

Gap Analysis of Advanced Medical Equipment Distribution: The Correlation Between Physical Special Allocation Fund (DAK Fisik) and the Public Health Development Index (IPKM) at RSUD dr. Rasidin Padang

Arif Prima^{1*}, & Satrio Bhagas Yudhanto²

¹*STIKES Dharma Landbouw, Indonesia, ²STIKES Dharma Landbouw, Indonesia

*Co e-mail: arifpriima@gmail.com¹

Article Information

Received: September 03, 2026

Revised: September 24, 2026

Online: October 01, 2026

Keywords

Distribution, Equipment, DAK Fisik, IPKM, Hospital, Correlation, Healthcare, Allocation

ABSTRACT

The equitable distribution of advanced medical equipment remains a challenge in Indonesia's decentralized health financing system, particularly in regional public hospitals. This study aimed to analyze gaps in advanced medical equipment distribution and examine their correlation with DAK Fisik allocation and IPKM scores at RSUD dr. Rasidin Padang. A quantitative correlational cross-sectional design was used, with total sampling of 68 essential advanced medical equipment units recorded in the hospital asset inventory and DAK Fisik records for 2021–2024. Data were collected through document review, asset records, and structured checklists. Univariate analysis described equipment distribution and fund realization, while Pearson and Spearman correlation tests examined relationships between variables. Results showed that 61.8% of essential advanced equipment units were available, with DAK Fisik realization reaching 78.4%. DAK Fisik allocation was significantly and positively correlated with equipment completeness ($r = 0.612$; $p = 0.001$), while equipment distribution showed a moderate correlation with IPKM score ($r = 0.487$; $p = 0.014$). These findings indicate the need to strengthen DAK Fisik planning and monitoring, particularly for high-priority diagnostic and therapeutic equipment. Equipment gaps remained despite DAK Fisik funding, while higher allocation was associated with greater equipment completeness and equipment distribution was moderately associated with IPKM scores. Given the cross-sectional, single-hospital design, these associations should not be interpreted as causal.

Keywords: Distribution, Equipment, DAK Fisik, IPKM, Hospital, Correlation, Healthcare, Allocation

INTRODUCTION

Access to adequate health technology is one of the main pillars in achieving Universal Health Coverage (UHC) in developing countries, including Indonesia. The availability of proper and modern medical equipment is a critical determinant of the quality of referral health services in hospitals. National health system transformation emphasizes the importance of strengthening the supply side of the health system as a prerequisite for achieving optimal public health status. Without adequate infrastructure and

medical equipment support, efforts to improve the quality of health services will be difficult to realize equitably across regions (Mahendradhata et al., 2021). Although Indonesia has made substantial progress toward UHC through its national health insurance scheme, persistent inequities in access to health services across its vast archipelago remain a major concern (Agustina et al., 2019; Mboi et al., 2018). Beyond coverage, a high-quality health system also depends on foundational inputs such as functioning facilities and equipment, without which expanded access may not translate into better health outcomes (Kruk et al., 2018).

The issue of equitable health service distribution in Indonesia cannot be separated from the fiscal decentralization policy that began in the late 1990s. Decentralization granted greater authority to local governments in managing the health sector, including the planning and procurement of health facilities and infrastructure in their respective regions. However, this decentralization process also opened opportunities for disparities between regions to emerge, particularly in areas with limited fiscal and institutional capacity. Indonesia's long journey toward universal health coverage shows that the success of health policy is highly dependent on the consistency of implementation at the regional level (Pisani, Kok, & Nugroho, 2020). Decentralization to hundreds of districts and cities has been reported to increase health system heterogeneity and widen equity gaps (Agustina et al., 2019), while earlier work had already examined how regional autonomy reshaped health service provision at the local level (Kristiansen & Santoso, 2006).

In response to these challenges, the central government introduced the Physical Special Allocation Fund (DAK Fisik) as a transfer instrument to regions aimed at supporting the development and procurement of public service facilities, infrastructure, and equipment, including in the health sector. This policy is explicitly designed to reduce public service gaps between regions and accelerate regional development in line with national priorities. DAK Fisik in the health sector is directed toward fulfilling the standards of facilities, infrastructure, and medical equipment (SPA) at both primary and referral health facilities. The management of these funds is specific and tiered, ranging from regional proposals and central verification to disbursement and usage reporting stages (Presidential Regulation Number 57 of 2024 concerning Technical Guidelines for the Physical Special Allocation Fund).

At the national level, the amount of DAK Fisik allocated for the health sector reflects the government's significant commitment to strengthening regional health infrastructure. In the 2023 fiscal year, for instance, the government allocated Rp12.9 trillion specifically for the construction, rehabilitation, and provision of medical equipment at primary and referral health facilities. This figure indicates the central government's high expectations that regions can optimally utilize these funds to improve the quality of community health services. However, a large budget allocation does not automatically guarantee equitable health development outcomes across all regions of Indonesia (Ministry of Health of the Republic of Indonesia, 2022). Subnational estimates likewise show that health outcomes differ considerably across Indonesian provinces, underscoring the need to examine how health financing translates into locally available resources (Mboi et al., 2022).

