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THE SELECTION PHASE AS THE ALPHA OF THE MANAGEMENT SYSTEM FOR MEDICINES AND CONSUMABLE MEDICAL SUPPLIES IN HOSPITALS

Muttaqin[1], Andi Selvi Kartini Wonsu[2*], Andi Widyawati[3], Deasy Mauliana[4], Ayu Indira[5]

[1, 4] Politeknik STIA LAN Makassar, Indonesia
email: muttaqin@stialanmakassar.ac.id
email : deasy@stialanmakassar.ac.id

[2*, 3,] RSUD La Mappapenning di Kabupaten Bone, Indonesia
email: andievhysam@gmail.com
email : andiwidyawati468@gmail.com

[5] RSUD Sayang Rakyat, Makassar, Indonesia
email: cantaz04@gmail.com

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ABSTRACT

Selection constitutes the initial stage (Alpha) of an efficient, effective, accountable, and sustainable management process for medicines and consumable medical supplies (CMS) in hospitals. This article details the selection phase that precedes the planning phase as part of the overall management process for medicines and CMS at La Mappapenning Hospital. The data was gathered through observation, interviews, and documentation of medicine and CMS management practices. Data analysis followed an interactive model: data collection, data condensation, data presentation, and verification/conclusion. The results indicate that the selection of medicines and CMS is carried out in an efficient, effective, accountable, and sustainable manner, serving as the alpha process or management system at La Mappapenning Hospital. Medicines and CMS are selected prior to procurement planning, based on proposals from users and reference to the national formulary, while considering their efficacy, safety, quality, and cost. The selection process involves medical staff, pharmacists, and employees from related management units. The outcome of this selection serves as the input for the medicine and CMS planning phase, which is regularly updated based on utilization evaluation at La Mappapenning Regional General Hospital in Bone Regency.

INTRODUCTION

Public health services constitute one of the government's primary responsibilities in fulfilling the community's fundamental rights, as mandated by the 1945 Constitution of the Republic of Indonesia (UUD RI 1945). According to Polii et al., (2021),), the government holds a strategic role in guaranteeing the availability of health facilities, infrastructure, and essential healthcare needs, including the provision of medicines and Consumable Medical Supplies (CMS) in hospitals and primary healthcare centers.

* Correspondence Author
Email: andievhysam@gmail.com

Concrete steps taken by the government to achieve its health development goals include providing public service platforms, such as hospitals. Law No. 17 of 2023 regarding Health states that a hospital is a health service institution that delivers comprehensive individual healthcare services through promotive, preventive, curative, rehabilitative, and/or palliative care, providing inpatient, outpatient, and emergency services. According to Tawazzun et al., (2024), hospital management is a determinant factor in the healthcare service system of a region. As an institution providing healthcare services, the management of medicines and CMS in hospitals is crucial for maintaining and improving public health. Similarly, proper hospital management is essential in supporting and conducting all aspects related to operations, finance, and service quality.

The management system for hospital services is comprehensive and includes inpatient, outpatient, and emergency care. Tawazzun et al., (2024:69) state that one form of hospital service is pharmaceutical service, which involves the management of pharmaceutical preparations, medical devices, and consumable medical supplies. Pharmaceutical preparations include medicines, medicinal ingredients, traditional medicines, and cosmetics. Medicine, meanwhile, refers to a substance or mixture of substances used for medical purposes, whether to prevent, diagnose, treat, or cure diseases. Consumable Medical Supplies (CMS) are a type of medical device or equipment intended for single use or having a limited lifespan and cannot be reused.

The Director General of Pharmaceutical and Medical Device Development (2016) suggests that pharmaceutical services in hospitals are an integral part of a patient-focused healthcare system, providing quality medicines, including clinical pharmacy services accessible to all segments of society. Pharmaceutical services function as a center of activity and a significant source of hospital revenue. More than 90 percent of hospital health services depend on pharmaceutical supplies, such as medicines, chemicals, radiological materials, consumable medical devices, medical equipment, and medical gases. Furthermore, approximately 50 percent of a hospital's total revenue is derived from the management of pharmaceutical supplies. Therefore, a meticulous, systematic, and responsible system and process for pharmaceutical supply management is required to ensure a proportional increase in hospital revenue.

