

EVALUATING TECHNOLOGY-BASED DRUG INVENTORY FRAMEWORK IN HOSPITALS VIA COBIT 2019 AND REGULATIONS

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ABSTRACT

Globalization has accelerated technological advancements, intensifying competition in business and industry. In healthcare, effective management of medical supplies, particularly through information systems, is crucial. This study evaluates the strengths, weaknesses, and challenges of drug inventory management at RSI Aminah Blitar, focusing on data accuracy, operational efficiency, and regulatory compliance in implementing a computerized Accounting Information System (AIS). The research employs a qualitative case study approach, analyzing both computerized (Khanza Application) and manual (stock cards) systems. Data was collected through direct observation, interviews with key personnel (Pharmacy Head, Logistics, and Finance), and document analysis. Framed by COBIT 2019 and hospital regulations, the findings highlight significant improvements in accuracy and efficiency through computerization. However, challenges persist, including manual-computerized system synchronization, human resource limitations, delivery delays, and invoice discrepancies. RSI Aminah Blitar aims to enhance integration and collaboration with IT to optimize drug inventory management and regulatory compliance.

Keywords: Accounting Information System, COBIT 2019, Drug Inventory.

INTRODUCTION

Globalization has accelerated technological advancements, significantly impacting business sectors, including healthcare. Accounting Information Systems (AIS) play a crucial role in enhancing operational efficiency, data accuracy, and regulatory compliance (Handayati et al., 2025). Hospitals, as healthcare providers, require effective drug inventory management to ensure timely and quality medication availability. However, complexities in inventory management, particularly in synchronizing manual and computerized systems, pose challenges (Hafizh & Abdani, 2025). This study evaluates the AIS for drug inventory at RSI Aminah Blitar, which uses both the computerized Khanza application and manual stock cards, to identify strengths, weaknesses, and implementation challenges.

Key issues in drug inventory management include data inaccuracies, operational inefficiencies, and regulatory non-compliance. At RSI Aminah Blitar, dual recording systems necessitate double-checking, increasing the risk of input errors, especially during night shifts. Limited human resources at night and reliance on manual systems exacerbate these problems. Additional challenges include discrepancies between delivery invoices and received goods, delayed deliveries, and stockouts due to supplier issues. These highlight the need for a thorough AIS evaluation to address systemic weaknesses.

The study is grounded in Mulyadi (2016) AIS theory, emphasizing integrated systems for financial and operational data management, and Marshall B. Romney (2011) Transaction Processing System (TPS) and Decision Support System (DSS) frameworks. The COBIT 2019 framework is used to assess IT governance, covering planning, implementation, and monitoring. This approach evaluates the AIS's efficiency, accuracy, and regulatory compliance.

Prior studies, such as (Crisan & Mihaila, 2023) and (Mariam et al., 2023), have examined AIS in healthcare but lack focus on manual-computerized integration challenges. Rizky et al. (2020) identified drug procurement weaknesses but offered no concrete solutions for data synchronization. Inventory is a vital current asset, ensuring operational continuity

and future profitability (Fatmasari, 2018). In hospitals, drug inventory significantly impacts service quality, necessitating proper accounting practices to maintain operational flow.

This study aims to evaluate the AIS for drug inventory at RSI Aminah Blitar, identifying strengths, weaknesses, and challenges. Theoretically, it enriches AIS literature in healthcare; practically, it provides recommendations to enhance system integration, reduce manual errors, and ensure compliance. Its novelty lies in combining COBIT 2019 with a specific case study, focusing on the manual-to-computerized transition. The findings may serve as a reference for other hospitals facing similar inventory management issues, improving healthcare service quality and contributing to health accounting literature.

LITERATURE REVIEW

Accounting Information Systems (AIS) and Their Characteristics

A system is a set of interconnected components working together to achieve a goal (Mulyadi, 2001). Its characteristics include components, objectives, boundaries, processing, and environment (Mulyanto, 2009). Components function synergistically, while objectives guide design and evaluation. Boundaries separate the system from its environment, and processing converts inputs into outputs. The environment can positively or negatively impact the system. An Accounting Information System (AIS) is a computer-based system managing financial data to produce accounting information (Yohana, 2021). According to Marshall B. Romney (2011), AIS includes Transaction Processing Systems (TPS) for efficiency and Decision Support Systems (DSS) for strategic decisions. ERP is an example, integrating business processes (Rahmawati & Yustian, 2022).

SIA Functions

SIA functions include data collection, data processing into information, and the application of controls for asset security (Romney, 2003). This system ensures that data is free from errors and fraud, making it useful for management in evaluating company performance (Setyaningsih et al., 2024).

Factors Affecting SIA Performance

The success of SIA is influenced by the principles of timely information availability, information security, and cost efficiency (Baridwan, 2010). The system must be designed to meet the needs of internal and external users, taking into account technical and non-technical aspects.