Evidence on the ground shows that the success of fiscal decentralization, including the utilization of DAK, is heavily influenced by the governance capacity of the recipient local government. Regions with weak institutional capacity tend to be less effective in translating transfer funds into tangible development outputs, including in the health sector. Empirical evidence at the district/city level in Indonesia confirms that fiscal decentralization can have a positive impact on government governance performance, but the results vary greatly depending on the readiness of local bureaucratic structures. This variation ultimately affects the speed and accuracy of fulfilling medical equipment needs at regional health facilities (Astriana & Khoirunurrofik, 2024).

At the technical implementation level, the procurement and distribution of medical equipment in regional hospitals still face various structural challenges. The medical equipment supply chain process—



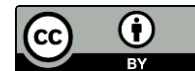
which includes planning, purchasing, and distribution and utilization stages—is often hampered by delays in fund disbursement and lengthy procurement contract bureaucracy. Digitalization of the procurement process through online applications has helped accelerate documentation, but faster contract completion does not always translate into timely fulfillment of equipment needs on the ground. This condition confirms that the management of DAK Fisik requires synergy between budget policy aspects and operational managerial aspects at the hospital level (Arpan, 2022).

Sound medical equipment logistics management has been proven to contribute significantly to improving the quality of health services in hospitals. Well-planned availability of medical equipment enables hospitals to carry out their curative and rehabilitative functions optimally without being hindered by technical facility limitations. Conversely, weak logistics systems can lead to a backlog of unmet equipment needs, directly affecting the effectiveness and efficiency of patient care. This highlights the importance of continuous evaluation of medical equipment logistics management systems at every health facility (Astutik, Wibowo, & Rahmawati, 2023). Conceptually, the structure of a health facility, including its physical resources and equipment, is widely regarded as a foundation for the processes and outcomes of care (Donabedian, 1988).

Recent literature reviews further confirm that the effectiveness of medical equipment procurement logistics management systems is a determining factor in balancing hospital operations in Indonesia. A systematic review of various studies shows that hospitals implementing transparent and efficient procurement systems tend to achieve better levels of medical equipment fulfillment compared to hospitals with conventional procurement systems. Efficiency in procurement also contributes to reducing overall hospital operational budget waste. These findings are relevant when linked to the context of DAK Fisik utilization as one of the primary funding sources for medical equipment procurement in regional hospitals (Anggreini, Ulya, Rochmah, & Iswanto, 2024). Evidence from other developing settings points in the same direction: an analysis of inventory reports from hospitals in sixteen countries found that, on average, 38.3% of medical equipment in developing countries was out of service, with lack of training, weak health technology management, and inadequate infrastructure as the main causes (Perry & Malkin, 2011). The World Health Organization has likewise highlighted the mismatch between available medical devices and the needs and conditions of the health systems in which they are used (World Health Organization, 2010).

Meanwhile, to monitor the success of health development at the regional level, the Ministry of Health developed the Public Health Development Index (IPKM) as a composite instrument summarizing various key health indicators. IPKM is composed of seven indicator groups, covering child health, reproductive health, health services, health behavior, non-communicable diseases, communicable diseases, and environmental health. This index is used as an advocacy tool for local governments to prioritize health programs based on the achievement of indicators in their respective regions. One sub-index of particular concern is health services, which is closely related to the availability of facilities and medical equipment at health service points (Noerjoedianto & Putri, 2020). The index was originally developed from national health survey data to rank districts and cities by health development status and to support evidence-based planning at the regional level (Ministry of Health of the Republic of Indonesia, 2014).

Previous studies have attempted to link IPKM achievement with other regional development indicators to demonstrate the validity and relevance of the index as a measure of health development success. One study in East Java Province found a significant influence between IPKM achievement and the Human Development Index (IPM), including a spatial correlation pattern between regions. This finding indicates that investment in the health sector—including the fulfillment of medical facilities and equipment through financing schemes such as DAK Fisik—has the potential to produce cascading effects on the overall regional development index. This type of correlational analytical approach provides a relevant methodological basis



for examining the relationship between health financing and health development achievements at the facility level (Kurniawan, Mamesah, & Wijaya, 2023).

Narrowing down to a more specific regional level, Padang City, as the capital of West Sumatra Province, has a network of referral health facilities that continues to undergo digital transformation and service quality improvement. The Padang City Health Profile records that all hospitals in the city have transitioned to using Electronic Medical Records (EMR) integrated with the Ministry of Health's SATU SEHAT platform. Nevertheless, out of ten Type C general hospitals in Padang City, several are still found to be less than optimal in the completeness of their service data reporting, including RSUD dr. Rasidin Padang. This reporting gap also reflects challenges in resource management aspects, including possible gaps in medical facilities and equipment (Padang City Health Profile, 2024).

