential problems that may arise during the implementation of OSHMS. The OSHMS evaluation findings should be reported to the company's director. This information can be considered by the director in formulating policies related to improving the effectiveness of OSHMS.

Table 3. Assessing compliance levels with OHSMS audit criteria at Hj. Bunda Halimah Hospital based on monitoring and evaluation

No	Audit Criteria	Explanation and Compliance/Related Documentation	Implementation at Hj. Bunda Halimah Hospital	Criteria
1	A review of the implementation of the OSHMS including its policy, planning, implementation, monitoring, and evaluation, has been conducted and documented.	The management review meeting covers policy discussions, planning, implementation, monitoring, and evaluation. It includes details on attendance and meeting minutes.	The monthly review and evaluation processes have not been implemented in the K3 Committee meetings.	Not appropriate
2	The findings from the comprehensive review are incorporated into the management action plan	Refer to the minutes of the management review meeting to determine the corrective actions that will be taken and whether they will be included in the next annual work program.	The results of the review will be used to create a follow-up action plan, after which the evaluation results will be reported to the Director.	Already appropriate
3	Management should periodically review the implementation of the Occupational Health and Safety Management System (OHSMS) to assess its suitability and effectiveness.	The management review meeting, which follows the agenda outlined in the attachment to PP 50 of 2012, is attended by top management. It should not be confused with the monthly P2K3 meeting.	OSH Committee Members have not reviewed OSH implementation	Not appropriate

### Discussion

The study findings show that hospitals demonstrate a strong commitment to OSH through a comprehensive OSH policy, broad scope, ongoing implementation efforts, and active workforce involvement. This shows that the hospital strives to create a safe and healthy work environment for workers, patients, and visitors. Effective OHSMS implementation requires comprehensive policies, broad

scope, and continuous efforts.<sup>17</sup> However, some hospitals struggle with effective OHSMS, facing challenges in policy implementation, regulations, and infrastructure.<sup>18</sup> OHSMS programs aim to protect workers, patients, and visitors by preventing and reducing work-related risks and accidents. Factors influencing OHSMS implementation include work environment, discipline, attitude, and supervision.<sup>17,19</sup> Interestingly, knowledge and socialization were not found to be significantly associated with OHS implementation among nurses.<sup>19</sup> Developing a culture of health and safety is crucial, with the goal of promoting safe and healthy behavior among all hospital staff.<sup>20,21</sup>

Effective OHSMS programs require adequate human resources, infrastructure, and budget allocation.<sup>22,23</sup> Hospitals should establish OHS committees and appoint dedicated officers to oversee implementation.<sup>24</sup> Key elements of successful OHSMS programs include risk management, comprehensive occupational health services, and emergency preparedness.<sup>25</sup> Proper training, adherence to standard operating procedures, and provision of personal protective equipment are essential for preventing workplace accidents. Regular internal and external audits help identify shortcomings and improve OHSMS programs.<sup>24</sup>

The literature provides several key points that are relevant to the study findings regarding the mechanism for regular review and evaluation of the effectiveness of the OHSMS. The importance of regular review and evaluation of OHSMS implementation is emphasized. This includes conducting audits, monitoring performance, and ensuring that all findings are documented and used to identify corrective actions.<sup>26</sup> The findings of OHSMS evaluations should be used by management in the management review process to ensure continuous improvement and development of the OHSMS. Regular evaluations and audits are necessary for identifying areas for improvement and ensuring that the OHSMS is continuously improving.<sup>27</sup> Regular evaluations help ensure that the company is meeting these legal requirements. Effective communication and engagement of employees are essential for the success of OHSMS.<sup>28</sup> This includes regular meetings, safety committees, and sharing lessons learned.

The objective of OHS in hospitals is to safeguard and maintain the well-being of hospital employees, patients, and their companions by establishing safety standards and minimizing the risks of workplace hazards. The goal of fostering a health and safety culture is for everyone to act in a safe and healthy manner. A health and safety culture comprises of beliefs, attitudes, organizational perceptions, and norms that are related to the health and safety climate, as well as practical safe and healthy behaviors. To ensure occupational safety, it is vital to offer professional, strategic services and consistent work procedures, rather than solely relying on regulations and financial incentives. The success of the OHSMS in hospitals depends on the compliance attitudes of both the nursing staff and management in implementing and supporting OHS regulations and policies to achieve zero accidents in hospitals.

## Conclusion

The hospital demonstrated a commitment to OHS through comprehensive policies and implementation efforts. However, there are still some shortcomings in terms of the person in charge of the OHS in the work unit and the review and evaluation mechanism. Improvements in these aspects could help to increase the effectiveness of SMK3 implementation in hospitals.

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