Functions and Systems in Hospitals

Hospitals are healthcare institutions that provide comprehensive medical services (Ilma, 2020). Their functions include medical treatment, health promotion, medical staff education, and health technology research and development. Hospitals use various integrated systems such as Electronic Health Records (EHR) for medical records, Pharmacy Information Systems (PIS) for medication management, and supply chain management systems for inventory management (Murtola et al., 2013).

Inventory and SIA Evaluation

Inventory is a crucial element of a company's working capital, serving to meet consumer demand. Without adequate inventory, businesses risk failing to fulfill orders, potentially disrupting operations (Pratama et al., 2020). Inventory includes assets ready for sale or use in business activities (Nuraeni & Kuswari, 2019). Improper inventory accounting can distort financial statements and asset values. Two recording methods exist: periodic (physical counts) and perpetual (real-time tracking) (Rudianto, 2012). Proper inventory management optimizes stock levels and enhances operational efficiency (Putra & Usriyati, 2011). Data integrity in inventory systems ensures quality supply availability (Li

et al., 2019). Lean Management and Just-in-Time (JIT) methods improve efficiency by minimizing waste and ensuring timely stock availability (Mousavi et al., 2019).

Evaluation of Accounting Information Systems (AIS)

The evaluation of the Accounting Information System (AIS) for drug inventory at Aminah Blitar Islamic Hospital (RSI) was conducted with a focus on several key aspects. The main aspects evaluated are as follows:

System Evaluation Using the COBIT 2019 Approach

The evaluation covers the effectiveness of computerized (Khanza application) and manual (stock cards) systems in managing drug supplies, including data accuracy, operational efficiency, and synchronization between the two systems (Gouwnalan & Tanaamah, 2023). The evaluation was conducted using the COBIT 2019 approach to assess IT governance, particularly in the Deliver, Service, and Support (DSS) and Monitor, Evaluate, and Assess (MEA) domains, which cover information quality and system quality (ISACA, 2018b).

System Evaluation Using a Regulatory Approach

The evaluation was conducted on regulatory compliance, such as the Minister of Health Regulation (Permenkes) related to drug management, including BPOM labeling standards and reorder point (ROP) policies (Kemenkes RI, 2010).

System Evaluation Using the Is Success Model Theory Approach

The Is Success Model theory by DeLone & McLean was used to evaluate the success of the system in terms of system quality (reliability of the Khanza application), information quality (accuracy of inventory data), user satisfaction (staff satisfaction), and net benefits (impact on operational efficiency) (DeLone & McLean, 2003). The evaluation method includes data triangulation through interviews with the Head of Pharmacy and logistics staff, observation of data input processes, and analysis of documents such as invoices and stock opname reports (Sugiyono, 2007). The results identified challenges such as data inconsistencies between computerized and manual systems, as well as delays in input due to human error, which require recommendations for improvement such as full integration with the Electronic Medical Record (EMR) system (Gouwnalan & Tanaamah, 2023).

METHODS

This study uses a qualitative descriptive approach to examine the implementation of accounting information systems and internal controls for drug inventory at RSI Aminah Blitar. Qualitative research replaces the term population with social situation, which consists of three interacting elements: place, actors, and activities (Spradley, 1980). Conducted at RSI Aminah Blitar in East Java, this hospital was selected based on its classification as the Best Social Enterprise 2024 by BPJS Kesehatan Kediri.

The informants selected were the Head of Pharmacy, Logistics Staff, and Finance Staff, chosen purposively due to their in-depth knowledge. Data collection involved direct observation, in-depth interviews, and document analysis over a three-month period (February–April 2025). The evaluation framework utilized COBIT 2019 and Indonesian Ministry of Health Regulation No. 74/2016 on Pharmacy Service Standards.

Research Location and Time

This study was conducted at Aminah Blitar Islamic Hospital (RSI), located at Jalan Kenari, No. 54, Plosokerep, Sananwetan District, Blitar City, East Java. Data collection was carried out during a specific period using direct observation, in-depth interviews, and document analysis to ensure a comprehensive understanding of the drug inventory accounting information system at the hospital. The research was conducted over a three-month period from February to April 2025.

Population and Sample

The research population included all parties involved in drug inventory management at RSI Aminah Blitar. The sample was selected purposively, involving key informants such as the Head of Pharmacy, Pharmacy Logistics Officer, and Finance Department Staff, who were considered to have in-depth knowledge of the system being evaluated.

Data Analysis Method

The data was analyzed qualitatively using a case study approach, starting from the data collection stage, using data reduction techniques, data presentation, and drawing conclusions. In this study, the researcher used direct data collection techniques by conducting observations in the field or relevant places. The following are some of the techniques applied: (a) Observation: This technique involves collecting data directly through observation at locations relevant to the research. (b) Interviews: This method is carried out by conducting direct question and answer sessions with informants or related parties, focusing on the application of accounting information systems and internal controls for drug supplies at RSI Aminah Blitar. (c) Documentation: This approach includes collecting, organizing, and analyzing data or information obtained from the research, such as interview recordings, photos taken during interviews, and documents at the hospital related to the accounting information system and internal control of drug supplies.