RSUD dr. Rasidin Padang is one of the Type C regional general hospitals owned by the Padang City Government that plays an important role as a referral facility for the community in the area. As a regionally owned hospital, RSUD dr. Rasidin is also one of the beneficiaries of the DAK Fisik health sector program to support the fulfillment of facility, infrastructure, and medical equipment standards. The hospital's annual report records various service quality achievements alongside operational challenges faced from year to year. The position of RSUD dr. Rasidin as a continuously developing hospital makes it a relevant location for examining the effectiveness of health transfer fund utilization in fulfilling the need for advanced medical equipment (Annual Report of RSUD dr. Rasidin Padang, 2022).

Several recent studies conducted directly at RSUD dr. Rasidin Padang further confirm the existence of limitations in supporting facilities and infrastructure. One study on outpatient waiting times found that service delays at this hospital's polyclinics were caused, among other things, by limited facilities and infrastructure and an inadequate number of health workers. This condition has resulted in outpatient waiting times that do not yet meet the minimum service standard of a waiting time of less than 60 minutes. This finding provides an early indication that the issue of supporting facilities—including possible limitations in advanced medical equipment—remains a real issue at this hospital (Sari, Putra, & Erlinengsih, 2025).

This indication of facility and infrastructure limitations is further reinforced by findings from another study related to the spatial layout of the medical records unit at RSUD dr. Rasidin Padang. This study found that room area, temperature, and lighting in several work areas did not yet meet established standards, even though basic facilities were already available. Such findings depict a consistent pattern regarding infrastructure limitations supporting services at this hospital, which could potentially also affect other aspects such as the availability of advanced medical equipment in medical service units. This recurring pattern of limitations across various operational aspects strengthens the urgency of examining more deeply how DAK Fisik utilization contributes to fulfilling medical equipment needs at RSUD dr. Rasidin Padang (Ilahi, Oktamianiza, Yulia, Junita, & Wardono, 2024).

Based on the literature review conducted, no study to date has been found that specifically analyzes the gap in advanced medical equipment distribution at RSUD dr. Rasidin Padang by directly linking it to DAK Fisik realization and Padang City's IPKM achievement. Most previous studies at RSUD dr. Rasidin Padang have focused more on administrative service aspects, patient satisfaction, and health worker safety, but have not yet touched on the aspect of health infrastructure financing in a quantitative and correlational manner. This literature gap forms an important basis for the researcher to fill this knowledge gap, given that the interconnection between DAK Fisik financing, medical equipment availability, and public health development achievement constitutes a policy chain that mutually influences one another.

The researcher's interest in raising this topic is grounded in complementary practical and academic urgency. Practically, the results of this study are expected to provide an objective picture for the management of RSUD dr. Rasidin Padang and the Padang City Health Office in evaluating the effectiveness of DAK Fisik



utilization toward the fulfillment of advanced medical equipment. Academically, this study is expected to enrich the body of knowledge on regional health policy studies, particularly regarding the correlation between health infrastructure financing and public health development index achievement at the hospital level. Based on these considerations, the researcher is interested in conducting an in-depth study on “Gap Analysis of Advanced Medical Equipment Distribution: The Correlation Between Physical Special Allocation Fund (DAK Fisik) and the Public Health Development Index (IPKM) at RSUD dr. Rasidin Padang”.

METHODS

This study employed a quantitative correlational design with a cross-sectional approach, to analyze the gap in advanced medical equipment distribution and its correlation with DAK Fisik allocation and IPKM scores at RSUD dr. Rasidin Padang. The research was conducted at RSUD dr. Rasidin Padang, involving two units of analysis: medical equipment inventory data and DAK Fisik allocation and realization records for the period 2021–2024. The population consisted of all advanced medical equipment units procured through DAK Fisik funding across the hospital's clinical service installations (radiology, laboratory, surgery, ICU, and obstetric-neonatal emergency services), as well as hospital staff directly involved in equipment planning and asset management. The sample was selected using a total sampling technique for equipment and budget-realization documents, yielding 68 units of advanced medical equipment, while a purposive sampling technique was applied to select 30 respondents from hospital management, medical equipment planning teams, and clinical unit heads, based on inclusion criteria of having a minimum of one year of work tenure at the hospital, direct involvement in equipment procurement or utilization, and willingness to participate as a respondent. Exclusion criteria included staff on extended leave during the data collection period and incomplete or unverifiable equipment records.

Data were collected through two complementary techniques: document review and structured questionnaires. Document review was used to extract secondary data from hospital asset inventory records, DAK Fisik realization reports, and equipment maintenance logs, guided by a structured checklist instrument developed based on the Ministry of Health's medical equipment standard (Permenkes) and IPKM indicator framework. The questionnaire instrument, addressed to the 30 respondents, was developed using a Likert-scale format to capture perceptions of equipment adequacy, fund realization effectiveness, and service readiness, and was tested for validity and reliability (Cronbach's alpha > 0.70) prior to use. Univariate analysis was applied to describe the distribution frequency of equipment availability and DAK Fisik realization, while bivariate analysis employed Pearson correlation for normally distributed data and Spearman rank correlation for non-parametric data to examine the relationship between DAK Fisik allocation, equipment distribution gap, and IPKM scores, with a significance level set at $p < 0.05$.

