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Monitoring and Evaluation of Pharmaceutical Management Policy to Achieve Administrative Order in Public Service Delivery

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Abstract

Pharmaceutical management at the Nusaherang Community Health Center (UPTD Puskesmas Nusaherang), Kuningan Regency, encounters persistent challenges in ensuring medicine availability, quality, and accountable distribution, which directly affects public healthcare services. This study aims to examine the implementation of pharmaceutical policy monitoring and evaluation across the dimensions of time, process, outcomes, quality, and quantity; to identify key obstacles; and to propose strategic recommendations for improving administrative order in service delivery. Using a qualitative case study approach, data were gathered through in-depth interviews with pharmaceutical staff, the health center head, medical personnel, and patients, complemented by document analysis of SOPs, drug stock reports, and relevant regulations. Findings indicate that while internal monitoring is conducted regularly, it is constrained by limited human resources, manual reporting systems, and weak inter-program coordination. External supervision by the District Health Office is irregular and predominantly emphasizes quantitative rather than qualitative aspects. Although essential medicine availability exceeds 80%, its impact on patient care remains limited due to inconsistent reporting and inadequate feedback mechanisms. The main barriers include insufficient pharmaceutical personnel, heavy administrative workload, and lack of routine training. Recommended strategies involve rescheduling monitoring, expanding staffing, adopting digital information systems (SIMFAR/e-logistics), revising SOPs, strengthening inter-sectoral coordination, and integrating qualitative indicators into evaluations. This study highlights the urgency of systematic monitoring and evaluation as a foundation for effective, transparent, and high-quality pharmaceutical management in primary healthcare services.

Keywords: *Pharmaceutical Management, Monitoring and Evaluation, Administrative Order, Public Services, Nusaherang Community Health Center.*

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INTRODUCTION

Pharmaceutical management plays a critical role within the healthcare service system, particularly in ensuring the availability, quality, and equitable distribution of medicines that are accessible and affordable for all segments of society. According to the World Health Organization, essential medicines should always be available in sufficient quantities and at affordable prices to support universal health coverage (UHC) goals (WHO, 2019). Equitable access to medicines is a fundamental component of the right to health and must meet the priority needs of populations (WHO, 2019).

Within the public service framework, the success of pharmaceutical management reflects not only service effectiveness but also government commitment to the right to health, as mandated by Indonesian health policy (Ministry of Health Republic of Indonesia, 2020). Policy formulation and implementation precision greatly influence the effectiveness of pharmaceutical management. However, administrative challenges such as inadequate data reporting, poor record-keeping, and weak supervision often undermine efforts to ensure efficiency, transparency, and accountability in pharmaceutical services (BPOM, 2021).

This issue is reflected in pharmaceutical inventory data from the Nusaherang Community Health Center (UPTD Puskesmas Nusaherang), which reveals notable discrepancies between planned and actual medicine utilization in 2023–early 2024. These findings highlight deficiencies in monitoring systems and disorganized administrative procedures that warrant immediate corrective action.

Effective and continuous monitoring and evaluation (M&E) of pharmaceutical policy are necessary to bridge the gap between planning and execution and to reinforce accountability in administrative systems. M&E functions not only as a control mechanism but also as a means for organizational learning and service quality improvement (Patton, 2015; Bovens, Schillemans, & Goodin, 2014).

In practice, Puskesmas Nusaherang continues to face critical issues in pharmaceutical management, including procurement delays, stock shortages, distribution of near-expiry medicines, and inadequate M&E involvement from responsible stakeholders. Such drug shortages pose serious risks to patient safety by increasing the likelihood of medication errors and disrupting continuity of care (ASHP, 2022; Fox & Daskin, 2021).

Based on preliminary data from Puskesmas Nusaherang, the number of patients receiving pharmaceutical services increased significantly from 13,444 in 2023 to 21,916 in 2024. This rise in demand was accompanied by a substantial increase in the pharmaceutical budget allocation, from IDR 1,582,425,127.70 in 2023 to IDR 3,921,681,736.48 in 2024. Such rapid escalations in service demand and fiscal support place substantial pressure on healthcare systems to optimize resource utilization (Cleemput, 2025). Therefore, an in-depth assessment of the implementation of pharmaceutical policy

monitoring and evaluation at Puskesmas Nusaherang is necessary to evaluate the effectiveness of existing policies and identify implementation drivers and obstacles. The study's findings are expected to yield strategic recommendations that enhance pharmaceutical management systems and improve healthcare service quality.

Accordingly, this research aims to: (1) analyze the implementation of pharmaceutical policy monitoring and evaluation at UPTD Puskesmas Nusaherang based on the dimensions of time, process, outcomes, quality, and quantity; (2) examine the efforts undertaken to address the obstacles encountered during the monitoring and evaluation of pharmaceutical policies; and (3) provide strategic recommendations to overcome these challenges, thereby supporting administrative order in pharmaceutical public services.