Data analysis in this study was conducted through the following steps: (a) Data Collection: The main activity of this study was to determine the components relevant to the research, based on the Regulation of the Minister of Health of the Republic of Indonesia Number 74 of 2016 concerning Pharmaceutical Service Standards at RSI Aminah Blitar. (b) Data Reduction: Repeatedly listening to the recorded interview results, then noting them in detail and carefully for analysis through data reduction. (c) Data Presentation: After data reduction, the researcher presents the data. According to Sugiyono (2018) in qualitative research, data presentation can take the form of brief descriptions, diagrams of relationships between categories, flowcharts, and others to understand the existing situation. (d) Data Verification: The next step is to draw conclusions from the analysis of the implementation of the accounting information system and internal control over drug supplies at RSI Aminah Blitar, with reference to the Regulation of the Minister of Health of the Republic of Indonesia Number 74 of 2016 and the components that have been established to evaluate the suitability of the data obtained.

To validate the findings of qualitative research using COBIT 2019, triangulation of sources, methods, and literature was carried out to ensure the credibility of the information system performance evaluation data. The aspects of credibility evaluation are as follows: (a) Source triangulation: Data is collected from multiple sources and the results are verified through consensus among different parties to increase credibility. (b) Method triangulation: The same method is used to evaluate data; discrepancies are resolved through confirmation with relevant sources.

RESULTS

Implementation of Accounting Information System (AIS) for Drug Inventory at RSI Aminah Blitar

The results of the study show that the implementation of an accounting information system for drug inventory at RSI Aminah in Blitar is as follows: (a) RSI Aminah Blitar has implemented an accounting information system for drug inventory management, following Indonesia's Ministry of Health Regulation No. 74/2016 on Pharmaceutical Service Standards in Hospitals. The hospital conducts processes such as planning, procurement, receiving, storage, distribution, disposal, withdrawal, administration, monitoring, and evaluation for pharmaceuticals, medical devices, and consumables. (b) Planning is the process of selecting pharmaceutical preparations and medical supplies

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to determine the types and quantities needed by hospitals (Minister of Health Regulation No. 74/2016). At RSI Aminah Blitar, planning is carried out a year in advance, starting with a summary from each unit that is combined into a hospital report. This report is submitted to the Health Office for a request for medicines to be distributed by the Health Pharmacy Installation (IFK), according to the statement of the Head of the Pharmacy Unit at RSI Aminah Blitar.

“As for calculating minimum stock levels, every year we prepare an Annual Drug Requirement Plan (RKO) for the pharmacy. For drug requests, the night shift at the pharmacy usually prepares a request form, which is then submitted to logistics. Logistics then checks which items are running low and need to be ordered.”

RSI Aminah Blitar works with official distributors to procure medicines using purchase orders (SP). There are two types of SP: standard for non-narcotic medicines and special for narcotics. Distributor salespeople collect the SP at the hospital, issue invoices, and then deliver the goods. This process ensures that medicine procurement runs smoothly and in accordance with procedures. (c) RSI Aminah fulfills pharmaceutical needs in accordance with planning (Permenkes No. 74/2016). The drug request process begins with recording by the medicine room staff (night shift) in the defecta book, then followed up by the logistics department by ordering from the distributor. Recording is done using the Khanza application, although initial recording is still manual. Based on interviews with the Logistics Department regarding medication requests, it was stated that:

“For those on night shift, make a defecta book, so this book is for recording medicines that are running out/almost running out/medicines that are running low, made by other staff in the medicine room to record the stock of these medicines, the demand is this much, and so on. After the record from the medicine room, the logistics department will check whether it is sufficient for one or two days. If it is still sufficient, I will not record it in the order request record book.”

The procedure for requesting medication carried out by RSI Aminah in Blitar is as follows:

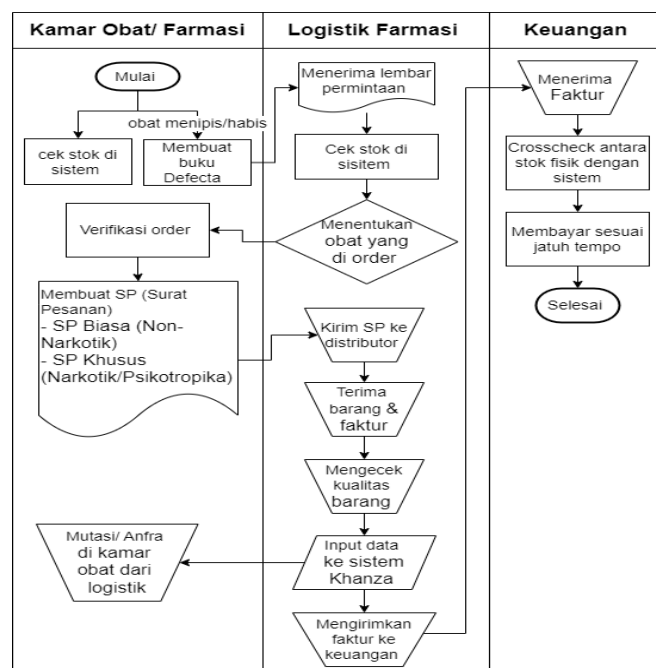


Figure 1. Medicine Demand
Source: Processed Data (2025)