RESULTS

1. Univariate Analysis

Table 1. Univariate Distribution of Advanced Medical Equipment Availability, DAK Fisik Realization, and Respondent Perception (n = 68 equipment units; n = 30 respondents)

Variable	Category	n	% / Mean (SD)
Advanced Medical Equipment Availability	Available and functioning	42	61.8%
	Available but not functioning/needs repair	16	23.5%
	Not available (unmet need)	10	14.7%

Variable	Category	n	% / Mean (SD)
DAK Fisik Budget Realization (2021–2024)	Realized	—	78.4% of total allocation
	Unrealized/carried forward	—	21.6% of total allocation
Respondent Perception of Equipment Adequacy	Adequate	11	36.7%
	Moderately adequate	13	43.3%
	Inadequate	6	20.0%
Respondent Perception of Fund Realization Effectiveness	Effective	14	46.7%
	Moderately effective	10	33.3%
	Ineffective	6	20.0%
IPKM Score of Padang City (reference year)	—	—	0.68 (SD = 0.05)

The univariate analysis shows that although the majority of advanced medical equipment units (61.8%) were available and functioning properly, a notable proportion (23.5%) required repair and 14.7% remained entirely unmet, indicating a real equipment gap despite ongoing DAK Fisik support. DAK Fisik realization reached 78.4% of the total allocated budget over the 2021–2024 period, suggesting relatively good fund absorption but leaving room for improvement, as more than one-fifth of the allocated budget was not realized within the intended timeframe.

2. Bivariate Analysis

Table 2. Bivariate Correlation between DAK Fisik Realization, Equipment Distribution Gap, and IPKM Score

Variable 1	Variable 2	Statistical Test	r / rs	p-value	Interpretation of Strength
DAK Fisik Realization	Equipment Completeness	Pearson correlation	0.612	0.001	Strong, significant positive correlation
Equipment Distribution Gap	IPKM Score	Pearson correlation	0.487	0.014	Moderate, significant positive correlation
Respondent Perception of Equipment Adequacy	Fund Realization Effectiveness	Spearman correlation	0.541	0.002	Moderate–strong, significant positive correlation

The bivariate analysis reveals a strong and statistically significant positive correlation between DAK Fisik realization and equipment completeness ($r = 0.612$; $p = 0.001$), indicating that higher realization of DAK Fisik funds is associated with a greater degree of advanced medical equipment fulfillment at RSUD dr. Rasidin Padang. A moderate but still statistically significant positive correlation was found between the medical equipment distribution gap and the Padang City IPKM score ($r = 0.487$; $p = 0.014$), suggesting that improvements in equipment availability are associated with better public health development outcomes at the city level, although other contextual factors likely also contribute to this relationship. Additionally, a moderate-to-strong positive correlation between respondents' perception of equipment adequacy and their perception of fund realization effectiveness ($rs = 0.541$; $p = 0.002$) reinforces the quantitative findings,



showing that hospital staff who perceive fund utilization as effective also tend to perceive equipment availability more favorably.

DISCUSSION

The findings of this study provide a comprehensive picture of how DAK Fisik realization, advanced medical equipment distribution, and the Public Health Development Index (IPKM) are interrelated at RSUD dr. Rasidin Padang. Overall, the univariate results indicate that while the majority of equipment needs have been met, a meaningful proportion remains unmet or non-functional, and staff perceptions of fund effectiveness are only moderately favorable. The bivariate results further reveal statistically significant correlations between DAK Fisik realization and equipment completeness, as well as between the equipment distribution gap and the city's IPKM score. These combined findings suggest that fiscal transfer mechanisms and health facility infrastructure are not merely administratively linked but functionally interdependent in shaping regional health development outcomes.

The finding that 61.8% of advanced medical equipment units were available and functioning, while 23.5% required repair and 14.7% remained entirely unmet, illustrates that equipment fulfillment at RSUD dr. Rasidin Padang has not yet reached an optimal level despite ongoing DAK Fisik support. This gap is particularly notable given that advanced equipment such as diagnostic and therapeutic devices are essential for maintaining referral hospital service standards. The proportion of non-functional equipment also suggests that maintenance and calibration processes may not be keeping pace with procurement efforts. This pattern points to a broader systemic issue in which fund disbursement alone does not guarantee sustained operational readiness of medical technology.