The management system for medicines and consumable medical supplies (CMS) in hospitals and healthcare centers, as regulated in Law Number 17 of 2023 concerning Health, emphasizes the importance of providing quality and safe healthcare services. This law mandates healthcare providers to implement an efficient and effective management system for medicines and CMS that aligns with quality standards and patient safety. Another normative foundation is the Regulation of the Minister of Health of the Republic of Indonesia Number 72 of 2016 regarding Pharmaceutical Service Standards in Hospitals, which regulates the system and process of medicine and CMS management,

starting from the selection, planning, procurement, reception, storage, distribution, monitoring, destruction and withdrawal, control, up to the administration and reporting stages.

Fundamentally, the management system for medicines and CMS in hospitals and healthcare centers consists of several interrelated components to ensure the smooth operation, safety, efficiency, and effectiveness of their procurement, storage, distribution, and use. The availability and quality of medicine and CMS management affect service effectiveness, patient recovery rates, and public trust in healthcare institutions. Therefore, central and local governments strive to guarantee the availability of medicines and CMS in hospitals and healthcare centers by implementing a transparent, accountable, efficient, effective, and sustainable management system based on digital technology (Meilani & Lubis, 2022; Yamin & Busman, 2023).

According to Tawazzun et al. (2024), medicines and CMS in hospitals must be strictly managed or regulated, including the processes of selection, provision, storage, distribution, and disposal, in accordance with applicable standard operating procedures. Medicine management is crucial because it concerns patient safety. Proper management is necessary to ensure patients receive the correct type of medicine, dosage, and route of administration. Errors in medicine administration, such as incorrect doses or inappropriate types of medicine, can lead to serious side effects, overdose, or treatment failure. Similarly, good CMS management ensures that medical materials, such as syringes or catheters, are sterile and safe for use. Damaged, contaminated, or reused CMS can increase the risk of infection and other medical complications. Furthermore, proper inventory management of medicines prevents waste, stock-outs, or the use of expired drugs. Efficient CMS management similarly ensures that medical supplies are available whenever needed without creating unnecessary accumulation or expiration, which can increase operational costs.

The management of medicines and CMS supports the enhancement of healthcare quality. Patients receive safe and timely treatment, while healthcare personnel work efficiently without having to worry about the availability or safety of the medical supplies they use. In other words, good management of medicines and CMS, especially the selection phase (Alpha) before the planning phase, is not only essential for ensuring patient safety and health but also for guaranteeing the efficient use of health facilities, protecting medical personnel, demonstrating compliance with regulations, and safeguarding the environment from pollution.

Technical issues exist in the system and process of medicine and CMS management in hospitals and healthcare centers that can impede improvements in efficiency, effectiveness, accountability, sustainability, and patient safety assurance. One such issue is the suboptimal utilization of the Hospital Information System (SIM-RS) in the management of medicines and CMS. Furthermore, related to the implementation of the digital-based SIM-RS, problems are evident in medicine and

CMS management because the usage of certain items has not been accumulated within each unit, even though the total accumulation is registered in the Hospital Information System (HIS). The impact of this is a lack of data synchronization between units, making it difficult to track the usage and needs of medicines and CMS in real-time within specific units (Amanda et al., 2021; Indriastuti & Andriani, 2022; Subagya et al., 2023). Another management problem concerns the process of selection, procurement, and internal distribution. Although the hospital has a pneumatic tube system (PTS) for delivering medicines and CMS from the warehouse to service units (such as inpatient wards, intensive care units, general emergency room (ER), and Comprehensive Emergency Neonatal Obstetric Services Emergency Room (IGD PONEK), this system is not well-coordinated, starting from the selection stage. The consequence of the suboptimal selection and utilization of this system is the delayed distribution of medicines and CMS to the units that require them, leading to interruptions in patient care.

In relation to these issues, the storage warehouse also fails to meet technical standards due to inadequate room conditions, such as poor ventilation, damp floors, and insufficient size. Compounded by a history of flooding, these conditions accelerate the damage to medicines and CMS, potentially reducing the quality of medical services and increasing replacement costs.

The critical warning system for medicine and CMS management also remains an issue at this research locus, as, despite the availability of SIM-RS, it is not yet equipped with an integrated warning system to determine minimum stock levels or items nearing their expiration date. Likewise, the problem of feedback in the selection process for medicines and CMS as the initial stage (Alpha) of the management series is present. Consequently, the hospital often delays arranging procurement, is unaware of impending expiration dates, experiences stock shortages, or results in the waste of medicines and CMS.

