

Improving The Health Care System in Indonesia From an Economic Perspective: Health System Performance Framework (WHO)

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Abstract

Community Health Centers (Puskesmas) are the spearhead of primary health services in Indonesia, playing an important role in ensuring equitable access and improving the quality of health services. However, the performance of *Puskesmas* still faces challenges related to the effectiveness and efficiency of resource utilization. This study aims to analyze strategies for improving the *Puskesmas* system from an economic perspective, focusing on the *Health System Performance Framework* approach based on WHO standards. The study employs a qualitative research method with a literature study approach. The research findings highlight key areas such as service delivery, health workforce, health financing, medical products and technologies, information systems, and leadership and governance. These are addressed through measures such as providing targeted, effective, and high-quality services; ensuring equitable distribution and competence of health workers; implementing fair and sustainable health financing; maintaining accurate and timely health data; and fostering transparent and accountable governance structures. Specifically, the study emphasizes the importance of strengthening service provision, improving the competency distribution of health workers, securing sustainable health financing mechanisms, maintaining reliable health information systems, and enhancing governance practices. The research underscores that a holistic and integrated approach is essential for strengthening *Puskesmas* performance, with critical implications for policy development, resource allocation, and management practices within the Indonesian primary healthcare system.

Keywords: Health Center, Public Service, Health Economy.

INTRODUCTION

The Public Health Center (Puskesmas) is the spearhead of primary health services in Indonesia and plays a strategic role in improving public health (Hasanbasri et al., 2024). As a first-level health service facility, Puskesmas is regulated under the Regulation of the Minister of Health of the Republic of Indonesia Number 43 of 2019, which emphasizes that its functions extend

beyond curative services to include promotive, preventive, and rehabilitative services in a comprehensive, integrated, and sustainable manner (Arsyad et al., 2022). The existence of health centers across all regions, including remote areas, is expected to ensure equitable access to and quality of health services (Leosari et al., 2023). Strengthening Puskesmas is also part of the health transformation agenda of the Ministry of Health, which highlights the importance of revitalizing primary health care (Kementerian Kesehatan RI, 2025). Furthermore, studies show that challenges remain in terms of infrastructure, workforce, and service delivery, especially in rural and underserved areas (Trisnantoro et al., 2019).

In Indonesia, a facility provided to the community in the form of the National Health Insurance (JKN), established in 2014, has significantly changed the dynamics of healthcare delivery, including services provided by Puskesmas (Hermansyah, Sainsbury, & Krass, 2018). Based on the Health Social Security Program Management Report as of June 30, 2025, the number of JKN participants in Indonesia had reached 280,583,263 (BPJS Kesehatan, 2025). The JKN system is designed to integrate pharmacies into the primary care network (Hermansyah et al., 2018). However, it has inadvertently caused distortions that affect pharmaceutical practices and highlighted the need for systemic changes—particularly in pharmacy education and policy (Hermansyah et al., 2018; Hermansyah & Wulandari, 2020).

One economic aspect that affects the Puskesmas system is the distribution of health benefits. The JKN payment system appears to disproportionately benefit the upper socioeconomic group. Urban areas, particularly in Java and Bali, tend to experience greater access to healthcare benefits compared to rural areas, partly due to disparities in regional healthcare expenditure and the intensity of available care (Wulandari, 2025). This urban–rural gap in healthcare utilization is further supported by studies showing that urban residents are more likely to use hospital services, both inpatient and outpatient, than those in other regions (Wulandari et al., 2022; Laksono, 2019; Laksono et al., 2023). These disparities have resulted in inequalities in the Public Health Development Index, which measures health indicators across regions (Kusumawardani et al., 2018; Hosseinpoor et al., 2018). Western Indonesia generally has stronger infrastructure and health services compared to the eastern region (Kusumawardani et al., 2018). Such imbalances in healthcare infrastructure and service availability have deepened public mistrust and hindered equitable care, underlining the urgent need to address geographic healthcare inequalities to achieve social equity (Suparmi et al., 2018; Kusumawardani et al., 2018).