Considering these objectives, the study is of substantial importance in strengthening the implementation of more effective and systematic pharmaceutical management policies at UPTD Puskesmas Nusaherang. The findings are expected to contribute not only to the improvement of sustainable health policy monitoring and evaluation mechanisms but also to the enhancement of the overall quality of pharmaceutical public services.

LITERATURE REVIEW

Pharmaceutical management is a vital component of the healthcare service system, encompassing the planning of drug needs, procurement, storage, distribution, as well as the reporting and evaluation of drug use. The effectiveness of pharmaceutical management significantly influences the quality of public healthcare services, as it directly affects the availability, quality, and safety of affordable medicines for the public (Ministry of Health, Republic of Indonesia, 2020). In the context of public service, pharmaceutical management serves not only a technical function but also reflects the accountability of the bureaucracy in managing public resources (Vian, 2020). Administrative order in pharmaceutical management signifies institutional efficiency, transparency, and a strong commitment to good governance principles within health service institutions (Vian, 2020).

Monitoring and evaluation (M&E) are two essential functions within the public policy cycle that ensure the proper implementation of policies and provide feedback for continuous improvement. According to Patton (2015), monitoring is a systematic, periodic data collection process used to track policy implementation, while evaluation focuses on assessing policy effectiveness, efficiency, and impact. These definitions align with broader frameworks in public health, where M&E serve both control and learning functions (MEASURE Evaluation, 2016).

Bovens et al. (2014) emphasize that M&E is not merely a bureaucratic control tool but also serves as an organizational learning mechanism. In the context of pharmaceutical management, M&E functions to assess administrative performance, identify data discrepancies, and reinforce supervision and accountability systems.

Sondang P. Siagian (2005) argues that effective monitoring must encompass five key dimensions:

1. Time Dimension – Timeliness in the execution of monitoring activities, including consistent and continuous scheduling.
2. Process Dimension – Emphasis on how the policy is implemented and whether standard procedures are being followed.
3. Output Dimension – Concrete results or deliverables arising from policy implementation.
4. Quality Dimension – The standard or excellence of outputs achieved, in both technical and service-related terms.
5. Quantity Dimension – Measurement of the volume or number of activities, products, or outcomes generated from the policy.

These five dimensions form the analytical foundation for evaluating how monitoring and evaluation practices contribute to achieving administrative order in pharmaceutical management. Specifically, administrative order in pharmaceutical services is closely tied to the accuracy of drug data, transparency in distribution, and systematic reporting of drug use. Administrative irregularities may result in inefficiencies, data duplication, and even budget waste (Indonesian Food and Drug Authority [BPOM], 2021).

Digital transformation in the healthcare sector presents a significant opportunity to support administrative order and improve the efficiency of pharmaceutical management. Systems such as e-logistics and the Hospital Information Management System (SIMRS) can enhance data accuracy, streamline workflows, and facilitate effective monitoring processes (Ministry of Health, Republic of Indonesia, 2022). However, the effectiveness of these technologies is highly dependent on the readiness of human resources, system integration across units, and the sustainability of their evaluation mechanisms (World Health Organization [WHO], 2011).

A previous study by Fauziah, Muchlis, and Hamzah (2024) at the Bara-Baraya Community Health Center in Makassar revealed that several aspects of pharmaceutical managementsuch as drug distribution and destructionhad not been implemented in accordance with established standards. Furthermore, administrative documentation was poorly organized, highlighting the weakness of internal evaluation functions within the facility. One of the most crucial components in pharmaceutical management is drug requirement planning, which heavily depends on accurate morbidity data and drug utilization patterns in the community. Maspekeh, Rondonuwu, and Dondokambey (2018) found that the accuracy of drug needs forecasting in the Health Office of Tomohon City was only 33%. This inaccuracy led to disproportional drug procurement, resulting in either overstock or shortage, which ultimately disrupted public health service delivery. These findings underscore the importance of a data-driven monitoring system and periodic evaluation of the planning process (Zhuang, Xiao, & Chai, 2020; WHO, 2011)

Equally important is the control of drug inventory and distribution. Recording and monitoring of stock must be carried out in an orderly and transparent manner. The FEFO (First Expired, First Out) and FIFO (First In, First Out) principles are fundamental to warehouse pharmaceutical management (WHO, 2011). However, in practice, many community health centers lack adequate storage facilities or effective digital inventory systems. A study by Ihsan, Lestari, and Rahayu (2021) in Kendari City reported that the overall quality of pharmaceutical management remained at a moderate level, primarily due to weak documentation and drug distribution processes that failed to follow proper logistical pathways.