Previous research on medicine and CMS management systems in hospitals indicates challenges and best practices that affect the quality of healthcare services, as follows: The study by Mahmudi et al., (2023) Previous research on medicine and CMS management systems in hospitals indicates challenges and best practices that affect the quality of healthcare services, as follows: The study by Farlinda (et al., 2017) highlighted the urgency and significance of using an effective management information system to regulate the selection, planning, and inventory of medicines and CMS in hospitals. Using technology to track stock and needs in real-time helps hospitals minimize waste and reduce the risk of stock-outs (Nashiroh et al., 2024).

Meanwhile, the findings of Hikmah & Supriatna (2021) showed that many hospitals face challenges in complying with medicine and CMS management regulations, despite those regulations governing the safe selection, planning, procurement, storage, distribution, and waste disposal of

medicines and CMS. Failure to comply with standards poses legal and health risks. The study by Suryanti & Rahayu (2024) affirmed that compliance with regulations is influenced by staff training and capacity building. Hospitals that appropriately invest resources in training tend to succeed in adhering to operational standards and maintaining the quality of medicine and CMS management.

Fardiansyah's (2018) research indicated that medicine management at the inpatient pharmacy installation of Islamic Hospital Faisal Makassar had not been optimally executed, as evidenced by the fulfilment of all its indicators. The selection stage was only satisfactory as medicines included in the planning were based on the national essential drug list. The procurement stage was not satisfactory due to budget limitations provided by the hospital and the continued presence of invoicing errors. The distribution stage was also not satisfactory, as several types of medicines were classified as slow-moving. The usage stage was satisfactory, but the arrangement of medicine storage still required attention to expedite prescription services. Therefore, improvement in management, especially the selection of medicines, was recommended to achieve standard values for all indicators.

Technical problems exist in the system and process of medicine and CMS management at the research locus (La Mappapenning Regional General Hospital) that hinder improvements in efficiency, effectiveness, and the assurance of patient safety. The problem of medicine and CMS stock-outs at La Mappapenning Regional General Hospital drew attention during the first six months of 2024, as initial interview data with the pharmacy warehouse officer (initials AR) on December 9, 2024, confirmed the stock-outs.

The trend in the number of medicine and CMS stock-outs shows fluctuation, which the authors suggest is partly due to problems in the initial stage (Alpha) of the management process, namely the selection phase of medicines and CMS. Based on preliminary observation, the medicine and CMS management system cannot yet be considered effective, as medicines reaching a stock-out level are consistently found every month in the pharmacy installation of the hospital. This is particularly true for antibiotic eye drops (Cendo Floxa MD, Cendo Natacen MD, Cendo Poygran MD), lubricant eye drops (Cendo Lyters, Sanbe tears, Cendo Hyalub MD), and corticosteroid eye drops (Cendo Ppred, Cendo Polynel). The case of these eye drops is critical for post-operative patients. Their unavailability can negatively impact the patient's condition, leading to more severe eye infections, irritation, and post-operative inflammation. In addition to eye drops, the benzodiazepine group medicine (clobazam) also experienced stock-outs, resulting in the recurrence of seizures in patients. Stock-outs were also found in the biguanide group antidiabetic medicine (Metformin), which led to increased blood sugar levels in patients. Besides medicines, several CMS items, such as surgical sutures, Foley catheters, infant and pediatric nasal oxygen cannulas, and adult nebulizer masks, also experienced stock-outs, even though CMS are used for emergency patient conditions in the hospital. This condition

underscores the necessity of conducting research on the medicine and CMS management system, specifically focusing on the alpha stage (the initial stage) of the medicine and CMS management process at La Mappapenning Regional General Hospital.

LITERATURE REVIEW

The concept of **administration** or **management** has been continuously discussed by experts from various perspectives since its inception. Initially, relevant scholars and their works included Fayol (2016), the father of modern management, who introduced fourteen (14) principles of management: division of work, authority, discipline, unity of command, unity of direction, subordination of individual interests to the general interest, remuneration, centralization, scalar chain (line of authority), order, equity, stability of tenure of personnel, initiative, and *esprit de corps* (Usman, 2022). Fayol also introduced the functions of management: planning, commanding, coordinating, and controlling. Meanwhile, Gullick and Urwich (as cited in Usman, 2022) introduced management functions that comprise Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting, collectively abbreviated as POSDCoRB. The POSDCoRB concept was developed by Luther Gulick as a functional model for management within organizations, particularly in public administration and corporations.