Based on the flowchart above, it can be explained that: (a) The night shift pharmacy staff records medicines that are running low or out of stock in a request form or defecta book. (b) The pharmacy logistics department will receive the request form and check stock availability in the system and physically. If the stock is sufficient, no order will be placed; otherwise, if the stock is running low, a purchase order (PO) will be made to the distributor. (c) The pharmacy manager verifies special orders (narcotics/psychotropic drugs/BPJS) and issues a special purchase order (SP). If there is a discount with the distributor, it will be negotiated first. (d) The pharmacy logistics department sends the SP to the official distributor. The invoice and goods will be received simultaneously, and the quality (expiration date and damage) will be checked, which will then be entered into the Khanza system. (e) Transferring medications to the medication room/warehouse via the system (Anfra) (f) Finance will receive the invoice from Logistics, then cross-check it with stock data and the system. For payment, it will be made according to the due date (reported every 10 days).

The receipt of medicines at RSI Aminah Blitar involves checking invoices and incoming goods by the pharmaceutical logistics department. After the inspection, the drug receipt data is entered into the Khanza system. If there is a discrepancy between the invoice and the received goods, the goods may be returned or rejected. Based on an interview with the Logistics Department regarding drug receipt, it was stated that

"For the invoice receipt process, payment is made by the finance department. So, when the goods arrive, I only check the invoice and the goods, not the payment. After I input the data, there will be a record of my purchases every 10 days, which will be reported to the finance department."

The medication receipt procedure conducted by RSI Aminah in Blitar is as follows:

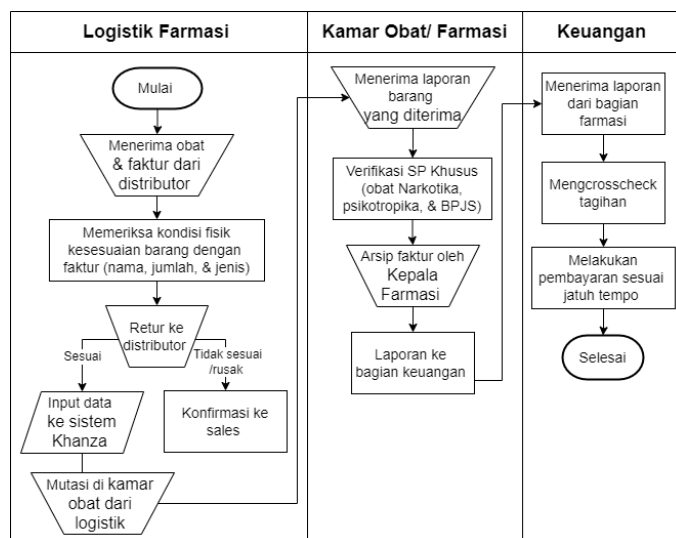


Figure 2. Medicine Receipt
Source: Processed Data (2025)

Based on the flowchart above, it can be explained that: (a) Night shift staff in the medicine room record low stock levels in the defecta book, then in the morning the records are sent to the pharmaceutical logistics department. (b) Pharmaceutical logistics rechecks the stock in the system, and if the stock is low, a Purchase Order (PO) is created and sent to the distributor. (c) The distributor sends the goods and invoice to logistics, which then verifies the quantity, expiration date (ED), and physical condition of the goods. If the goods and invoice match, they are entered into the Khanza system. The goods are then transferred (anfra) to the pharmacy or pharmacy. (d) Special PO forms, such as those for narcotics, psychotropic drugs, or BPJS, are verified by the pharmacy head. The pharmacy head also retains copies of invoices for future returns or

confirmations. (e) The pharmacy department submits some invoices to the finance department every 10 days after special orders are issued. Finance checks the consistency of stock and invoices; if they match, payment is made according to the payment due date by the treasurer based on accounting and tax verification results. If there are returns, they are deducted from the next payment.

RSI Aminah Blitar has Standard Operating Procedures (SOP) for drug storage. Drug storage is carried out by taking into account factors such as temperature, humidity, and expiration dates. Medicines are stored in the pharmacy warehouse and medicine room in a neat and systematic manner. The drug storage procedures carried out by RSI Aminah in Blitar are as follows:

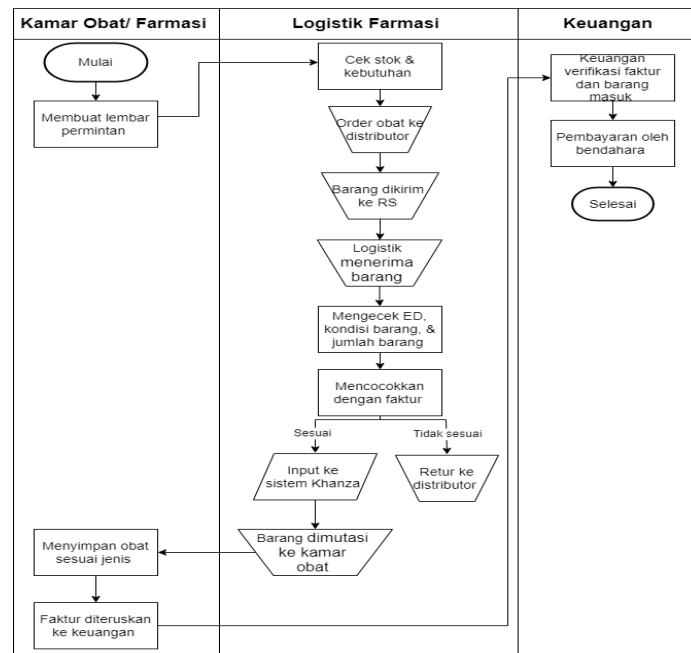


Figure 3. Drug Storage
Source: Processed Data (2025)

Based on the flowchart above, it can be explained that: (a) The night shift at the pharmacy records medicines that are running low in the defecta book to ensure the availability of medicines the next day. The report is then submitted to the pharmacy logistics department in the morning for follow-up. (b) The pharmacy logistics department then checks the existing stock of medicines and determines whether additional orders are necessary. If necessary, logistics will prepare a Purchase Order (PO) to be submitted to the distributor. (b) Once the medications arrive from the distributor, logistics verifies the consistency between the invoice, expiration date (ED), and physical condition of the goods. If there are discrepancies, the goods will be returned or rejected; those that are consistent will be entered into the system and transferred to the pharmacy. (c) Medicines are stored according to their category: regular medicines at room temperature, vaccines/insulin in a refrigerator, and narcotics/psychotropic drugs in a locked cabinet. Damaged or expired medicines are placed separately and labeled accordingly. (d) Invoices from the pharmacy are sent to the finance department every 10 days for verification. After checking and cross-checking with the stock, the treasurer will process the payment according to the due date if all data is correct.

The distribution of medicines from the pharmacy warehouse to service units such as pharmacies and medicine rooms uses the transfer system in the Khanza Application. Medicines are issued based on requests from these units. Based on an interview with the Logistics Department regarding medicine distribution, it was stated that:

“For medicines sold to pharmacies or medicine rooms, we will transfer them to the medicine room. There are also medicines for rooms, usually BMHP medicines, which will be issued to the units that need them using Khanza.”

The medicine distribution procedure carried out by RSI Aminah in Blitar is as follows:

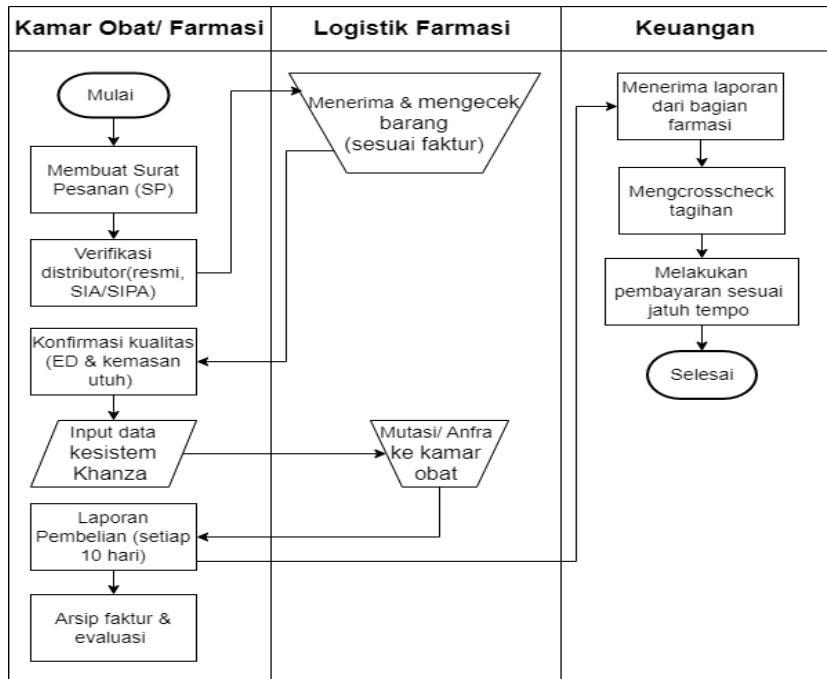


Figure 4. Distribution of Medicines
Source: Processed Data (2025)

Based on the flowchart above, it can be explained that: (a) The Head of Pharmacy prepares a drug order letter to the distributor, distinguishing between SP types for non-narcotic drugs and special SPs for narcotics/psychotropic drugs, which will be signed by the pharmacist. (b) The Pharmacy Logistics team ensures that the selected distributor is authorized and holds the necessary permits (SIA/SIPA), and verifies that the offered prices have been agreed upon. The Pharmacy Logistics team then receives the incoming goods and verifies the accuracy of the invoice and the quality of the goods. If any discrepancies are found, the goods are immediately returned. (c) The results of the goods quality check are reported by Logistics to the Pharmacy Head for approval. After obtaining approval, Logistics inputs the drug data into the Khanza information system in real-time to monitor stock and orders. (d) Medicines that have been received and verified are transferred to the Medicine Room for outpatients or to a specific room for inpatients. The Pharmacy Head reports medicine purchases to the Finance Department every 10 days for payment purposes. (e) The Finance Department then verifies the received reports and makes payments according to the due date, either via transfer or cash. Purchase invoices are archived by the Head of Pharmacy and Logistics, and distributor performance evaluations are conducted annually to assess stock availability and delivery accuracy.