Evaluation of clinical pharmacy services has also been insufficiently addressed, despite its integral role in improving service quality and patient safety. Heroweti, Rahmawati, and Ikhsan (2023) found that the implementation of clinical pharmacy services in pharmacies across Magelang Regency was suboptimal, particularly in areas such as monitoring therapeutic drug effects and documenting adverse reactions. This situation highlights the urgent need for a results- and impact-oriented evaluation mechanism (Patton, 2015).

The integration of information technology is also a critical issue in pharmaceutical monitoring and evaluation. Systems such as the Pharmaceutical Management Information System (SIMFAR) and similar applications should serve as key tools for recording, reporting, and evaluating pharmaceutical management activities. Zhuang, Concannon, and Manley (2020) argue that digital evaluation dashboards can significantly improve monitoring efficiency while also serving as communication platforms among stakeholders. However, implementation at the community health center or regional hospital level is often constrained by limited infrastructure and human resource capacity (Ministry of Health, Republic of Indonesia, 2022).

In terms of drug use, the principle of rationality is essential to ensure that patients receive therapies that are appropriate, safe, and cost-effective. Fudholi et al. (2022) analyzed drug use in several community health centers in Kupang City using WHO and Ministry of Health indicators. Their findings revealed that many prescriptions did not meet standard criteria, particularly regarding the number of drugs per prescription and the inappropriate use of antibiotics. Routine evaluation of drug use not only supports quality healthcare delivery but also helps prevent antimicrobial resistance and reduce budget waste (World Health Organization, 2022).

Beyond internal health facility operations, monitoring and evaluation must also consider external perspectives, particularly those of service users or patients. Patient satisfaction with pharmaceutical services is a critical indicator of administrative order in public services. A study by Saputra, Choirunnisa, and Arisca (2019) in Yogyakarta found that although independent and franchise pharmacies had comparable levels of service standard implementation, deficiencies

persisted in areas such as drug information provision and consultation documentation.

The integration of all monitoring and evaluation components depends heavily on managerial commitment, human resource capacity, and continuous policy support. As Sharma (2016) emphasized, public service reform demands strengthening institutional mechanisms to ensure transparency and accountability. As part of bureaucratic reform and public service improvement, the strengthening of monitoring and evaluation systems in pharmaceutical policy must be a priority. This aligns with the principle that good governance in healthcare services demands a transparent, data-driven, and results-oriented evaluation system (Dwiyanti, 2022).

METHOD

This study adopts a qualitative research approach using a case study design to explore in depth the implementation of pharmaceutical policy monitoring and evaluation at the Nusaherang Community Health Center. The case study method was deemed appropriate as it enables an in-depth understanding of the dynamics, complexities, and contextual nuances involved in policy implementation at the local health facility level (Yin, 2018). The study specifically focuses on examining how monitoring and evaluation mechanisms are executed, and how they influence administrative order in the delivery of pharmaceutical services within this public healthcare institution.

Data collection was conducted using two primary techniques: in-depth interviews and document analysis. The interviews involved key informants, namely the pharmaceutical officer and the head of the health center, who possess direct knowledge of the pharmaceutical policy and its implementation. Supporting informants included doctors, nurses, midwives, and patients, to provide broader perspectives. Meanwhile, the documents analyzed included standard operating procedures (SOPs) for drug management, monthly drug stock reports, internal evaluation records, and regulations issued by the Health Office regarding pharmaceutical governance. This combination of data collection methods provided a comprehensive view of the phenomena under investigation (Patton, 2015).

Data were analyzed using the qualitative data analysis technique developed by Miles and Huberman (2014), which involves the processes of data reduction, data display, and conclusion drawing/verification. The analysis was conducted iteratively throughout the research process. To ensure the validity of the findings, triangulation techniques were employedboth source and methodological triangulationto confirm the consistency and accuracy of the information obtained through interviews and document analysis. Triangulation is considered essential in qualitative research to enhance the credibility of the findings (Lincoln & Guba, 1985).

Through this methodological approach, the study aims to generate a comprehensive understanding of how pharmaceutical

management policies are monitored and evaluated at the community health center level, and how these practices contribute to administrative order in public service delivery. The findings are expected to yield practical recommendations for improving the quality of pharmaceutical services and strengthening public administrative governance more broadly.

RESULT AND DISCUSSION

Monitoring and Evaluation of Pharmaceutical Policy

1. Time Dimension

The findings reveal that all respondents including pharmaceutical officers, doctors, midwives, nurses, and the head of the health center stated that monitoring activities are conducted regularly, with a frequency of either monthly or quarterly. However, there is a noticeable discrepancy between the ideal frequency of monitoring as stipulated in the standard operating procedures and the actual implementation in the field. Internal monitoring of pharmaceutical management at the health center is carried out routinely according to the established schedule.