The thinking of these scholars positions planning as the initial stage of the management process and functions, a view followed by management experts from that time until today. However, since this research focuses on the selection phase, which precedes the planning phase as the initial stage or alpha of the process and function of medicine management, the following discussion will focus on selection as the alpha of the management system. Theoretical reviews regarding the selection (or choosing) phase as the initial stage (alpha) in the management process and functions are also explicitly and implicitly stated by several management experts. For example, Fayol (2016)), in his book *General and Industrial Management*, although not explicitly discussing the selection stage, proposed the function of organization, which implicitly encompasses the process of selection or choosing as an initial stage before the planning phase, through the placement of the right people in the appropriate positions.

An expert who explicitly states the selection process as one of the functions within a management system is Branke et al., (2007), who emphasize the importance of selection procedures used in various applications to choose the best from a limited set of alternatives. "Best" is defined based on the largest mean value, but this mean value is inferred using statistical sampling, such as in simulation optimization. The existence of various procedures raises the question of which selection procedure should be chosen.

According to Simon (1978, 2013) decision-making is the core of administration. The selection phase is part of this decision-making process, where managers choose the individuals deemed most suitable for a specific position based on established criteria. Meanwhile, Wynn (1999) states that selection is the process of choosing candidates who have submitted job applications to a certain institution. This process aims to ensure the selected individual possesses qualifications that match the organization's needs. In other words, selection is the process of gathering data about job applicants to determine who is eligible for a short-term or long-term contract position. This approach emphasizes the importance of accurate and relevant information in the selection process, serving as the initial stage in human resource management processes and functions. The selection stage is a critical initial step in the management process because it determines the individuals who will carry out the managerial functions within the organization. These various expert perspectives demonstrate that the selection stage is not just about choosing individuals but is also an integral part of planning and organization within management. Therefore, an effective and efficient selection process will significantly contribute to achieving organizational goals, including in hospital organizations that select medicines and CMS before their procurement is planned.

According to Junaedi et al., (2024), a medicine is a substance or collection of substances used to determine diagnosis, prevent, reduce, cure diseases or their symptoms, injuries, as well as physical and mental conditions in humans or animals, including for aesthetic purposes. Meanwhile, consumable medical supplies (CMS) are medical devices intended for single use, the list of which is regulated by legislation (Indriastuti & Andriani (2022).

RESEARCH METHODOLOGY

This study employed a qualitative descriptive method to analyze the selection process as the initial (alpha) stage of the management system for medicines and Consumable Medical Supplies (CMS) at La Mappapenning Regional General Hospital (RSUD). The research was conducted over a period of three months, from February to April 2025. The selection of this specific research locus was based on the fact that no prior research had been conducted on the management of medicines and CMS at La Mappapenning Hospital.

Primary data, consisting of information, was collected directly from research subjects using measurement tools or data collection methods that targeted the subjects as the desired source of information. Primary data was obtained through interviews with informants while simultaneously conducting observation. Secondary data, conversely, was collected directly by the researcher to support the primary data. The secondary data included reports on the execution of organizational tasks and functions, research findings, and other relevant documents.

The research instruments, or "supporting tools," were developed based on the source, type, data needs, and data collection techniques (e.g., observation sheets, interview guides, and document review guides). Data collection in this study was carried out through several methods: document review, interviews, and observation. Observation was conducted to understand the daily practices in the management of medicines and CMS, with a focus on the process of drug distribution to hospital units and the storage procedures for both medicines and CMS. The researcher directly observed the location and recorded findings in field notes to capture aspects that might not be revealed through interviews or documents.

Interviews were conducted to obtain in-depth information from parties directly involved in the management of medicines and CMS, including those providing input regarding the reception and use of medicines, as well as pharmacists responsible for drug distribution and storage. The interviews were structured, with the researcher preparing key questions. Each interview was recorded with the informant's permission and transcribed for further analysis (Mulyana et al., 2024).

Informants were selected using a purposive sampling technique, considering criteria such as experience, knowledge of medicine and CMS inventory management, hospital position, and direct involvement in related activities. Complementing these data collection techniques, the researcher applied a data validation technique to prove the study's scientific rigor in examining the acquired data, information, and knowledge. Data validation utilized the triangulation technique, involving checking data from various sources at the same time or from the same source at different times. The researcher also collected documents such as the Medicine and CMS Management Guidelines (containing SOPs), Performance Reports (annual and monthly reports on the effectiveness of medicine and CMS management), and Medical Record Data (to analyze medicine usage). After collecting the documents, the researcher performed content analysis to extract relevant information, paying attention to the applicable context and policies.

