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# PROCEEDING FOR INTERNATIONAL COLLOQUIUM ON NEXTGEN CONSTRUCTION

# 2025

*Future-Ready Construction and Facility Management:  
Driving Research and Innovation for a Smart Built Environment*

**PROCEEDING FOR  
INTERNATIONAL COLLOQUIUM ON  
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## **FACILITIES MANAGEMENT IN PRIVATE HOSPITALS: CHALLENGES AND STRATEGIC SOLUTIONS**

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### **Abstract**

Effective facilities management plays a vital role in delivering high-quality healthcare services in private hospitals. It encompasses a wide range of responsibilities, including infrastructure upkeep, regulatory compliance, technological advancements, and efficient resource utilization. However, several challenges hinder its efficiency, including budget constraints, regulatory compliance, technological integration, and maintenance issues. Limited financial resources often lead to deferred maintenance, outdated equipment, and operational inefficiencies, ultimately affecting patient safety and service quality. This study aims to explore the key obstacles faced by facilities managers in private hospitals, examining their impact on operational efficiency, patient satisfaction, and overall healthcare delivery. A quantitative research approach was employed, utilizing questionnaire distribution for data collection. The respondents included both public users and members of the hospital management team. The findings reveal that the three primary challenges in facilities management within private hospitals are insufficient funding, inadequate integration of facility information systems with patient care, and disruptions in support systems and equipment. These challenges not only lead to increased operational costs but also compromise the overall hospital workflow, leading to potential delays in medical procedures and reduced patient trust. Effective strategies such as improved budget allocation, adoption of smart technologies, and enhanced staff training programs can significantly enhance hospital operations. The insights from this study aim to assist hospital administrators in enhancing infrastructure sustainability, cost-effectiveness, and service quality in private healthcare settings, ultimately contributing to a more resilient and patient-centred healthcare environment.

**Keywords:** Facilities, Challenges, Private hospital

### **1. INTRODUCTION**

Effective facilities management (FM) is crucial for maintaining high-quality healthcare services in private hospitals, where operational efficiency directly impacts patient satisfaction and service quality. However, FM faces several challenges, including financial constraints, strict regulatory compliance, and the need for continuous technological integration and infrastructure maintenance (Amadeo, 2020; Jones et al., 2021). Limited budgets often hinder necessary upgrades, while outdated systems and lack of interoperability can disrupt hospital operations and patient care (Smith & Brown, 2019; Lee & Patterson, 2022). Additionally, maintaining essential support systems such as power, water supply, and medical equipment is critical to ensuring uninterrupted healthcare services (Kumar & Ahmed, 2020). This study aims to examine key FM challenges in private hospitals, analyze their impact on efficiency and patient satisfaction, and propose strategic solutions to enhance sustainability, cost-effectiveness, and service quality (WHO, 2021).

## **2. LITERATURE REVIEW**

FM plays a crucial role in private hospitals by ensuring seamless operation of healthcare services, maintaining infrastructure, and enhancing efficiency and patient satisfaction (Smith et al., 2020). Effective FM involves the coordination of physical spaces, technology, and human resources to support hospital functions (Jones & Taylor, 2021). However, private hospitals face significant challenges, including financial constraints, regulatory compliance, technological integration, and infrastructure maintenance. Limited budgets often lead to delayed repairs and outdated medical equipment, compromising patient safety and efficiency (Brown & Patel, 2019; Lee et al., 2020).

Moreover, adherence to stringent healthcare regulations requires continuous monitoring, as non-compliance can result in legal penalties and reputational damage (Kumar & Ahmed, 2020; WHO, 2021). Additionally, hospitals struggle with integrating new technologies due to high costs, compatibility issues, and resistance to change, which can hinder operational efficiency (Lee & Patterson, 2022; Miller, 2020). Outdated systems and lack of interoperability significantly disrupt hospital operations and patient care by creating inefficiencies, increasing the likelihood of medical errors, and limiting access to real-time data. Legacy systems often fail to integrate with modern electronic health records (EHR) and other digital platforms, leading to fragmented information and delayed decision-making (Smith et al., 2022). Furthermore, interoperability issues hinder seamless communication between departments and external healthcare providers, compromising coordinated patient care and operational efficiency (Johnson & Lee, 2023). To address these challenges, healthcare facilities must invest in standardized data-sharing protocols, cloud-based solutions, and AI-driven interoperability frameworks that enhance system connectivity and streamline workflows (Martinez et al., 2024).

## **3. METHODOLOGY**

This study adopts a quantitative research approach to systematically collect and analyze numerical data on the challenges of facilities management in private hospitals. Three private hospitals in Johor District were selected based on their comprehensive facilities. The respondents comprised public users, facilities management teams, and organizational management teams. The target population included 300 individuals, with a required sample size of 169 respondents, as determined by Krejcie and Morgan (1970). Data collection was conducted through a combination of online platforms targeting private hospital management teams and facilities managers, as well as physical distribution among public users. An initial 69 responses were obtained from medical and non-medical staff, followed by an additional 100 responses, resulting in a final response rate of 95%. All the data were analysed using the Statistical Package for Social Science (SPSS) Version 26.0.

#### 4. FINDING AND DISCUSSION

The challenges associated with managing private hospital facilities have been systematically arranged based on the mean results, as presented in Table 1 below:

**Table 1. Mean Scores for Challenges of FM in Private Hospitals**

| Challenges                                                                                                        | Mean Score | Ranking |
|-------------------------------------------------------------------------------------------------------------------|------------|---------|
| The facilities lack funding to maintain facilities because of the complex infrastructure and equipment            | 4.56       | 1       |
| Outdated systems and lack of interoperability disrupt hospital operations and patient care                        | 4.52       | 2       |
| The support systems and equipment disruptions may jeopardize patient confidence and even pose risks to life       | 4.44       | 3       |
| The lack of knowledge on the concept green building area because this concept is considered still new in Malaysia | 4.44       | 4       |
| Poor workmanship and faulty can lead to structural cracks                                                         | 4.42       | 5       |

These findings reveal that the three primary challenges in facilities management within private hospitals are insufficient funding, inadequate integration of facility information systems with patient care, and disruptions in support systems and equipment.