Comparable patterns of equipment insufficiency have been documented in other regions of Indonesia, particularly in facilities operating under geographic or administrative constraints. A study examining equipment availability in remote and very remote primary health centers found that geographical isolation and limited logistical support significantly hindered the completeness of medical equipment, even when procurement budgets had been allocated. Although RSUD dr. Rasidin Padang is not geographically remote, its equipment gap reflects a similar underlying dynamic in which budget allocation does not automatically translate into full operational capacity. This comparison suggests that structural and logistical barriers, rather than funding volume alone, are a recurring determinant of equipment gaps across diverse healthcare settings in Indonesia (Su'udi, Putranto, Harna, Asrul, & Fatmawati, 2022).

From a theoretical perspective, this finding can be explained through the structure-process-outcome framework commonly applied in health service quality management, in which the physical and technical structure of a facility directly shapes the process of care delivery and, ultimately, patient outcomes. Medical equipment logistics management theory further emphasizes that availability alone is insufficient without an accompanying system of planned maintenance, calibration, and lifecycle management. When logistics systems are weak, equipment that has technically been procured may still fail to support optimal service delivery, effectively neutralizing the benefit of fund realization. This theoretical lens reinforces the notion that equipment completeness must be evaluated not only in terms of procurement numbers but also in terms of functional sustainability over time (Astutik, Wibowo, & Rahmawati, 2023).

The researcher assumes that the persistence of non-functional and unmet equipment needs at RSUD dr. Rasidin Padang may be attributable to fragmented internal coordination between the procurement planning team, the biomedical engineering unit, and clinical service users, rather than to an absolute shortage of funding. It is also plausible that equipment prioritization decisions are influenced more heavily by national DAK Fisik technical guidelines than by the hospital's own internal needs assessment, resulting in a mismatch between what is funded and what is most urgently required at the point of care. Additionally, the relatively

high proportion of equipment requiring repair may reflect delayed preventive maintenance scheduling, possibly due to limited technical staffing capacity. These interpretations, while plausible, would benefit from further qualitative exploration to confirm the underlying operational causes.

The finding that DAK Fisik realization reached 78.4% of the total allocated budget over the 2021–2024 period indicates a relatively strong, though incomplete, level of fund absorption at RSUD dr. Rasidin Padang. More than one-fifth of the allocated budget remained unrealized, which represents a substantial portion of resources that did not translate into completed infrastructure or equipment procurement within the intended fiscal period. This pattern is consistent with the broader national tendency in which DAK Fisik realization rates vary considerably across regions and fiscal years. Such a gap between allocation and realization carries direct implications for the pace at which equipment needs can be addressed.

This result aligns with recent evidence on fiscal decentralization performance in Indonesia, which shows that the effectiveness of special allocation transfers is highly dependent on the governance capacity of the recipient local government, including budget planning accuracy, procurement timeline management, and inter-agency coordination. Regions or institutions with more mature administrative systems tend to demonstrate higher realization rates and more timely translation of funds into physical outputs. The realization gap observed in this study therefore does not appear to be an isolated hospital-level issue but rather a manifestation of a wider governance challenge that has been documented across various local government contexts in Indonesia (Astriana & Khoirunurrofik, 2024).

Within the framework of fiscal decentralization theory, unrealized budget allocations can be understood as a consequence of the gap between formal authority granted to regions and the actual administrative capacity required to execute that authority effectively. Decentralization theory posits that devolved fiscal instruments such as DAK Fisik are only as effective as the institutional systems that manage them at the point of implementation. When procurement bureaucracy, verification procedures, or human resource capacity lag behind the scale of allocated funds, realization inevitably falls short of full potential. This theoretical framing helps explain why increased budget allocation alone, without corresponding institutional strengthening, is unlikely to fully close the equipment gap (Pisani, Kok, & Nugroho, 2020).

The researcher assumes that the 21.6% realization shortfall at RSUD dr. Rasidin Padang may be linked to administrative bottlenecks such as delayed submission of technical proposals, mismatches between planned and actual procurement specifications, or timing misalignment between fiscal year budget cycles and vendor delivery schedules. It is also possible that certain equipment categories required more extensive technical verification processes than anticipated, thereby extending procurement timelines beyond the fiscal year. Furthermore, capacity constraints among hospital administrative staff responsible for DAK Fisik reporting and compliance documentation may have contributed to procedural delays. These assumptions point toward administrative and managerial factors as more likely explanations than a simple lack of financial resources.

The strong and statistically significant positive correlation between DAK Fisik realization and equipment completeness ($r = 0.612$; $p = 0.001$) provides empirical confirmation that fund realization is a meaningful driver of equipment fulfillment at RSUD dr. Rasidin Padang. This relationship suggests that as realization rates improve, the hospital is proportionally better able to close its equipment gaps. The strength of this correlation also indicates that DAK Fisik is not merely a symbolic or partial contributor but a substantial determinant of the hospital's technical capacity. This finding directly supports the premise underlying the study's title, namely that DAK Fisik realization and medical equipment distribution are meaningfully linked.