The data analysis technique used in this descriptive research followed the interactive model stages proposed by Miles et al., (2018), which include data collection, data condensation, data display, and verification or conclusion drawing. The research process began with on-site observation, followed by interviews (with informants), and a review of relevant documents. The researcher recorded all data, information, and knowledge in field notes, covering what was heard, seen, experienced, and felt during the research. All this information served as supporting material for the subsequent stages, with a focus on the management of medicines and CMS at La Mappapenning Hospital.

Data condensation was carried out through a selection process to simplify and transform the raw data from the field notes. This process began with summarizing, coding, topic planning, grouping,

and writing memos, with the aim of eliminating irrelevant data. Miles et al., (2018) who replaced the term data reduction with data condensation, stated that data condensation refers to the process of simplifying, selecting, abstracting, focusing, and/or transforming data from written field notes, documents, interviews, transcripts, and other empirical materials that have been collected.

Data display is the process of presenting structured information to facilitate analysis, conclusion drawing, and action taking. Qualitative data is presented in the form of narrative text, which may be supplemented by matrices, diagrams, tables, or graphs to illustrate the process. The display starts with a description of the research findings that have been classified, followed by discussion and interpretation based on relevant theories to provide a clear picture of the management of medicines and CMS at La Mappapenning Hospital. Conclusion drawing and verification involve finding and understanding meanings, patterns of regularity, explanations, and causal flows or propositions that are generated.

RESEARCH RESULTS

The research findings indicate that the selection phase in the management process of medicines and Consumable Medical Supplies (CMS) is the initial step in pharmaceutical management. Its purpose is to ensure the right availability (place, time, price, usage) in accordance with the applicable healthcare service standards in the hospital. The summary of the findings confirms that an improperly executed selection of medicines and CMS can lead to budget inefficiency, patient risk, and discrepancies in treatment and care.

Contextually, the objectives of management at the medicine and CMS selection stage are: 1) to determine the suitability of medicines and CMS for the hospital's clinical and service needs; 2) to support the effectiveness, safety, and cost efficiency in the use of medicines and CMS; 3) to process the selection in reference to national regulations, such as the National Formulary (Formularium Nasional/FORNAS); 4) to support the Rational Use of Medicine (RUM) to avoid over-prescription and potential drug resistance; and 5) to support the availability of legal, safe, quality, and affordable products for patients.

This management is meticulously conducted by the Pharmacy and Therapeutics Committee (PTC) of La Mappapenning Hospital, observing the following fundamental principles for medicine and CMS selection, as stated by an informant (Interview: DMt, March 2025): the selected medicines and CMS must meet these criteria as mentioned in the next paragraphs.

First criteria is Efficacy and Safety, where the selected medicine must have strong scientific data and evidence regarding its effectiveness in therapy. Safety data is obtained from published

clinical research results and usage experience, considering side effects, drug interactions, and pharmacokinetic and pharmacodynamic profiles.

Second, Quality and Stability, as only medicines and CMS that possess a quality test certificate from BPOM (National Agency of Drug and Food Control) or a recognized international institution are selected, ensuring the products adhere to Good Manufacturing Practice (GMP) and originate from reliable sources. Third, Adherence to Clinical Guidelines and Formulary, where the selection must align with the National Formulary (FORNAS) and the Hospital's Therapeutic Standards approved by the hospital's PTC, thus supporting cost-effectiveness in healthcare services at La Mappapenning Hospital. Fourth, Availability and Distribution, as products that are easily accessible through official distribution channels (Government Procurement Policy Agency's/LKPP's e-Catalog, registered pharmaceutical distributors) are chosen to guarantee stock resilience and supply chain stability. Fifth, Cost and Budget Efficiency, as the medicine price must be commensurate with its therapeutic benefit, achieved by comparing prices from various suppliers to obtain the best value product without compromising quality, based on pharmacoeconomic analysis during selection.

The procedure for selecting medicines and CMS at this research locus is based on the following steps. First, appointment or formation of the Medicine and CMS Selection Team. Selection is carried out by the Pharmacy and Therapeutics Committee (PTC), comprising specialist and general practitioners (as primary medicine users), clinical pharmacists (as pharmaceutical personnel with pharmacology and drug interaction knowledge), hospital management staff or team (responsible for budget efficiency), and representatives from related service units (such as inpatient unit, outpatient unit, laboratory unit, etc.).