In contrast, external monitoring conducted by relevant institutions such as the District Health Office has not been optimally implemented, as indicated by the limited frequency and intensity of such activities. The main constraints include limited human resources and overlapping healthcare service agendas, which hinder the smooth execution of monitoring activities. Consequently, this affects the overall effectiveness of the evaluation process for pharmaceutical policy implementation.

According to Siagian (2005), the time dimension in monitoring refers to the aspects of frequency, continuity, and timeliness in the implementation of policy oversight. This dimension is critical because monitoring conducted regularly and on time ensures that the information obtained is relevant for timely decision-making and policy improvement (Siagian, 2005).

The findings from Puskesmas Nusaherang indicate that internal monitoring related to pharmaceutical management is conducted periodically on a monthly and quarterly basis which aligns with the expectations of maintaining administrative order and drug availability. However, discrepancies emerged between the ideal frequency and actual field implementation, particularly for external monitoring by the District Health Office, which is only carried out approximately once a year. Such a low external oversight frequency demonstrates significant challenges in implementing the time dimension of monitoring, largely due to the heavy workload of pharmaceutical personnel and overlapping monitoring schedules with core health service activities. This aligns with prior research identifying similar time-related barriers in health service oversight (Rahman et al., 2022; Siagian, 2005).

From Siagian's perspective, failure to conduct timely and continuous monitoring may result in delayed or outdated information,

impeding the early detection of issues such as drug stock shortages or documentation errors. Consequently, the effectiveness of policy evaluations diminishes, and corrective actions cannot be taken responsively (Siagian, 2005). Furthermore, Siagian stresses that monitoring continuity is essential to transform evaluation from an incidental task into an ongoing process that supports sustained improvements in service quality (Siagian, 2005).

A practical implication of these findings is the need to increase both the frequency and consistency of monitoring, particularly by external stakeholders, to ensure more intensive and objective oversight. Enhanced and timely monitoring can better uphold administrative order and ensure that deviations or noncompliance are addressed promptly (Rahman, Suryani, & Wijayanti, 2022).

This study further confirms that insufficient monitoring schedules can create bottlenecks in the evaluation process, hinder the delivery of constructive feedback, and weaken accountability in pharmaceutical management. These conditions are in line with Siagian's assertion that the time dimension is foundational to the overall effectiveness of monitoring practices (Siagian, 2005).

Accordingly, a strategic recommendation derived from this analysis is to reschedule monitoring activities to avoid conflict with primary healthcare duties and to recruit dedicated personnel or integrate digital information systems to streamline monitoring and reporting processes. Optimizing the time dimension in monitoring is essential for achieving greater administrative discipline at Puskesmas Nusaherang.

These findings align with previous research by Fauziah, Muchlis, & Hamzah (2024) at Puskesmas Bara-Baraya in Makassar, which also reported weaknesses in internal evaluation practices particularly regarding drug distribution and administrative documentation. They concluded that inconsistent and untimely monitoring leads to disorganized administrative data and decreased accountability in pharmaceutical governance (Fauziah, Muchlis, & Hamzah, 2024).

2. Process Dimension

The research findings indicate that all respondents reported significant challenges in the implementation of the pharmaceutical management monitoring process at the community health center. One of the primary issues is the limited availability of human resources, particularly the insufficient number of pharmaceutical personnel, which adversely affects the capacity to conduct optimal monitoring activities. In addition, the information system used remains manual, resulting in inefficient reporting and data processing that is prone to error. The absence of a digital system also limits the ability to perform real-time monitoring of drug distribution and alignment between demand and supply.

Another major barrier is the suboptimal coordination across programs, which hinders the monitoring process. The lack of synergy among units has led to reporting practices that are largely procedural

and formalistic, rather than analytical or evaluative in nature. Although routine reporting is conducted, the monitoring results are often not followed up with concrete actions, thereby limiting the potential for meaningful process improvements. This suggests that monitoring is perceived more as a bureaucratic obligation rather than as a functional evaluation tool to enhance pharmaceutical management.

According to Siagian (2005), the process dimension in monitoring refers to how a policy is implemented, including the execution of procedures and operational mechanisms that support the achievement of policy objectives. This dimension emphasizes the importance of conducting technical and administrative processes in accordance with established standards, as well as the extent to which implementing units carry out their functions effectively and efficiently (Siagian, 2005).

The findings from UPTD Puskesmas Nusaherang indicate that the implementation of monitoring in terms of process still faces several structural and technical barriers. One of the main obstacles is the limited availability of human resources, particularly pharmaceutical personnel. This constraint leads to uneven workload distribution and impedes the comprehensive execution of monitoring activities, which aligns with Ihsan, Lestari, and Rahayu's (2021) finding that human resource shortages are a dominant factor in poor pharmaceutical management, especially in documentation and drug distribution.