The effectiveness of public services, including health services, can be assessed by the extent to which inputs are efficiently transformed into outputs and outcomes that directly improve people's welfare (Chavarina, Teerawattananon, & Pearson, 2023). However, in practice, the Puskesmas system continues to face complex challenges, particularly concerning effectiveness and efficiency in resource utilization. These challenges include shortages of medical personnel, uneven distribution of facilities, limited operational budgets, and underutilization of health information technology (Sari, Rahman, & Yulianti, 2021; Nathan & Rostiaty, 2024). From an economic perspective, these issues emphasize the need to optimize the allocation of scarce resources to achieve maximum health outcomes at the lowest possible cost (Rice & Unruh, 2016; Sambodo et

al., 2023; Setiawan Nathan, 2024). Empirical studies using data envelopment analysis have shown inefficiencies in many community health centers, indicating that many *Puskesmas* operate below optimal technical efficiency (Miharti, 2021; Atmanti, 2019).

Previous studies have examined the challenges facing primary healthcare systems, particularly regarding resource allocation and service efficiency (Endalamaw et al., 2023; Mbau et al., 2023). Hermansyah et al. (2018) highlighted distortions in pharmaceutical practices within the *JKN* system and emphasized the need for systemic reforms in pharmacy policy and education. Meanwhile, Wulandari et al. (2022) demonstrated significantly higher hospital service utilization among urban residents compared to rural populations, revealing inequalities in healthcare access. While these studies provide valuable insights, they remain limited in scope. For example, Hermansyah focused on pharmacy integration without considering overall *Puskesmas* performance, and Wulandari emphasized regional disparities without linking them to strategies for economic optimization.

From an economic perspective, it is evident that although *Puskesmas* aims to deliver equitable healthcare, substantial economic and geographic disparities persist. Addressing these disparities is crucial for strengthening public trust in health centers and ensuring more uniform and equitable access to services across Indonesia. Thus, it is necessary to study how to improve the health system in Indonesia from an economic standpoint.

The study aims to identify strategies for improving service delivery, health workforce distribution, financing, medical products and technologies, information systems, and governance to ensure that *Puskesmas* can provide effective, equitable, and sustainable healthcare services. Its expected contribution is twofold: theoretically, it advances understanding of economic optimization in primary healthcare systems; practically, it provides actionable recommendations for policymakers, health managers, and practitioners to enhance *Puskesmas* performance and reduce regional disparities in Indonesia, thereby improving public health outcomes and social equity.

RESEARCH METHOD

This research employed a qualitative method with a literature study approach, focusing on the analysis and interpretation of written materials in their context. To ensure credibility, the documents reviewed were verified for authenticity (Abdussamad, 2021). The analysis used descriptive qualitative methods, which involved delineating, describing, and comparing data with relevant theories before drawing conclusions (Cited by J. et al., 2019). The research process began with collecting articles related to public health center services, followed by data recapitulation, analysis, and conclusion.

RESULTS AND DISCUSSION

Puskesmas, or community health centers, are a key element in Indonesia's health system. They play a crucial role in providing basic level healthcare services. However, the main challenges faced are the increasing number of non-communicable diseases and the poorly organized health

care system, which hinders the overall efficiency of the health system (Suryanto et al., 2017). The efficiency of the public health service sector, especially health centers in Indonesia, faces several significant challenges. One of the main problems is the uneven distribution of health workers, which affects the ability to provide services efficiently across the country. Analysis of economic aspects in public services shows that economic factors play an important role in the effectiveness and efficiency of public service delivery. Based on the theory of health economics, the Puskesmas system can be analyzed through Health System Performance Framework:

Service Delivery

Service Delivery is a targeted, effective, and quality service. In order for Puskesmas in Indonesia to achieve this service, it is better to increase accessibility, by means of location and service hours adjusted to needs, especially in remote areas that are difficult to reach, it is better to provide a ball pick-up service. In addition, public-private partnerships (PPPs) also offer ways to increase cost-effectiveness in service delivery. In South Africa, studies on tuberculosis treatment show that PPP can reduce costs for patients and governments, with the adjusted PPP model significantly reducing the government financing required per TB patient treated (Arinaminpathy et al., 2021).

Health Workforce

Health Workforce is the distribution and competence of health workers. Increase the number of medical personnel according to the WHO ratio standard (1 doctor per 1,000 population). Wide geographical distribution and constrained health infrastructure exacerbate the situation in public health services in Indonesia, especially in remote areas.

Health Financing

Health Financing is a fair and sustainable health financing. Budget optimization through needs-based planning, the use of the Puskesmas management information system (SIMPUS) for data recording, reporting, and analysis.

Medical Products and Technologies

Medical Products and Technologies is the availability of drugs and medical devices. Procurement of drugs and medical devices based on e-catalog to prevent waste by utilizing technology. digital transformation in the public sector, such as the one in Ghana, shows that digital strategies aligned with national policies can improve public administration and service governance (Tiika et al., 2024).