The next step is identification of needs and periodic usage evaluation. The PTC team (doctors, pharmacists) analyzes disease trends and therapeutic needs. Specifically, the staff evaluates the types of frequently occurring cases and their pharmacotherapeutic requirements. The PTC members evaluate previous drug usage data and observe medicine and CMS usage patterns during the subsequent period. Drug effectiveness is also identified through reviewing the latest efficacy studies, and a formulary gap analysis is performed to assess whether the available medicines remain relevant to developments in medical science and the latest regulations.

Third step, development of the Hospital Formulary (Formularium Rumah Sakit/FRS). This involves adjusting La Mappapenning Hospital's formulary with the National Formulary (FORNAS) published by the Ministry of Health of the Republic of Indonesia. The team or individuals make adjustments based on the latest medical and pharmaceutical developments, while determining the medicine categories in the formulary: a) Essential Medicines (must be available under any

conditions), b) Supplementary Medicines (used in specific cases according to medical indications), and c) Specialty Medicines (only used upon approval by a specialist doctor).

Concurrent with all the activities above, and in line with the government's budget efficiency program, cost and availability evaluation of medicines/CMS at La Mappapenning Hospital is continuously performed. This is based on pharmacoeconomic analysis that assesses cost efficiency against therapeutic benefits, medicine price analysis via the Government Procurement Policy Agency's (Lembaga Kebijakan Pengadaan Pemerintah/LKPP) e-Catalog, and evaluation of the distributor/supplier viability based on order fulfillment history and product quality.

In addition to being deemed crucial in the medicine and CMS management process, the selection stage is fraught with challenges, including budget limitations, especially following the declaration of efficiency in public organizational governance. La Mappapenning Hospital, as a public health organization, faces the challenge of budget constraints in selecting medicines and CMS. The solution chosen by the management is to use a priority scale system for essential medicine selection while negotiating prices with providers. Furthermore, challenges exist regarding the availability and distribution of medicines and CMS, where some essential medicines experience national stock-outs or supply chain constraints, such as the recent case involving medicine for Low Back Pain (LBP). The solution from the hospital management is to create a reserve plan, which the researcher terms a SMART plan (specific, measurable, attainable, rational, time-bound), and to anticipate distribution delays.

Other challenges include resistance to change and compliance with regulations. Regarding the former, there are still doctors who occasionally switch the type of medicine used for a single disease or therapy, or medical personnel who are sometimes reluctant to switch frequently used medicines with more cost-effective alternatives. The hospital management's solution is to educate medical personnel and consistently enforce formulary control policies. Regarding the latter, since La Mappapenning Hospital must adhere to selection standards compliant with national regulations, the management is faced with ensuring regulatory adherence at every stage of decision-making and conducting periodic audits.

As part of the management process and principles, the selection of medicines and CMS is also periodically evaluated by the PTC using specific methods, including Drug Utilization Review (DUR), analysis of medicine and CMS usage trends based on service unit requests, formulary effectiveness audits and monitoring, and reporting and review of pharmacovigilance issues. All documented evaluation data are used for continuous improvement in the medicine and CMS selection system and to demonstrate that every decision is based on valid data and scientific evidence. The summary of the

research findings regarding selection as part of the medicine and CMS management process can be read in Table 1.

Tabel 1. Interview Results of the Selection of Medicines and Consumable Medical Supplies (CMS)