Furthermore, reliance on manual information systems significantly hinders the monitoring process. Such systems not only slow down reporting and data processing but also increase the risk of administrative errors, thus obstructing real-time monitoring of drug distribution and utilization. This limitation highlights a gap in the implementation of digital technology, which is crucial for improving monitoring efficiency and data accuracy (Ministry of Health, 2022; Zhuang, Concannon, & Manley, 2020).

Another significant challenge is suboptimal cross-program coordination, where monitoring is conducted independently by each unit without integration or collaboration across divisions. Consequently, reporting remains purely administrative and lacks substantive policy evaluation, reflecting a weak organizational learning function in monitoring. Bovens, Schillemans, and Goodin (2014) emphasize that effective monitoring should be reflective and aimed at continuous improvement, rather than serving as mere administrative formality.

Although routine reporting is in place, findings reveal that the outcomes of monitoring are not consistently followed up with concrete actions, causing monitoring to lose its core function as a control instrument and instead become a ritualistic administrative task. In line with Patton's (2015) assertion, monitoring should produce actionable data for policy improvement rather than simply fulfill bureaucratic reporting requirements.

The implementation of monitoring within the process dimension at Puskesmas Nusaherang remains reactive and insufficiently oriented

toward learning and systematic improvement. This poses a significant challenge to achieving administrative order in pharmaceutical services that are both effective and transparent

3. Result Dimension

Interviews revealed that 83.3% of respondents reported positive progress in the outcomes of pharmaceutical monitoring, particularly regarding drug availability and administrative documentation. For instance, essential medicines such as vitamin A and iron supplements were available at rates exceeding 80%, indicating that the processes of drug procurement and storage have been functioning well and are able to meet basic health service needs. However, these improvements have not yet translated into significant enhancements in the quality of direct patient services. This may be attributed to the fact that drug availability and documentation alone are insufficient effective patient care also depends on staff competency, communication skills, and robust complaint-handling and feedback mechanisms.

In terms of reports from integrated health posts (Posyandu), it was found that documentation remains inconsistent. The recording and reporting of Posyandu activities are neither structured nor routinely maintained, posing a barrier to effective monitoring due to incomplete or irregular data, which hinders evaluation and informed decision-making. Furthermore, the impact of monitoring on administrative order has yet to reach an optimal level due to the absence of systematic sanctions or feedback mechanisms. While monitoring is conducted, there are no standardized procedures or corrective actions applied in cases of non-compliance or irregularities in pharmaceutical management. This lack of feedback limits the influence of monitoring in fostering behavioral changes or procedural improvements at the operational level. In summary, although monitoring has led to better drug availability and improved documentation, its influence on the overall quality of patient services remains limited.

The study findings show that the availability of essential medicines, such as vitamin A and iron supplements, has reached a level exceeding 80%. This achievement reflects a notable improvement in the pharmaceutical management system at Puskesmas Nusaherang, particularly in terms of the result and quantity dimensions of monitoring, as described by Siagian (2005).

The findings also reveal that this improvement in availability and administrative recording has not been accompanied by a proportional increase in the quality of patient services. This suggests that the quality dimension remains suboptimal, as effective pharmaceutical services are not solely measured by drug availability but also by aspects of direct service deliverysuch as health worker communication skills, patient education, and the timeliness and accuracy of service provision (Institute of Medicine, 2001; World Health Organization, 2016).

This condition aligns with the perspective of Bovens, Schillemans, and Goodin (2014), who argue that monitoring should not merely function as an administrative control tool but also serve as a

mechanism for organizational learning to improve service quality. Therefore, quantitative monitoring results must be complemented by qualitative evaluations that assess the patient-facing aspects of healthcare delivery (Bovens, Schillemans, & Goodin, 2014). On the other hand, the inconsistency and lack of routine structure in Posyandu (integrated health post) reporting indicate weaknesses in the time and process dimensions of monitoring (Ministry of Health, Republic of Indonesia, 2017). Monitoring that should be periodic and integrated becomes ineffective when data are incomplete, complicating evaluation and decision-making processes. This reinforces Patton's (2015) assertion that monitoring must be conducted systematically and strategically to generate valid information for policy improvement.

The absence of a sanction mechanism or systematic feedback loop for addressing non-compliance in pharmaceutical management shows that monitoring has not yet fulfilled its role in ensuring administrative enforcement and discipline. This contributes to weak accountability within the service system, contradicting principles of public service reform particularly those emphasizing efficiency, transparency, and responsiveness in modern public administration (Dwiyanti, 2022; Sharma, 2016).