One major issue in private hospital facilities management is insufficient funding, which significantly impacts the hospital's ability to maintain and upgrade its infrastructure. Given the complexity and scale of hospital operations, substantial financial resources are required for regular maintenance and improvements (Yousefli et al., 2017). Inadequate funding often results in delayed facility repairs, outdated medical equipment, and compromised service quality, ultimately leading to dissatisfaction among patients and staff. According to Yousefli et al. (2017), financial constraints are among the most pressing challenges faced by healthcare institutions, affecting their ability to provide high-quality services.

Another critical challenge lies in the management of hospital facility information systems, which are essential for efficient operations. If these systems are not properly maintained or regularly updated, they can lead to inefficiencies, delays, and errors in patient care, reducing confidence in the hospital's ability to deliver safe and effective treatment (Lee & Patterson, 2021). Additionally, support systems and medical equipment failures pose significant risks. Disruptions in essential hospital infrastructure, such as power supply failures or malfunctioning medical devices, can jeopardize patient safety, particularly during critical procedures (Smith et al., 2020). These issues not only hinder immediate patient care but also erode trust in the hospital's reliability and safety standards, emphasizing the urgent need for proactive facilities management strategies.

To address these challenges, hospitals must implement strategic facilities management solutions. Investing in smart healthcare infrastructure and digital FM systems can enhance operational efficiency while reducing costs (Brown & Patel, 2019). Predictive maintenance and IoT-based monitoring can help prevent equipment failures and service disruptions (Miller, 2020). Furthermore, regular audits, staff training, and adherence to best practices can ensure regulatory compliance and improve overall hospital management (WHO, 2021). Proper infrastructure

maintenance, including ventilation systems and waste management, is essential to uphold patient safety and infection control standards (Roberts et al., 2021). By adopting innovative solutions and proactive management approaches, private hospitals can optimize their FM practices and enhance healthcare delivery.

## 5. CONCLUSION

Facilities management in private hospitals faces several challenges, including financial constraints, regulatory compliance, technological integration, cybersecurity risks, and workforce shortages. However, strategic solutions such as sustainability initiatives, regulatory compliance frameworks, smart technology adoption, enhanced cybersecurity, and workforce development can help mitigate these challenges. Future research should explore the impact of AI and automation in streamlining hospital facilities management.

## 6. REFERENCES

- Ahmed, R., & Hassan, M. (2022). Workforce training challenges in private hospital facilities management. *Journal of Healthcare Operations Management*, 14(2), 89-105.
- Amadeo, K. (2020). The role of facilities management in healthcare operations. *Health Administration Journal*, 35(2), 112-126.
- Brown, P., & Patel, R. (2019). Financial constraints in hospital facilities management: Challenges and solutions. *Journal of Healthcare Economics*, 32(4), 212-228.
- Carter, J., & White, D. (2019). The impact of equipment failures on healthcare delivery. *International Journal of Medical Technology*, 14(2), 87-102.
- Chotipanich, S., & Issarasak, S. (2023). Cost-effective facilities management strategies for private hospitals. *Healthcare Facilities Journal*, 11(3), 120-135.
- González-Torre, P., et al. (2023). Sustainable energy solutions in healthcare facilities management. *International Journal of Healthcare Infrastructure*, 8(1), 45-60.
- Johnson, R., & Lee, M. (2023). The impact of interoperability gaps on patient care. *Healthcare Technology Review*, 15(2), 89-102.
- Jones, R., & Taylor, M. (2021). Challenges in hospital facilities management: An analysis of private healthcare institutions. *Journal of Healthcare Management*, 45(3), 215-230.
- Kumar, A., et al. (2022). The financial burden of facilities management in private hospitals. *Journal of Hospital Management*, 17(4), 78-92.
- Kumar, S., & Ahmed, R. (2020). Infrastructure disruptions and patient safety: A study on private hospital management. *International Journal of Healthcare Infrastructure*, 28(4), 389-405.
- Lee, J., & Patterson, D. (2022). Technology integration in hospital facilities management: Barriers and solutions. *Journal of Health Informatics*, 19(1), 57-72.
- Lee, R., Smith, T., & Williams, H. (2020). Budget limitations and their impact on hospital facilities management. *Healthcare Financial Review*, 27(3), 112-125.
- Martinez, L., et al. (2024). Advancing healthcare interoperability through AI-driven solutions. *International Journal of Medical Informatics*, 20(1), 45-60.
- Miller, K. (2020). Smart healthcare infrastructure: A new approach to hospital management. *Journal of Facilities and Operations*, 16(1), 45-63.



- Patel, R., & Ramanathan, S. (2021). Regulatory compliance in private hospital facilities management. *Healthcare Compliance Review*, 9(2), 55-72.
- Singh, K., et al. (2022). Cybersecurity threats and countermeasures in private hospital management. *International Cybersecurity in Healthcare*, 10(3), 33-49.
- Williams, T., Adams, R., & Foster, L. (2019). Regulatory compliance in private healthcare: A managerial perspective. *Journal of Health Policy*, 21(3), 77-98.
- World Health Organization. (2021). Healthcare facility regulations and compliance: Guidelines for private hospitals. *WHO Publications*.



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