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Evaluating Security Systems and Protocols to Enhance Hospital Protection at University of the Philippines Manila–Philippine General Hospital Compound

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ABSTRACT

Hospital security plays a vital role in protecting patients, healthcare workers, visitors, and institutional assets while ensuring the continuity of healthcare services. This study evaluated the security systems and protocols implemented within the University of the Philippines Manila–Philippine General Hospital (UPM-PGH) compound to establish an evidence-based basis for strengthening hospital protection. Specifically, it assessed the utilization of physical and technological security systems, determined the implementation and effectiveness of existing security protocols, identified operational challenges, and developed an enhanced security model. The study employed a sequential explanatory mixed-methods research design. Quantitative data were collected using a researcher-made survey questionnaire administered to 130 University of the Philippines Manila Police personnel and private security guards through total enumeration. Qualitative data were gathered through semi-structured interviews with 14 purposively selected participants. Findings revealed that access control and visitor pass control, perimeter barriers, and document security were highly utilized, whereas the closed-circuit television (CCTV) surveillance system was partially utilized. Legal compliance demonstrated a very high level of effectiveness, while policies and procedures, personnel training, and legal compliance received high implementation ratings. The effectiveness of policies and procedures and personnel training was also rated high. The study identified technological limitations, resource constraints, manpower challenges, and operational difficulties affecting security implementation. Based on these findings, the Hospital Security Enhancement Model was developed to address identified gaps and improve institutional protection. The study concludes that strengthening security infrastructure, improving operational procedures, and enhancing personnel capabilities are essential to ensuring a safer hospital environment. The proposed model may guide security management in public hospitals.

Keywords: *Hospital Security, Security Systems, Security Protocols, Hospital Protection, Security Personnel, Mixed-Methods Research, Hospital Security Enhancement Model*

INTRODUCTION

Hospitals play a vital role in providing healthcare services, medical education, and research. However, maintaining a safe and secure hospital environment remains a significant challenge, particularly in large public healthcare institutions with high patient volumes and continuous public access. The University of the Philippines Manila–Philippine General Hospital (UP Manila–PGH), as the country's largest government-owned tertiary hospital, serves thousands of patients, healthcare professionals, students, and visitors. Its complex operations and

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continuous delivery of medical services require effective security systems and protocols to protect lives, property, and institutional resources.

Hospital security threats, including theft, swindling, unauthorized access, and inadequate surveillance, have been recognized as continuing concerns both internationally and nationally. Overcrowding, limited security resources, insufficient surveillance coverage, and inconsistent enforcement of access control measures may further expose healthcare facilities to security vulnerabilities. These challenges emphasize the importance of strengthening physical security measures, operational procedures, and personnel capabilities.

In this regard, this study evaluates the security systems and protocols implemented within the UP Manila–PGH compound, focusing on CCTV surveillance, access control, perimeter barriers, document security, policies and procedures, personnel training, and legal compliance. Using a sequential explanatory mixed-methods approach, the study examines the extent of utilization and effectiveness of existing security measures, supported by the experiences and insights of security personnel.

Ultimately, the study aims to identify operational gaps and develop practical, evidence-based recommendations to enhance hospital protection, strengthen institutional security, and promote a safer environment for patients, employees, and visitors.

Research Objectives

This study assessed the utilization and effectiveness of security systems and protocols at UP Manila–PGH, focusing on physical and technological security measures, policies and procedures, personnel training, and legal compliance. It also identified operational challenges and security gaps as a basis for developing an enhanced, evidence-based security policy to strengthen hospital safety and protection. Specifically, the study sought to answer the following questions:

1. What is the extent of utilization of the existing physical and technological security systems in UP Manila–PGH?
    1. CCTV Surveillance System
    2. Access Control/Visitors Pass Control
    3. Perimeter Barriers
    4. Document Security
2. What is the level of implementation of the existing security system and protocols at the UP-PGH as assessed by the respondents in terms of:
    1. Policies and Procedures
    2. Personnel Training
    3. Legal Compliance
3. What is the level of effectiveness of the existing security system and protocols at the UP-PGH as assessed by the respondents in terms of:
    1. Policies and Procedures
    2. Personnel Training
    3. Legal Compliance
4. What are the challenges encountered by the UP Police and Security personnel of UP-PGH on the security system and protocols implemented?
5. From the findings of the study, what enhanced policy on the security system and protocols may be formulated?

METHODS

This study employed a sequential explanatory mixed-methods approach, consisting of two phases: quantitative followed by qualitative. The quantitative phase utilized a descriptive research design to gather measurable data through structured survey questionnaires aligned with the study's research objectives. The instruments assessed the extent of utilization of security systems, including CCTV surveillance, access control,

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perimeter barriers, and document security, as well as the implementation and effectiveness of security protocols in terms of policies and procedures, personnel training, and legal compliance.