Within the public service framework, the Ministry of Health of the Republic of Indonesia (2020) stresses that successful pharmaceutical management is an indicator of the government's seriousness in fulfilling the public's right to health. The sharp increase in the number of patients from 13,444 in 2023 to 21,916 in 2024therefore demands a pharmaceutical management system that is more responsive, efficient, and adaptive to evolving community needs (World Health Organization, 2007).

Nevertheless, even with a doubling of the budget allocation, the absence of a robust monitoring system prevents optimal outcomes. Discrepancies between planning and actual procurement, delivery of drugs nearing expiration, and inaccurate reports all signal administrative disorder, which may lead to waste, service stagnation, and even risks to patient safety (Indonesian Food and Drug Authority [BPOM], 2021; World Health Organization [WHO], 2011).

In this context, digital transformation and the adoption of systems such as SIMFAR or e-logistics must become priorities to strengthen administrative discipline. However, as noted by WHO (2011) and Zhuang, Concannon, and Manley (2020), the effectiveness of such technologies depends heavily on human resource readiness and the sustainability of evaluation mechanisms two critical challenges still evident at Puskesmas Nusaherang.

4. Quality Dimension

The findings indicate that 83.3% of respondents believe that, although the existing human resources at the health center are competent, the effectiveness of pharmaceutical and administrative management continues to be hindered by an unintegrated system, the lack of regular training, and an evaluation approach that emphasizes

quantitative metrics over qualitative assessments. To improve service quality, it is essential to upgrade the information systems, provide continuous professional training, and incorporate qualitative performance indicators that reflect patient experience and service outcomes.

In the context of monitoring and evaluation, the quality dimension, as defined by Siagian (2005), refers to the assessment of the quality of outcomes resulting from policy implementation. This quality is not limited to technical aspects such as data completeness and administrative compliance but also encompasses the perceived service quality experienced directly by usersin this case, patients (Siagian, 2005).

Within the pharmaceutical management system at UPTD Puskesmas Nusaherang, 83.3% of respondents acknowledged serious challenges in ensuring optimal service quality, despite health personnel generally possessing adequate competencies (Study data, 2025). The quality of pharmaceutical services at the health center remains constrained by the lack of an integrated digital information system, resulting in manual recording and reporting processes that adversely affect the accuracy and timeliness of stock monitoring, drug reordering, and program evaluation (Ministry of Health, Republic of Indonesia, 2022). The absence of a structured system also impedes evaluation of true service quality, as no qualitative indicators such as patient satisfaction, therapeutic effectiveness, or pharmacist-led education are systematically tracked (World Health Organization, 2016).

Another major obstacle cited by respondents is the lack of regular training for pharmaceutical staff, leading to stagnant knowledge and skills in adapting to evolving regulations, technologies, and community needs. The absence of continuous professional development hampers service improvement, particularly in clinical areas like drug counselling and therapy monitoring (Ihsan, Lestari, & Rahayu, 2021).

Current evaluations tend to emphasize quantitative outputs, such as the number of prescriptions filled or drug volumes dispensed, while qualitative aspects including the accuracy of drug information, patient satisfaction with pharmacy services, and staff responsiveness are often overlooked (Bovens, Schillemans, & Goodin, 2014). Yet these qualitative indicators are essential components of quality-oriented public service administration (Saputra, Choirunnisa, & Arisca, 2019).

These findings align with previous research by Ihsan et al. (2021), who reported that pharmaceutical management quality across several Puskesmas remained moderate due to weak documentation systems and ineffective distribution practices. Similarly, Heroweti, Rahmawati, and Ikhsan (2023) underscore the importance of strengthening clinical pharmacy services to enhance both service quality and patient safety.

5. Quantity Dimension

According to 83.3% of respondents, the limited number of pharmaceutical personnel and the heavy administrative workload have compromised the quality of reporting and the effectiveness of

monitoring activities. Enhancing pharmaceutical management effectiveness requires additional staffing and greater resource support to ensure more accurate reporting and optimized monitoring implementation particularly for priority programs such as stunting reduction and maternal and child health (MCH) services

Pharmaceutical management is a vital element of the healthcare service system, aimed at ensuring the availability, quality, and equitable distribution of medicines that are accessible to the public at affordable costs (Ministry of Health, Republic of Indonesia, 2020). In the context of public service, pharmaceutical management is not merely a technical function but also a reflection of institutional accountability in the use of available resources. Therefore, the quality of reporting and effective monitoring becomes critically important in maintaining administrative order and achieving optimal health service outcomes.