The medication disposal procedure at RSI Aminah Blitar must comply with regulations set by BPJS/Kemenkes. This is important to ensure compliance with applicable rules. The recording of drug inventory at RSI Aminah Blitar is carried out using two systems, namely a computerized system (Khanza Application) and a manual system (stock cards). Transaction reporting and drug recording involve both systems. Financial reports related to drug inventory are compiled periodically. Based on interviews with the Logistics Department regarding medication inventory tracking, it was stated that:

"For inventory tracking in logistics, we already use a system. For logistics, what I do when compiling this is still manual, but once the goods arrive, the invoices are entered using the system."

Monitoring and evaluation of medication inventory are conducted through monthly stock takings. The physical inventory aims to compare the physical stock with the data in the Khanza system. Additionally, daily rundown sampling is conducted to compare the physical items with the data on the computer. Based on an interview with the Pharmacy Head regarding medication monitoring and evaluation, it was stated that:

"The physical inventory of the medication room and logistics is conducted once a month and done separately. They are usually done at the end of the month, during times when doctors are off duty (e.g., Saturdays) because medication turnover is not too high. We conduct these physical inventory counts at night because there is minimal medication movement during those hours. We use the Khanza application for the physical inventory count system, so the results are immediately visible in the system and not done manually."

Internal Control Evaluation Based on the COBIT 2019 Framework

Internal control in COBIT 2019 is a set of processes, policies, and structures to ensure that IT is aligned with business objectives, manages risk, and complies with governance and compliance requirements. Developed by ISACA (2018b), this framework includes eight assessment components: IT maturity, identification of business/IT objectives, risk management, IT-business alignment, control implementation, monitoring and evaluation, performance measurement, and communication and transparency.

COBIT 2019 emphasizes the importance of regular evaluation of IT governance maturity within an organization. At RSI Aminah Blitar, this assessment can be conducted by analyzing the effectiveness of the medication inventory accounting information system, such as the Khanza Application, and comparing it with manual record-keeping. The evaluation results help the hospital formulate strategies to enhance system integration, reduce reliance on manual methods, and ensure compliance with regulations.

COBIT 2019 highlights the need for alignment between business and IT objectives for effective governance. At RSI Aminah Blitar, the primary objective is to provide quality healthcare services, while the IT objective focuses on efficient medication inventory management. By understanding these two objectives, the hospital can design an inventory accounting system that supports operations, such as reducing stock shortages and improving data accuracy, in line with its vision of becoming an international emergency referral center.

Risk management is a key element in COBIT 2019, encompassing the identification and mitigation of IT risks. At RSI Aminah Blitar, the main risks include data inaccuracies from manual input and delays in medicine delivery. By applying COBIT risk management principles, the hospital can develop procedures such as data cross-checking and staff training to improve computer system usage.

COBIT 2019 emphasizes the importance of aligning IT with business strategy for operational efficiency. At RSI Aminah Blitar, this is reflected in the use of the Khanza Application, which supports medication management and contributes to better healthcare services. The integration of IT with business processes ensures that technology functions as a driver in achieving the hospital's objectives.

The implementation of effective controls, in accordance with COBIT 2019 principles, is important for protecting IT assets and data. At RSI Aminah Blitar, controls can be implemented through data verification, access restrictions, and system audits. These

measures prevent input errors, data loss, and system misuse, ensuring the security and reliability of the medication inventory accounting information system.

Continuous monitoring is an essential part of COBIT 2019 to ensure that IT governance runs as planned. At RSI Aminah Blitar, this is done through internal audits and user feedback collection. Evaluations help identify weaknesses in the system, such as data synchronization inefficiencies, so the hospital can take the necessary corrective actions.

COBIT 2019 provides a framework for effectively measuring IT performance. At RSI Aminah Blitar, performance measurement may include inventory data accuracy and system response time. By monitoring these indicators, the hospital can evaluate the accounting information system and make adjustments to improve performance, such as integration with the Electronic Medical Record system.

COBIT 2019 promotes effective communication between IT professionals, executives, and auditors to ensure transparency. At RSI Aminah Blitar, communication between the pharmacy, finance, and SIMRS departments is important to address operational challenges. Building a culture of openness and collaboration can improve coordination and ensure that the drug inventory accounting information system functions optimally in supporting healthcare services.