The respondents comprised 130 security personnel, consisting of 16 UP Manila Police personnel and 114 private security guards assigned to various areas of the University of the Philippines Manila–Philippine General Hospital (UPM-PGH) compound. Total enumeration sampling was employed to include the entire identified population. Quantitative data were analyzed using frequency, percentage, and mean to determine the extent of utilization, implementation, and effectiveness of existing security practices.

The qualitative phase was conducted to further explain and support the quantitative findings. Fourteen (14) informants were selected through purposive sampling based on their relevant experience and direct involvement in hospital security operations. Data were gathered through semi-structured interviews focusing on challenges encountered, security gaps, operational concerns, and recommendations for improving existing security systems and protocols. The interview responses were analyzed thematically to identify recurring patterns and significant insights. Member checking was also conducted by allowing participants to review and validate their responses, thereby strengthening the credibility and trustworthiness of the qualitative findings.

Research Design

The study employed a Sequential Explanatory Mixed-Methods Research Design, consisting of quantitative and qualitative phases. The quantitative phase used a descriptive method and structured questionnaires to assess the utilization of security systems, including CCTV, access control, perimeter barriers, and document security, as well as the implementation and effectiveness of policies and procedures, personnel training, and legal compliance at UP Manila–PGH. The qualitative phase involved interviews to explain the quantitative findings and identify operational challenges, security gaps, and improvement needs. Integrating both methods enabled data triangulation, strengthened the study's conclusions, and provided an evidence-based foundation for enhancing hospital security policies and protocols.

Population and Sampling

The study population consisted of 130 security personnel assigned within the UP Manila–Philippine General Hospital (UP Manila–PGH) compound, comprising 16 UP Manila Police personnel and 114 private security guards. Total enumeration was employed for the quantitative phase, while purposive sampling was used to select 14 qualified participants for the qualitative phase based on their relevant experience and direct involvement in hospital security operations.

Table 1: *Distribution of Participants for Quantitative*

Unit	Frequency	Percentage
University of the Philippines Manila Police	16	100%
Security Guard	114	100%
Total	130	100%

Data Gathering Tool

The study utilized two researcher-developed instruments: a structured survey questionnaire and a semi-structured interview guide. The questionnaire used a four-point Likert scale to assess the utilization, implementation, and effectiveness of hospital security systems and protocols. Both instruments underwent content validation by three expert validators. A pilot test involving 15 security guards was conducted, yielding a Cronbach's Alpha of 0.985, indicating excellent reliability. The interview guide contained open-ended questions to explore security challenges and operational concerns.

Data Gathering Procedure

The interview data were analyzed using Braun and Clarke's (2006) six-phase thematic analysis: (1) familiarization with the data, (2) generation of initial codes, (3) development of candidate themes, (4) review of

themes, (5) definition and naming of themes, and (6) production of the final analytical report. Interview transcripts were repeatedly reviewed, significant statements were coded, related responses were compared across participants, and recurring patterns were organized into themes aligned with the research objectives. The analysis identified five (5) principal themes: resource and infrastructure constraints; policy enforcement and public compliance challenges; manpower and operational capacity challenges; communication and interdepartmental coordination; and organizational and environmental factors.

Ethical and Confidentiality Considerations

The study secured ethical approval from the Philippine College of Criminology Graduate School Institutional Ethics Review Committee and necessary permissions from UP Manila–PGH authorities. It strictly observed the Data Privacy Act of 2012 (RA 10173). Participants provided informed consent, and participation was voluntary. Confidentiality, anonymity, and data security were maintained. Interview recordings were conducted only with consent, and research data were retained for two years before secure disposal.

RESULTS

The study found that UP Manila–PGH security systems are generally functional, with Access Control, Perimeter Barriers, and Document Security rated Highly Utilized, while CCTV was Partially Utilized. Policies and Procedures and Personnel Training were rated High, while Legal Compliance was Very High in effectiveness. Five qualitative themes revealed operational challenges, leading to the development of the Hospital Security Enhancement Model (HSEM) to strengthen hospital protection.

Resource and Infrastructure Constraints in Hospital Security

The findings revealed that inadequate resources and infrastructure remain significant challenges in implementing security systems and protocols at UP Manila–PGH. Participants identified insufficient CCTV coverage, malfunctioning and outdated surveillance equipment, limited access control technologies, inadequate technical training, and delays in equipment maintenance and procurement. These limitations affect the ability of security personnel to monitor high-risk areas, identify individuals involved in incidents, and conduct timely investigations. Consequently, personnel often rely on manual monitoring, eyewitness accounts, and routine patrols, which require additional manpower and may delay incident verification. The findings highlight the need for improved security infrastructure, reliable surveillance technologies, adequate equipment, and continuous technical training.