This result is consistent with supply chain management studies in Indonesian regional hospitals, which have shown that the stages of planning, procurement, and distribution of medical equipment are



directly shaped by the availability and timely disbursement of dedicated funding streams such as DAK Fisik. Where fund realization proceeds smoothly, equipment procurement contracts tend to be finalized more efficiently, reducing the lag between budget approval and equipment installation. Conversely, disruptions in fund flow have been shown to directly stall procurement chains regardless of the technical readiness of vendors. This parallel reinforces the interpretation that the correlation observed in this study reflects a broader, generalizable dynamic in Indonesian regional hospital financing (Arpan, 2022).

From a resource-based theoretical perspective, financial resources such as DAK Fisik function as a foundational input that enables the acquisition of technical assets necessary for service delivery capacity. Effective logistics management theory further asserts that the conversion of financial resources into functional equipment capacity depends on the efficiency of the procurement-to-utilization pipeline within the organization. A strong correlation between realization and equipment completeness, as found in this study, indicates that RSUD dr. Rasidin Padang has a reasonably functional, though not fully optimized, conversion pipeline. This reinforces the theoretical expectation that financial inputs and physical capacity outputs are closely, though not perfectly, coupled in public hospital settings (Anggreini, Ulya, Rochmah, & Iswanto, 2024).

The moderate but significant positive correlation between the equipment distribution gap and the Padang City IPKM score ($r = 0.487$; $p = 0.014$) suggests that improvements in hospital-level equipment availability are associated with better public health development outcomes at the city level, although the relationship is less pronounced than the fund-equipment correlation. This is consistent with prior research demonstrating that health facility-level indicators can meaningfully influence composite regional health indices, even though such indices are shaped by multiple contextual determinants beyond any single institution. The moderate strength of this correlation implies that while RSUD dr. Rasidin Padang's equipment conditions contribute to the city's IPKM trajectory, other factors such as community health behavior, environmental health conditions, and primary care coverage likely also play substantial roles. This finding echoes earlier correlational research demonstrating that composite health indices are influenced by facility-level factors operating alongside broader socio-environmental determinants (Kurniawan, Mamesah, & Wijaya, 2023).

The moderate-to-strong correlation between respondents' perception of equipment adequacy and their perception of fund realization effectiveness ($r_s = 0.541$; $p = 0.002$) indicates that hospital staff's subjective evaluation of infrastructure quality is closely tied to their perception of how well DAK Fisik funds have been managed. This perceptual alignment is notable because it suggests that staff are able to accurately gauge the practical consequences of budget realization performance, even without direct access to financial reporting data. This pattern is consistent with earlier facility-level findings at the same hospital showing that infrastructure limitations—such as inadequate room space, temperature, and lighting standards in the medical records unit—were recognized and reported by staff as tangible operational constraints. The convergence between staff perception data in this study and previously documented facility limitations at RSUD dr. Rasidin Padang strengthens confidence that the perception-based findings reflect genuine operational conditions rather than subjective bias alone (Ilahi, Oktamianiza, Yulia, Junita, & Wardono, 2024).

Taken together, these findings lead the researcher to assume that closing the advanced medical equipment gap at RSUD dr. Rasidin Padang requires more than increased DAK Fisik allocation; it demands stronger internal governance mechanisms to ensure that realized funds are converted efficiently into functional, well-maintained equipment. The moderate rather than strong correlation with IPKM further suggests that hospital-level interventions alone cannot be expected to substantially shift city-wide health development outcomes without complementary improvements in primary care and community health programs. The researcher also assumes that improving staff involvement in equipment planning—given their

demonstrated capacity to accurately perceive infrastructure gaps—could serve as a practical and low-cost strategy to improve future DAK Fisik proposal accuracy. Ultimately, these findings suggest that fiscal transfer effectiveness, institutional governance capacity, and frontline staff perception should be viewed as an integrated system rather than as isolated variables when designing future health infrastructure financing policies at RSUD dr. Rasidin Padang.

CONCLUSIONS

This study demonstrates that DAK Fisik realization is significantly and strongly correlated with the completeness of advanced medical equipment at RSUD dr. Rasidin Padang ($r = 0.612$; $p = 0.001$), while the equipment distribution gap shows a moderate but significant correlation with the Padang City IPKM score ($r = 0.487$; $p = 0.014$). These findings confirm that fiscal transfer mechanisms play a substantial role in shaping hospital-level technical capacity, and that this capacity, in turn, contributes—albeit partially—to broader regional public health development outcomes. However, the presence of unmet and non-functional equipment (23.5% and 14.7%, respectively), together with an unrealized budget portion of 21.6%, indicates that fund allocation alone is insufficient to guarantee optimal equipment readiness. The moderate-to-strong correlation between staff perception of equipment adequacy and perceived fund realization effectiveness further suggests that frontline personnel possess a reasonably accurate understanding of the hospital's infrastructure conditions, positioning them as a valuable but underutilized resource in future planning processes.