Question	Answer	Remark
How is medicine selection managed at La Mappapenning Regional General Hospital?	The medicine selection process is initiated through proposals from the users (doctors) and is then forwarded to the Pharmacy and Therapeutics Committee (PTC). This process consistently adheres to the National Formulary (FORNAS), while also considering e-Catalog data, price, domestic content level (*Tingkat Kimponen Dalam Negeri*/TKDN), corporate benefit weight (*Bobot Manfaat Perusahaan*/BMP). Evaluation of the selected medicines is conducted periodically based on drug effectiveness and safety. Furthermore, the principle of budget efficiency is always taken into consideration.	In accordance with the formulary and the doctor's proposal.
Who are the parties involved in the selection process?	The involved parties include specialist doctors, clinical pharmacists, the hospital management team, and other medical personnel with an interest in the use of medicines and Consumable Medical Supplies (CMS).	Involvement according to necessity/relevance.
Is there a specific Standard Operating Procedure (SOP) for the selection of medicines and Consumable Medical Supplies (CMS)?	Yes, the hospital possesses a specific Standard Operating Procedure (SOP) that regulates the selection of medicines and Consumable Medical Supplies (CMS). This includes the process for formulary evaluation and the mechanism for selection based on clinical effectiveness and pharmacoeconomics.	Selection in compliance with standards.
What are the main criteria considered in the selection of medicines and Consumable Medical Supplies (CMS)?	The main criteria include effectiveness, safety, availability, cost, as well as compliance with hospital service standards and national regulations.	Various criteria
Is there a process for selecting Consumable Medical Supplies (CMS) that involves consultation with specialist doctors or other medical personnel? If so, how does this communication process take place?	Yes, specialist doctors and other medical personnel provide input regarding clinical needs through periodic meetings with the Pharmacy and Therapeutics Committee (PTC) to ensure the selection of CMS is in accordance with patient needs.	Yes, there is, according to the periodic meetings.
Does the pharmacist play an active role in selecting the medicines to be used, or do they focus more on stock management?	Pharmacists play an active role in drug selection by providing pharmacoeconomic analysis, as well as evaluating drug effectiveness and safety. Furthermore, they are also responsible for stock management.	Pharmacists play a crucial role.
Does the hospital collaborate with suppliers or drug distributors in selecting the medicines or CMS (Consumable Medical Supplies) to be used?	Yes, the hospital collaborates with suppliers or distributors who are registered and have a good track record in providing medications and CMS that comply with standards.	Intensive collaboration
Does the hospital use specific technology or software to assist in the selection of medicines and CMS?	The hospital uses a computer-based pharmacy information system to manage the selection and distribution of medications, including e-catalogue technology in the procurement process.	Yes, software has been properly utilized.
Does the budget factor influence decisions in the selection of medicines and CMS? If yes, why?	Yes, budget factors are a primary consideration to ensure cost efficiency without compromising the quality and availability of the medications and CMS needed by patients.	The budget significantly influences

What are the obstacles in the medicine selection process that have been carried out so far?	Some frequently faced challenges are the limited stock of essential medications, distribution delays from suppliers, and budget limitations in the procurement of certain drugs.	There are various obstacles
What efforts have been taken to address it?	The efforts undertaken include better stock planning, optimization of the e-catalogue in procurement, and negotiations with distributors to ensure a stable supply of medicine/drugs.	Very effective problem handling through collaboration.

Source: Research results (Wonsu, 2025).

Based on the research findings, the selection stage in the management process for medicines and Consumable Medical Supplies (CMS) at La Mappapenning Hospital in Bone Regency is already appropriate. This stage serves as the primary foundation in pharmaceutical management, determining the effectiveness and efficiency of medicine and CMS provision services at the hospital or healthcare center. The selection is consistently carried out according to the principles of evidence-based medicine, systematically implemented by the Pharmacy and Therapeutics Committee (PTC), and considers the aspects of efficacy, safety, availability, and cost. Thus, by having an appropriate and accurate medicine and CMS selection stage, La Mappapenning Hospital can avoid budget inefficiency, guarantee patient safety, support the rational use of medicine, and provide optimal pharmaceutical services to the community.

DISCUSSION

Based on the research findings concerning the medicine and CMS management process at the research locus (La Mappapenning Regional General Hospital in Bone Regency), the selection phase is appropriate in terms of its objectives, objects (medicines and CMS), process (procedures compliant with SOPs and regulations), and actors involved. This stage is highly critical as the initial step in medicine and CMS management for several reasons, as explained in the results.

These findings align with the views of experts and researchers that the selection of medicines and CMS in hospitals is not merely about determining a shopping list, but a crucial stage in hospital pharmacy management that profoundly determines the quality of healthcare services for patients. If the selection is not conducted properly, the consequences are continuous throughout the subsequent stages of medicine and CMS management. Patients may not receive appropriate medication, hospital budgets are wasted (inefficiency), and patient safety risks may even arise.

Referring to the Regulation of the Minister of Health of the Republic of Indonesia Number 72 of 2016, the rhetorical question posed in the research findings regarding why medicine and CMS selection is considered crucial can be understood and answered. Imagine a scenario where the hospital lacks the necessary antibiotics for a patient with a severe infection, or conversely, purchases a large quantity of rarely used medication. This phenomenon can lead to waste or inefficiency, drug stock-outs, or even patient safety issues. Therefore, the selection of medicines and CMS, according to the

regulation, must consider several key factors: Effectiveness (Efficacy) and Safety, to ensure the drug is proven effective and safe for the patient and that its benefit is truly evidenced; Product Quality and Stability, verifying that it is guaranteed by the National Agency of Drug and Food Control (*Badan Pengawas Obat dan Makanan*/BPOM) and meets established standards; Adherence to Healthcare Standards, checking for compliance with the National Formulary; Supply Availability, evaluating whether the item is easily obtainable or frequently scarce, which relates to the case of medicine for Low Back Pain (LBP) mentioned previously (Hartvigsen et al., 2018; Wonsu et al., 2025); and finally, Reasonable Price, assessing if the cost is in line with the hospital budget and principles of cost-effectiveness.