Internal Control Evaluation Based on Regulations

Regulatory controls based on the Minister of Health Regulation (Permenkes) at Aminah Blitar Islamic Hospital (RSI) are as follows:

Compliance with Permenkes No. 72 of 2016

Islamic Hospital Aminah Blitar states that their standard operating procedures (SOPs) are based on Ministry of Health Regulation (Permenkes) No. 72 of 2016. If there are changes to the Permenkes, the hospital's SOPs will be revised to align with the updates. This demonstrates a mechanism to ensure government regulations are followed and implemented in hospital operations, particularly regarding pharmacy management.

Supervision and Evaluation of Drug Distributors

The hospital supervises drug distributors to ensure stock compliance, availability of goods, appropriate prices, and handling of expired or unused drugs. Annual evaluations are conducted to assess distributor performance and decide whether to continue the partnership. This reflects the hospital's efforts to ensure distributor compliance with quality standards and applicable regulations.

Procedures for the Destruction of Expired Drugs

The hospital has procedures for the destruction of expired drugs that involve cooperation with a third party (Kesling). This process includes recording the drugs, reporting to the director and Muhammadiyah, physical destruction, and issuing a destruction report. Compliance with regulations regarding the disposal of expired drugs is also a concern for the hospital.

Evaluation of the Effectiveness of the Drug Inventory Accounting

Based on direct observations conducted by the researcher, the evaluation of the accounting information system related to drug inventory and indicator tools at RSI Aminah Blitar was measured using effectiveness indicators according to (DeLone & McLean, 2003). Criteria for an effective accounting information system include: (a) System Quality: The Khanza system used is well integrated with other services, although there are challenges such as loading issues during data backup and difficulties accessing historical data post-migration. Advantages include real-time data input and automation features, but technical challenges require improvement. (b) Information Quality: (c) Data quality is measured by accuracy, completeness, and timeliness. While double-checking practices reduce input errors, the risk of human error remains. Technologies like barcodes can reduce errors. (d) User Satisfaction: Users feel the

Khanza system is more effective than before, though slow loading remains an issue. The need for improvements in speed and ease of use is acknowledged. (e) System Usage: The system is used for various purposes, but reliance on manual processes indicates the need for further integration to improve efficiency. (f) Service Quality: Technical support is available, but the lack of formal training for new staff needs to be addressed to enhance system usage effectiveness. (g) Acceptance: System acceptance is generally good, but new staff require additional training for adaptation. Resistance to change is also a challenge. (h) The DeLone and McLean model can help explore the effectiveness of information systems, identify areas for improvement, and enhance the system.

CONCLUSION

Research on the Accounting Information System (AIS) for Drug Inventory at RSI Aminah Blitar shows that the Khanza application improves data accuracy and drug management efficiency through real-time recording, reducing human error, and speeding up distribution. However, challenges such as data synchronization between computerized systems and manual recording, human resource issues (especially night shifts), and discrepancies between invoices and goods need to be addressed to comply with regulations. Despite data input challenges and distributor coordination issues, RSI Aminah Blitar is committed to meeting regulatory requirements. Efforts to integrate with Electronic Medical Records (EMR) and evaluations using COBIT 2019 are expected to improve IT governance and data security. At RSI Aminah Blitar, business processes related to the accounting information system (AIS) for drug inventory face challenges due to limited informants and high confidentiality. To obtain comprehensive data, researchers need to expand the pool of informants, including pharmacy staff and service users. This inclusive approach is expected to support the development of hospital business processes.

Improving the effectiveness of the medication inventory AIS can be achieved through collaboration with other hospitals, earlier stock submissions, and cooperation with distributors. A just-in-time system can address stock shortages, while training and additional logistics staff are needed to address human resource limitations.

The management of expired drugs needs to be optimized through periodic destruction and third-party cooperation. Routine audits and digital technology, such as drug return applications, can improve data synchronization and regulatory compliance. This study is expected to serve as a reference for other hospitals and encourage technological innovations such as barcodes/RFID and system integration for operational efficiency in the health sector.

REFERENCES

- Baridwan, Z. (2010). *Sistem Akuntansi Penyusunan Prosedur dan Metode (5th ed.)*. BPPE.
- Crisan, E. L., & Mihaila, A. (2023). Health-Care Information Systems Adoption – a Review of Management Practices. *Vilakshan - XIMB Journal of Management*, 20(1), 130–139. <https://doi.org/10.1108/xjm-04-2021-0121>
- DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean Model of Information Systems Success: a Ten-Year Update. *Journal of Management Information Systems*, 19(4), 9–30.
- Fatmasari, F. (2018). Penggunaan Informasi Keuangan untuk Memprediksi Keuntungan Investasi Bagi Investor di Pasar Modal. *Jurnal Riset Mahasiswa*, 1–20.
- Gouwnalan, S. K., & Tanaamah, A. R. (2023). Penggunaan Framework Cobit 2019 dalam Evaluasi Tata Kelola Teknologi Informasi. *Jurnal Teknik Informatika dan Sistem Informasi*, 9(2), 1–11. <https://doi.org/10.28932/jutisi.v9i2.6373>
- Hafizh, M., & Abdani, F. (2025). Determinants of global Islamic bank profitability: A multi-country analysis. *JAS (Jurnal Akuntansi Syariah)*, 9(1).