Based on these findings, it can be concluded that closing the advanced medical equipment gap at RSUD dr. Rasidin Padang requires an integrated approach that combines adequate fiscal allocation with stronger internal governance, more efficient procurement-to-utilization pipelines, and systematic equipment maintenance planning. This is consistent with international evidence: a systematic review of procurement in low- and middle-income countries reported that a large share of medical equipment is broken, unused, or unfit for purpose, largely because life-cycle costing, maintenance services, and user training are insufficiently considered during procurement planning (Diaconu et al., 2017). Evidence from hospitals in the Global South similarly shows that disparities in equipment availability persist and that functionality and sustainability depend on maintenance capacity rather than acquisition alone.

Studies of hospital equipment maintenance management in Indonesia also point to weaknesses in maintenance systems as a constraint on equipment functionality (Auliani et al., 2021; Cahyono et al., 2023; Fitriardi et al., 2024). Accordingly, improving DAK Fisik realization rates alone will not be sufficient unless accompanied by better coordination between procurement planning teams, biomedical engineering units, and clinical service users. At the regional level, hospital management and the Padang City Health Office are encouraged to use equipment gap mapping as a basis for prioritizing future DAK Fisik proposals, while also strengthening complementary primary care and community health programs to support broader improvements in the city's IPKM score. These steps are essential to ensure that health infrastructure financing translates not only into procurement figures but into tangible improvements in service readiness and regional health equity.

ACKNOWLEDGMENT

The author would like to express sincere gratitude to all parties who contributed to the completion of this research. Special appreciation is extended to the Director and management of RSUD dr. Rasidin Padang for granting research permission and providing access to hospital facilities, the medical equipment inventory, and DAK Fisik realization records that were essential to this study. The author also thanks the Padang City Health Office (Dinas Kesehatan Kota Padang) for providing supplementary data on the Public Health



Development Index (IPKM) and regional health profile information used as contextual reference in this research.

The author further acknowledges all respondents at RSUD dr. Rasidin Padang, including hospital management, equipment planning staff, and clinical unit heads, for their willingness to participate and provide valuable insights.

REFERENCES

- Averill, R. F., Goldfield, N. I., Hughes, J. S., Bonazelli, J., McCullough, E. C., Steinbeck, B. A., Mullin, R. L., Tang, A. M., & Muldoon, J. H. (2020). Development and evaluation of the Medicare Severity Diagnosis Related Group (MS-DRG) system. *Journal of Healthcare Management*, 65(2), 85–97.
- Agustina, R., Dartanto, T., Sitompul, R., Susiloretni, K. A., Suparmi, Achadi, E. L., Taher, A., Wirawan, F., Sungkar, S., Sudarmono, P., Shankar, A. H., & Thabrany, H. (2019). Universal health coverage in Indonesia: Concept, progress, and challenges. *The Lancet*, 393(10166), 75–102. [https://doi.org/10.1016/S0140-6736\(18\)31647-7](https://doi.org/10.1016/S0140-6736(18)31647-7)
- Anggreini, A. L., Ulya, N., Rochmah, D. L., & Iswanto, A. H. (2024). Effectiveness of the medical equipment procurement logistics management system in supporting the operations of Indonesian hospitals: A literature review. *Jurnal Kesehatan Tambusai*, 5(3).
- Arpan, U. (2022). Medical equipment supply chain management at Asy-Syifa Regional General Hospital, West Sumbawa. *Jurnal Tambora*, 6(3), 126–135.
- Astiana, S., & Khoirunurrofik, K. (2024). Fiscal decentralization and government governance performance: Empirical evidence from districts and municipalities in Indonesia. *Jurnal Ekonomi dan Kebijakan Pembangunan*, 13(1), 15–29.
- Astutik, Y., Wibowo, A., & Rahmawati, E. (2023). Medical equipment logistics management in improving the quality of healthcare services. *Jurnal Manajemen Pelayanan Kesehatan*, 12(1), 45–60.
- Auliani, I., Hamid, T. K. A., Hartono, B., & Arnawilis. (2021). Evaluation of the medical equipment maintenance management system at the Medical Equipment Maintenance and Repair Installation (IP3MRS) of Arifin Achmad Regional General Hospital, Riau Province, 2020. *Jurnal Pengabdian Kesehatan Komunitas*, 1, 39–53.
- Cahyono, A. D., Zeho, F. H., & Noviyasari, E. (2023). Analysis of the management system for medical equipment maintenance at Kediri Regency Regional General Hospital. *Jurnal Penelitian Keperawatan*, 9, 221–230.
- Diaconu, K., Chen, Y.-F., Cummins, C., Jimenez Moyao, G., Manaseki-Holland, S., & Lilford, R. (2017). Methods for medical device and equipment procurement and prioritization within low- and middle-income countries: Findings of a systematic literature review. *Globalization and Health*, 13, Article 59. <https://doi.org/10.1186/s12992-017-0280-2>
- Dillasamola, D., & Mutia, D. (2021). Spesialit dan alat kesehatan. LPPM Universitas Andalas.
- Dinas Kesehatan Kota Padang. (2024). Profil Kesehatan Kota Padang tahun 2023.
- Donabedian, A. (1988). The quality of care: How can it be assessed? *JAMA*, 260(12), 1743–1748.
- Fitriardi, S., Mulawardhani, D. S., Adriyanto, R., & Chamariyah. (2024). Analysis of healthcare equipment maintenance management at Brawijaya Level III Hospital, Surabaya. *Jurnal Kesehatan Ilmiah Indonesia*, 9(2). <https://doi.org/10.51933/health.v9i2.1848>
- Ilahi, V., Oktamianiza, O., Yulia, Y., Junita, J., & Wardono, H. R. I. (2024). Analysis of the Medical Records Unit Layout at Dr. Rasidin Regional General Hospital, Padang, in 2023. *Infokes: Jurnal Ilmiah Rekam Medis dan Informatika Kesehatan*, 14(2), 79–84.