Security Policy Enforcement and Public Compliance Challenges

The findings showed that inconsistent compliance with hospital security policies makes their effective implementation difficult. Participants reported recurring violations involving failure to present identification cards, unauthorized entry, improper use of watcher's identification cards, violations of the One Patient, One Watcher policy, illegal parking, and non-compliance with designated delivery procedures. Security personnel also encounter resistance, complaints, and disrespectful behavior when enforcing institutional regulations. These situations increase their workload and divert attention from patrol duties, surveillance, and incident prevention. The findings emphasize that effective hospital security requires consistent policy enforcement, stronger visitor screening, public awareness, and cooperation among employees, patients, watchers, visitors, and other stakeholders.

Manpower and Operational Capacity Challenges

The findings indicated that limited manpower and increasing operational demands affect the delivery of security services within the hospital compound. Participants explained that the large number of patients, visitors, watchers, and employees places considerable pressure on available security personnel. Officers are often required to monitor several areas, respond to incidents, manage visitors, direct traffic, and perform additional

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responsibilities. These conditions may result in reduced patrol coverage, divided attention, personnel fatigue, and delayed responses to security concerns. The findings highlight the importance of adequate staffing, proper personnel deployment, effective workforce management, and continuous operational support to maintain effective surveillance, policy enforcement, and timely incident response.

Communication and Interdepartmental Coordination

The findings revealed that communication and coordination are essential to effective hospital security operations. However, participants identified challenges involving delayed incident reporting, incomplete information, limited two-way radios, communication congestion, and inconsistent reporting procedures. These concerns may cause delays in verifying incidents, dispatching personnel, and coordinating appropriate responses among hospital departments and responding units. Participants emphasized the need for clear communication channels, standardized incident-reporting procedures, sufficient communication equipment, and stronger collaboration among concerned offices. Improving these areas can facilitate timely information sharing, coordinated decision-making, and more efficient responses to security-related incidents.

Organizational and Environmental Factors Affecting Security Operations

The findings demonstrated that the hospital's organizational structure and physical environment influence security implementation. The continuous movement of patients, visitors, healthcare workers, delivery personnel, and other individuals, together with multiple access points and round-the-clock operations, creates a complex security environment. Participants also identified overlapping responsibilities, inconsistent procedures, and the need for stronger administrative support as operational concerns. Security personnel must balance strict policy enforcement with the hospital's primary responsibility of providing accessible and uninterrupted medical services. Therefore, effective security requires sound organizational planning, management support, interdepartmental cooperation, and security strategies responsive to the hospital's operational environment.

Overall, the five themes demonstrate that strengthening hospital security requires adequate infrastructure, consistent policy enforcement, sufficient manpower, effective communication, and strong organizational support. These findings provided the basis for developing the Hospital Security Enhancement Model (HSEM), which focuses on Security Infrastructure Enhancement, Security Operations Enhancement, Security Personnel Development, and Continuous Security Improvement.

Hospital Security Enhancement Model (HSEM) Components of the Hospital Security Enhancement Model

The study developed the Hospital Security Enhancement Model (HSEM) to strengthen UP Manila–PGH security through four components: infrastructure enhancement, operational improvement, personnel development, and continuous evaluation. The model addresses identified security challenges through CCTV modernization, improved access control, effective communication, personnel training, policy enforcement, regular audits, and sustained security management.

Table 2. *Comprehensive Security Enhancement Plan Overview*

Phase	Phase Title	Activities Included	Expected Outcome
Phase I	Security Infrastructure Enhancement	A. CCTV Modernization B. Security Equipment Maintenance C. Access Control Enhancement D. Communication Equipment Upgrade	Enhanced Security Infrastructure
Phase II	Security Operations Enhancement	A. Strengthening Security Protocols B. Visitor Management C. Incident Reporting D. Communication and Coordination	Strengthened Security Operations

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Phase III	Security Personnel Development	A. Security Training B. Technology Skills Enhancement C. Emergency Response Drills D. Policy Orientation and Refresher Training	Competent and Responsive Security Personnel
Phase IV	Continuous Security Improvement	A. Security Audit B. Policy Review C. Performance Evaluation D. Continuous Improvement Planning	Sustainable Hospital Security Management