Interview findings revealed that 83.3% of respondents reported that limited pharmaceutical staffing and high administrative workload have negatively affected the quality of reporting and monitoring. This finding clearly illustrates the challenges often encountered in the field. Excessive workloads limit the time and capacity of staff to perform optimal administrative management, resulting in lower data accuracy and reduced effectiveness in monitoring pharmaceutical policies. These challenges are consistent with the findings of BPOM (2021), which identified administrative irregularities as a major barrier to efficient, transparent, and accountable pharmaceutical services.

Within the framework of public policy monitoring and evaluation, Siagian (2005) emphasizes the importance of systematic and continuous monitoring to bridge the gap between policy planning and implementation. However, if constraints related to human resources and administrative burden remain unresolved, monitoring activities tend to become partial and suboptimal. This directly impacts the availability of valid data needed for policy evaluation, thereby hindering improvement efforts and evidence-based decision-making.

Providing adequate resource support both through increased pharmaceutical staffing and the optimization of digital tools emerges as a strategic solution to address these barriers. Digital transformation through systems such as e-logistics or the Pharmaceutical Management Information System (SIMFAR) can accelerate and streamline administrative processes, thereby reducing the workload of personnel and improving the quality of monitoring (Ministry of Health, 2022). However, the effectiveness of such technology remains dependent on human resource readiness and robust system integration.

Furthermore, strengthening the capacity of health workers through regular training and ongoing technical support is essential to ensure that pharmaceutical staff can carry out monitoring and reporting functions more accurately and systematically. Such support is especially critical in priority programs such as stunting prevention and maternal and child health (MCH), which demand timely and measurable health interventions and drug management.

Overall, the findings affirm that improving the quality of pharmaceutical management requires more than increased budget allocations or enhanced drug availability. It must be accompanied by improvements in the monitoring and evaluation system, supported by adequate human resources and orderly administrative systems. In doing so, pharmaceutical management can more effectively support the delivery of healthcare services that are high-quality, accountable, and sustainable.

Efforts to Overcome Barriers in the Monitoring and Evaluation of Pharmaceutical Policy

Barriers to external monitoring by the District Health Office include low frequency, overlapping responsibilities of pharmaceutical personnel, and conflicting monitoring schedules. These challenges have limited the effectiveness of policy evaluation and delayed necessary improvements. To address these issues, the following efforts are recommended: 1) Rescheduling monitoring activities to avoid clashes with primary healthcare service duties, ensuring that monitoring does not interfere with essential service delivery. 2) Recruiting dedicated personnel or utilizing information technology tools to accelerate and simplify the monitoring process. 3) Enhancing the continuity and intensity of external monitoring to ensure that policy evaluations are more responsive, evidence-based, and accurate.

Barriers in the process dimension include limited human resources, the use of manual information systems prone to error, suboptimal cross-program coordination, and monitoring practices that are administrative in nature without concrete follow-up improvements. To overcome these challenges, the following efforts are proposed: 1) Increasing and redistributing pharmaceutical personnel to better manage workload distribution and ensure the continuity of monitoring functions. 2) Implementing digital information systems such as SIMFAR or e-logistics to streamline reporting processes and enable real-time monitoring of pharmaceutical operations. 3) Strengthening cross-program coordination to promote data integration and enable more comprehensive evaluations across units. 4) Fostering a monitoring culture that emphasizes organizational learning and continuous improvement, rather than treating monitoring merely as an administrative obligation.

Identified barriers include the fact that improvements in drug availability and administrative documentation have not been accompanied by enhancements in direct patient service quality. Additionally, inconsistent reporting from Posyandu (integrated health posts) and the absence of systematic sanction and feedback mechanisms remain major challenges. To address these issues, the following measures are recommended: 1) Develop evaluation indicators that include qualitative aspects of patient services, such as patient satisfaction and health education effectiveness. 2) Establish clear feedback and sanction mechanisms to ensure administrative order and

accountability in pharmaceutical service delivery. 3) Promote the integration of Posyandu data systems to enable more structured reporting that supports effective policy evaluation and decision-making.

Barriers to quality monitoring include the lack of an integrated digital information system, irregular staff training, evaluations that focus heavily on quantitative metrics, and the absence of structured indicators for service quality. To overcome these challenges, the following strategies are proposed: 1) Develop and implement an integrated digital information system to improve the accuracy, efficiency, and timeliness of pharmaceutical monitoring and evaluation. 2) Conduct regular training and capacity-building programs for pharmaceutical personnel to keep pace with regulatory updates and technological advancements. 3) Incorporate qualitative indicators into the evaluation framework, such as patient satisfaction, treatment effectiveness, and service responsiveness. 4) Strengthen the role of pharmacists in patient education and clinical services to improve the overall quality of pharmaceutical care.