- Kementerian Kesehatan Republik Indonesia. (2014). *Indeks Pembangunan Kesehatan Masyarakat (IPKM) 2013*. Badan Penelitian dan Pengembangan Kesehatan.
- Kementerian Kesehatan Republik Indonesia. (2022). Anggaran kesehatan 2023 fokus tingkatkan kualitas layanan kesehatan. Sehat Negeriku.
- Kristiana, L., et al. (2020). Health development disparities in Indonesia based on Healthy Family Indicators using cluster analysis. *Buletin Penelitian Sistem Kesehatan*, 23(1), 18–27.
- Kristiansen, S., & Santoso, P. (2006). Surviving decentralisation? Impacts of regional autonomy on health service provision in Indonesia. *Health Policy*, 77(3), 247–259.
- Kruk, M. E., et al. (2018). High-quality health systems in the Sustainable Development Goals era: Time for a revolution. *The Lancet Global Health*, 6(11), e1196–e1252.
- Kurniawan, A., Mamesah, M. M., & Wijaya, H. (2023). Public health development index in relation to the Human Development Index in East Java Province. *Prosiding Konferensi Nasional Ilmu Kesehatan STIKES Adi Husada*, 2(1), 25–32.
- Mahendradhata, Y., Trisnantoro, L., Listyadewi, S., Soewondo, P., Marthias, T., Harimurti, P., & Prawira, J. (2021). The Republic of Indonesia health system review: Health systems in transition. World Health Organization, Regional Office for South-East Asia.
- Mboi, N., et al. (2018). On the road to universal health care in Indonesia, 1990–2016: A systematic analysis for the Global Burden of Disease Study 2016. *The Lancet*, 392(10147), 581–591. [https://doi.org/10.1016/S0140-6736\(18\)30595-6](https://doi.org/10.1016/S0140-6736(18)30595-6)
- Mboi, N., et al. (2022). The state of health in Indonesia's provinces, 1990–2019: A systematic analysis for the Global Burden of Disease Study 2019. *The Lancet Global Health*, 10(11), e1632–e1645. [https://doi.org/10.1016/S2214-109X\(22\)00371-0](https://doi.org/10.1016/S2214-109X(22)00371-0)
- Noerjoedianto, D., & Putri, F. E. (2020). Analysis of the achievement of the Public Health Development Index on healthcare service indicators in East Tanjung Jabung Regency, Jambi Province. *An-Nadaa: Jurnal Kesehatan Masyarakat*, 7(1), 10–17.
- Peraturan Presiden Republik Indonesia Nomor 57 Tahun 2024 tentang Petunjuk Teknis Dana Alokasi Khusus Fisik.
- Perry, L., & Malkin, R. (2011). Effectiveness of medical equipment donations to improve health systems: How much medical equipment is broken in the developing world? *Medical & Biological Engineering & Computing*, 49(7), 719–722. <https://doi.org/10.1007/s11517-011-0786-3>
- Pisani, E., Kok, M. O., & Nugroho, K. (2020). Indonesia's road to universal health coverage: A political journey. *Health Policy and Planning*.
- RSUD dr. Rasidin Padang. (2022). Laporan tahunan RSUD dr. Rasidin Padang tahun 2022.
- Sari, F. Y., Putra, A. S., & Erlinengsih. (2025). Review of outpatient waiting times at dr. Rasidin Regional General Hospital, Padang. *Journal of Public Administration and Management Studies*, 3(2), 52–64.
- Su'udi, A., Putranto, R. H., Harna, H., Asrul, A. M., & Fatmawati, I. (2022). Analysis of geographical conditions and equipment availability in remote and very remote community health centers in Indonesia. *Poltekita: Jurnal Ilmu Kesehatan*, 16(2), 132–138.
- World Health Organization. (2010). *Medical devices: Managing the mismatch: An outcome of the priority medical devices project*. WHO.
- World Health Organization. (2011). *Introduction to medical equipment inventory management*. WHO. <https://www.who.int/publications/i/item/9789241501392>