The selection of medicines and CMS at the research locus is carried out by a specific team or individual known as the Pharmacy and Therapeutics Committee (PTC). According to experts and researchers (Astriani, 2018; Fardiansyah, 2018; Junaedi et al., 2024; Nugroho et al., 2022; Nuryadin et al., 2025; Polii et al., 2021; Subagya et al., 2023), the appointed team is responsible for compiling the list of medicines and CMS needed by the hospital, with a membership composition that includes: specialist and general practitioners (those who prescribe and understand patient needs), clinical pharmacists (who understand pharmacology and drug side effects), hospital management (responsible for budget utilization), and representatives from service units (as each unit has different medicine needs).

According to Fardiansyah (2018) the analysis of medicine and CMS needs is based on several factors: frequently handled patient disease data, historical usage of medicine and CMS, the frequency of drug use (often vs. rarely used), and the safety and effectiveness of drugs according to the latest studies. The outcome is the Hospital Formulary (Formularium Rumah Sakit/FRS), the official list of medicines and CMS permitted for use in the hospital, which must comply with the National Formulary (FORNAS) issued by the Ministry of Health of the Republic of Indonesia. This FRS is updated periodically to adapt to therapeutic developments and applicable regulations.

As stated in the research findings, every stage of the medicine and CMS management process is accompanied by challenges, consistent with the opinion of experts and researchers (Astriani, 2018; Junaedi et al., 2024; Nuryadin et al., 2025; Polii et al., 2021; Subagya et al., 2023). A classic challenge is the limited budget, coupled with government directives for efficiency. Therefore, hospitals must wisely prioritize the essential medicines. Another challenge is that some medicines are difficult to obtain and expensive, including essential drugs that frequently experience national stock-outs in the hospital pharmacy. Resistance to change is also a problem, where doctors are reluctant to switch older medications with more efficient alternatives. Finally, compliance with regulations, where the hospital is obligated to follow government rules to prevent errors during selection. In response to these

challenges, experts and researchers (Astriani, 2018; Junaedi et al., 2024; Nuryadin et al., 2025; Polii et al., 2021; Subagya et al., 2023) suggest solutions such as more thorough planning, transparency in selection, and providing training for medical personnel to be more open to change.

The research findings at La Mappapenning Hospital also report the evaluation of medicine and CMS selection through periodic audits to determine if the selected drugs are being utilized properly. This is accompanied by monitoring drug utilization to prevent over-prescription or misuse, and assessing therapeutic effectiveness to evaluate whether the chosen drugs remain relevant and efficiently selected.

Based on the discussion of the research findings above, it is understood that the selection of medicines and CMS is a critical process that affects the quality of healthcare services. It must therefore be conducted meticulously, based on empirical evidence, and with due consideration for budget availability. In this medicine and CMS selection process, the Pharmacy and Therapeutics Committee (PTC) plays an essential role in decision-making and conducts routine evaluations to ensure the drug list remains relevant to patient needs. In other words, an appropriate and accurate selection of medicines and CMS ensures that patients receive the best therapy, leading to greater hospital efficiency and optimal healthcare service delivery.

CONCLUSION

The selection of medicines and Consumable Medical Supplies (CMS) constitutes the Alpha (initial stage) of the management process, as it is performed before planning their procurement. This is a finding that simultaneously re-conceptualizes the existing perspective among experts and practitioners who traditionally consider the planning phase as the alpha process and function within the management system. Given the critical importance of this selection stage, it is already implemented efficiently, effectively, accountably, and sustainably at La Mappapenning Regional General Hospital. Several important findings support the researcher's assumption that the selection stage is, in fact, the alpha of the medicine and CMS management process at this research locus. Specifically, medicines and CMS must be selected based on proposals from users (doctors) while referring to the national formulary for government hospitals. Furthermore, the selection process must consider the aspects of efficacy, safety, quality, and cost, and it necessarily involves medical staff (doctors), pharmacists, and employees from related units (management) the hospital. Crucially, this selection process is periodically updated (revised) based on the evaluation of medicine and CMS utilization because it has a multiplier effect on the subsequent stages and functions of management, extending all the way to the administration and reporting phase as dynamic elements of the management system.

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