CONCLUSION

Based on the findings of the study, it can be concluded that the existing security systems and protocols implemented at the University of the Philippines Manila–Philippine General Hospital (UP Manila–PGH) generally contribute to maintaining a safe, secure, and orderly hospital environment. The high utilization of Access Control and Visitor Pass Control, Perimeter Barriers, and Document Security demonstrates that these measures are regularly implemented and serve as important components of the institution's security management system. Furthermore, Legal Compliance received a Very High rating in effectiveness, indicating strong adherence to applicable laws, regulations, and established security standards. Policies and Procedures and Personnel Training were both rated High, reflecting their contribution to organized security operations and personnel preparedness. However, the study also concludes that improvements are necessary, particularly in the utilization of the CCTV Surveillance System, which was assessed as Partially Utilized. This indicates that existing surveillance capabilities have not yet reached their full potential in supporting security monitoring, incident documentation, and investigation. Insufficient coverage, equipment limitations, and maintenance concerns emphasize the need to modernize CCTV facilities, install additional cameras in vulnerable areas, conduct regular equipment maintenance, and provide continuous technical training. Strengthening surveillance capabilities will improve incident detection, facilitate investigations, and enhance the overall implementation of hospital security measures.

The qualitative findings further establish that effective hospital security management depends not only on available security systems and established protocols but also on the operational and organizational conditions surrounding their implementation. The five identified themes Resource and Infrastructure Constraints in Hospital Security; Security Policy Enforcement and Public Compliance Challenges; Manpower and Operational Capacity Challenges; Communication and Interdepartmental Coordination; and Organizational and Environmental Factors Affecting Security Operations highlight the challenges encountered by the UP Police and Security Personnel. These findings demonstrate the importance of adequate resources, sufficient manpower, consistent policy enforcement, effective communication, interdepartmental cooperation, and administrative support in maintaining reliable security operations. Consequently, the study concludes that sustaining effective hospital security requires an integrated and continuous approach to improving security infrastructure, operational procedures, personnel competency, and institutional coordination. Regular security assessments, equipment maintenance, personnel training, policy orientation, emergency response exercises, and performance evaluations are necessary to address existing weaknesses and respond to emerging security concerns. These improvements are essential to maintaining the safety and protection of patients, visitors, healthcare workers, students, hospital property, and other stakeholders within the UP Manila–PGH compound. Finally, the study concludes that the Hospital Security Enhancement Model (HSEM) is an appropriate research output developed from the quantitative and qualitative findings. The model provides a structured approach to strengthening hospital security through four components: Security Infrastructure Enhancement, Security Operations Enhancement, Security Personnel Development, and Continuous Security Improvement. These components address the identified operational and organizational challenges while supporting the consistent implementation of the existing UP Manila–PGH Security Protocols (2021). The proposed model may also serve as a practical reference for other healthcare institutions seeking to

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improve their security systems through evidence-based, coordinated, and sustainable security management practices.

Recommendations

Strengthening Security Infrastructure. The UP Manila–PGH Administration should allocate a dedicated annual budget for security enhancement initiatives, prioritizing CCTV modernization, installation of additional cameras in blind spots and high-risk areas, preventive equipment maintenance, access control upgrades, and procurement of reliable communication devices. These improvements will strengthen surveillance, incident monitoring, and emergency response capabilities.

Strengthening Security Policy Enforcement. The UP-Manila Police Office, in collaboration with the private security service provider, should reinforce the implementation of the UP Manila–PGH Security Protocols (2021) through periodic compliance audits, standardized visitor screening, proper identification checks, documentation of violations, and public awareness campaigns to promote stakeholder cooperation and policy compliance.

Developing Security Personnel Competencies. The UP Manila–PGH Administration and security offices should establish a continuous training program covering CCTV operation, emergency response, disaster preparedness, conflict de-escalation, crisis intervention, incident command procedures, customer relations, legal updates, and security technology. Regular drills and post-incident evaluations should also be conducted to improve personnel readiness and performance.

Improving Communication and Coordination. Hospital administrators, department heads, and security offices should establish formal communication mechanisms through designated security focal persons, standardized incident reporting templates, clear emergency communication procedures, regular coordination meetings, and reliable platforms for real-time information sharing.

Adopting the Hospital Security Enhancement Model (HSEM). The UP Manila–PGH Administration should consider adopting HSEM through a phased implementation process involving security assessment, resource allocation, implementation of enhancement strategies, periodic monitoring, performance evaluation, and continuous policy improvement to strengthen institutional security management.

Encouraging Future Research. Future researchers should conduct similar studies in other government and private healthcare institutions, examine additional variables such as cybersecurity and disaster preparedness, and evaluate the long-term effectiveness of HSEM. These investigations may contribute to evidence-based security practices and improved protection of patients, healthcare personnel, visitors, and hospital property.

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