- Handayati, P., Tham, Y. H., Yuningsih, Y., Sun, Z., Nugroho, T. R., & Rochayatun, S. (2025). ESG performance and corporate governance—The moderating role of the big four auditors. *Journal of Risk and Financial Management*, 18(1).
- Ilma. (2020). Analisis Statistik Asuhan Kesehatan Pasien Rawat Inap di Rumah Sakit Bhayangkara Padang. *Jurnal Kesehatan Medika Saintika*.
- ISACA. (2018). *Governance and Management Objectives*.
- Kemenkes RI. (2010). *Klasifikasi Rumah Sakit*. 116.
- Li, B., Guo, S., Jiang, S., & Chen, Y. (2019). Real-Time Location Managementscheme of Medical Equipment Based on RFID. *Basic and Clinical Pharmacology and Toxicology*, 125.
- Mariam, M., W. Rahardjo, T. B., & Yulius P., D. (2023). Analisis Pengelolaan Persediaan Obat di Rumah Sakit Bengkala Kota Serang. *Jurnal Manajemen dan Administrasi Rumah Sakit Indonesia (MARSII)*, 7(3), 256–264. <https://doi.org/10.52643/marsi.v7i3.3387>
- Marshall B. Romney, P. J. S. (2011). *Accounting Information Systems -12/E*. Pearson Education.
- Mousavi Isfahani, H., Tourani, S., & Seyedin, H. (2019). Lean Management approach in Hospitals: a Systematic Review. in *International Journal of Lean Six Sigma*, 10(1). <https://doi.org/10.1108/IJLSS-05-2017-0051>
- Mulyadi. (2001). *Sistem Akuntansi*. Sekolah Tinggi Ilmu Ekonomi YKPN.
- Mulyadi. (2016). *Sistem Informasi Akuntansi*. Salemba Empat.
- Mulyanto, A. (2009). *Informasi, Teori. Inventaris*. Pustaka Pelajar.
- Murtola, L. M., Lundgrén-Laine, H., & Salanterä, S. (2013). Information Systems in Hospitals: a Review Article from a Nursing Management Perspective. *International Journal of Networking and Virtual Organisations*, 13(1), 81–100. <https://doi.org/10.1504/IJNVO.2013.058441>
- Nuraeni, R., & Kuswari, K. (2019). Analisis Metode Pencatatan dan Penilaian Persediaan Barang pada PT. AGRO JABAR. *Prosiding FRIMA (Festival Riset Ilmiah Manajemen dan Akuntansi)*, 6681(2), 153–161. <https://doi.org/10.55916/frima.v0i2.29>
- Pratama, R., Saptomo, Y. H., & Sudarwadi, D. (2020). Analisis Pengendalian Persediaan dengan Metode Eoq Usaha Stan Kayu Sinar Sowi Kabupaten Manokwari. *Cakrawala Management Business Journal*, 2(2), 340. <https://doi.org/10.30862/cm-bj.v2i2.47>
- Putra, I. S., & Usriyati, S. (2011). Efektivitas Pengelolaan Sistem Informasi Akuntansi dalam Pengendalian Persediaan Obat pada Rumah Sakit Syuhada Haji Blitar. *Jurnal Kompilek*, 3(2), 80–105. <http://journal.stieken.ac.id/index.php/kompilek/article/view/35>
- Rahmawati, T., & Yustian, Y. (2022). Analisis Dampak Implementasi Enterprise Resource Planning (Erp) dan Sistem Informasi Akuntansi terhadap Pengendalian Internal. *Jurnal Riset Keuangan Dan Akuntansi*, 8(1), 62–69. <https://doi.org/10.25134/jrka.v8i1.7743>
- Rizky, A. T., Anggraini, D., Nurhayati, Y., Akuntansi, P. S., Insan, U. B., & Obat, P. (2020). *Analisis Sistem Informasi Akuntansi Persediaan Obat-Obatan*. 6(2), 139–147.
- Romney, B. M. dan P. J. S. (2003). *Accounting Information System, Ninth Edition*. Pearson Education, Inc. New Jersey.
- Rudianto. (2012). *Pengantar Akuntansi (adaptasi IFRS)*. Erlangga.
- Setyaningsih, N. D., Wahidmurni, Wahyuni, N., & Waeno, M. (2024b). Developing a corporate integrity model through Islamic social reporting (ISR) in small and medium-sized enterprises (SME) in Indonesia. *IQTISHODUNA: Jurnal Ekonomi Islam*, 13(2).
- Spradley, J. P. (1980). *Participle Observation*.
- Sugiyono. (2007). *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Alfabeta.
- Yohana, M. jeni lumban gaol. (2021). Sistem Informasi Akuntansi. *Konsep-Konsep Dasar Sistem Informasi Akuntansi*, 3. <https://pustaka.ut.ac.id/lib/wp-content/uploads/pdfmk/EKSI431203-M1.pdf>