The main barriers identified in the quantity dimension include the limited number of pharmaceutical personnel and high administrative workloads, both of which compromise the quality of reporting and the effectiveness of monitoring. The following strategies are recommended to address these issues: 1) Recruit additional pharmaceutical staff and administrative support personnel to reduce workload pressure and enable more effective and consistent monitoring. 2) Optimize the use of digital technology to minimize manual administrative tasks and streamline monitoring processes. 3) Prioritize key health programs, such as stunting prevention and maternal and child health (MCH), by ensuring adequate resources and targeted training. 4) Provide sufficient facilities and budget allocations to support the implementation of systematic monitoring and evaluation processes.

Efforts to overcome barriers in pharmaceutical policy monitoring and evaluation must be implemented holistically through a multidimensional approach, encompassing improvements in the timing and scheduling of monitoring activities, integrated reporting processes, outcome-oriented evaluations, enhancement of human resource quality, and the adequate provision of personnel. The effective use of digital technology and the implementation of routine training are key success factors in supporting robust monitoring and evaluation mechanisms. Strengthening these aspects will enable pharmaceutical management to deliver healthcare services that are effective, accountable, and sustainable

Recommendations for the Implementation of Pharmaceutical Monitoring and Evaluation

Based on the findings from UPTD Puskesmas Nusaherang, the monitoring and evaluation of pharmaceutical policy implementation face a range of challenges arising from both internal organizational factors and external system limitations. These challenges include the

shortage of pharmaceutical personnel, heavy administrative workload, suboptimal information systems, and the lack of regular training and supervision. To address these issues effectively, it is essential to formulate strategic measures grounded in a comprehensive monitoring framework that incorporates the five key dimensions proposed by Siagian (2008):

1. Time Dimension: Routine and Efficient Scheduling
   Monitoring activities have not been consistently implemented in terms of frequency. To address this issue, a more structured and program-based monitoring schedule should be developed, prioritizing key health initiatives such as maternal and child health (MCH) and stunting prevention. Effective time coordination among staff and strengthened time management practices are crucial to prevent delays in evaluation processes, particularly when daily service workloads are high.
2. Process Dimension: SOP Revision and Inter-Unit Integration
   Monitoring processes are often suboptimal due to the absence of standardized Standard Operating Procedures (SOPs) and overlapping roles across units. A revision and clarification of SOPs in pharmaceutical management is urgently required, including a clear definition of workflows and responsibilities for each stakeholder. Furthermore, routine internal coordination meetings should be institutionalized to ensure better inter-unit collaboration, especially when addressing drug distribution and administrative documentation issues.
3. Result Dimension: Data Utilization for Systemic Improvement
   Although monitoring outcomes show improvements in drug availability, data recording and follow-up actions remain limited. It is essential to conduct continuous evaluations that go beyond administrative compliance and focus on assessing the impact of policies on service quality. The feedback function of monitoring should be reinforced to serve as a solid foundation for managerial decision-making.
4. Quality Dimension: Training and Digital Information Systems
   Most respondents indicated that although pharmaceutical staff are competent, the effectiveness of management is still hindered by manual systems and a lack of regular training. It is recommended to implement routine training programs on pharmaceutical information systems, digital reporting, and drug management. In parallel, the development and implementation of integrated digital systems, such as e-logistics or web/mobile-based reporting applications, will significantly enhance accuracy and work efficiency.
5. Quantity Dimension: Staffing Expansion and Equitable Distribution
   The shortage of pharmaceutical personnel remains a key barrier to effective monitoring. To resolve this, additional recruitment or the redistribution of existing personnel across health centers is

necessary to balance workloads. Local governments should pursue affirmative policies to ensure adequate staffing in high-demand areas and provide incentives for health workers engaged in pharmaceutical administration.

In addition to the technical approaches outlined above, an equally important effort is to strengthen cross-sectoral coordination, both horizontally within the community health center and vertically with the district health office. The implementation of routine supervision by both the health office and the internal management of the health center must also be reinforced to ensure that monitoring and evaluation function as an effective control mechanism in improving administrative discipline and the overall quality of pharmaceutical services

CONCLUSION

The study concludes that the monitoring and evaluation of pharmaceutical policy implementation at UPTD Puskesmas Nusaherang has not yet been fully effective across the five dimensions of time, process, results, quality, and quantity. Limited monitoring schedules, shortages of pharmaceutical personnel, reliance on manual systems, weak coordination, and inadequate feedback mechanisms remain significant obstacles. While administrative documentation and medicine availability show some progress, these improvements have not translated into better service quality or stronger administrative discipline.

To address these challenges, comprehensive and sustainable strategies are required, including realistic scheduling, additional human resources, enhanced training, the adoption of digital information systems, integration of SOPs, development of qualitative indicators, and strengthened accountability mechanisms. By adopting a multidimensional and collaborative approach, pharmaceutical monitoring and evaluation can support more effective, efficient, and accountable public health services.

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