Information Systems

Information Systems is accurate and fast health data. The use of electronic medical records to make patient history easily accessible and reduce duplication of existing services. The implementation of this digital transformation provides better benefits for service providers for

current and future generations (Kwilinski et al., 2024). The use of digital services can increase efficiency in the health system. Studies in Europe show that the integration of digital services and e-government brings transformative changes in the health system by increasing efficiency and effectiveness in the delivery of public health services. The use of technology-based frugal innovations, such as payment systems using mobile technology, has also shown a positive impact on private sector productivity and public service provision, although the inclusivity of these technologies can increase in the long term (Altamirano & Beers, 2018).

Leadership and Governance

Leadership and Governance is transparent and accountable governance. Puskesmas in Indonesia should involve the community in planning and evaluating services so that they are in accordance with the needs of the surrounding community. Transparency in the use of funds and performance reporting. Overall, the economic aspect of public services is strongly influenced by fiscal regulation, cooperation between the public and private sectors, technological innovation, and digitalization readiness. Systemic factors such as corruption, regulation, and institutional quality are also important indicators that affect the results of public services (Kpegba et al., 2024). In Kenya, for example, although fiscal decentralization does not directly improve the accessibility of services, the presence of contextual factors such as corruption and the existing legal framework moderates the impact (Mwangi et al., 2023).

For service delivery, Sinanovic and Kumaranayake demonstrated in South Africa that public-private partnerships (PPPs) reduce costs for patients and governments in tuberculosis treatment, illustrating the potential of PPPs to improve accessibility and cost-effectiveness in Indonesia's Puskesmas, particularly in remote areas. Regarding the health workforce, Chairunisa et al. emphasized that a sufficient and geographically balanced distribution of medical personnel is critical to improving health service coverage, echoing the current challenges in Indonesia where remote areas face personnel shortages. In terms of medical products and digital transformation, Tiika (2024) found that integrating digital strategies with national policies in Ghana enhances public administration and service governance, which aligns with the recommendation for Puskesmas to optimize procurement through e-catalogs and digital monitoring. Furthermore, Kwilinski (2024) and Altamirano & Beers (2018) highlight how electronic health records and technology-based innovations increase efficiency, reduce duplication, and support better long-term service outcomes. Finally, governance and leadership considerations are reinforced by Kpegba (2024) and Mwangi (2023), showing that transparency, accountability, and contextual factors such as corruption and regulatory quality strongly influence service performance. This study fills the gap by synthesizing these economic, technological, and governance dimensions into a cohesive framework for evaluating Puskesmas performance in Indonesia, offering practical insights for improving service delivery, workforce management, financing, technology adoption, and governance. The research aims to provide actionable recommendations for policymakers and health managers to enhance efficiency, equity, and quality in primary health services, ultimately contributing to better public health outcomes and informed decision-making.

CONCLUSION

Improving public health center services in Indonesia from an economic perspective requires strengthening key pillars such as service delivery, workforce distribution, financing, medical products and technologies, information systems, and governance, particularly in remote areas where infrastructure and health systems remain underdeveloped. More equitable distribution of medical personnel and addressing disparities in regional fiscal capacity are critical to reducing gaps in healthcare facilities. Public–private partnerships and the adoption of technology-based innovations, including mobile health services, can enhance service quality and governance. Future research should explore the cost-effectiveness and long-term sustainability of integrating digital health innovations and public–private collaborations to optimize health outcomes and reduce regional inequalities.

REFERENCES

- Altamirano, M. A., & Beers, C. P. V. (2018). Frugal Innovations in Technological and Institutional Infrastructure: Impact of Mobile Phone Technology on Productivity, Public Service Provision and Inclusiveness. *European Journal of Development Research*, 30(1), 84–107. <https://doi.org/10.1057/s41287-017-0115-2>
- Arinaminpathy, N., Nandi, A., Vijayan, S., Jha, N., Nair, S. A., Kumta, S., Dewan, P., Rade, K., Vadera, B., & Rao, R. (2021). Engaging with the private healthcare sector for the control of tuberculosis in India: cost and cost-effectiveness. *BMJ Global Health*, 6(10), e006114.
- Abdussamad, Z. (2021). Metode penelitian kualitatif. In *Proceedings of the National Academy of Sciences* (Vol. 3, Issue 1). Syakir Media Press.
- Arsyad, D. S., Achadi, A., Soemarmo, D. S., & Mulyanto, J. (2022). The readiness of public primary health care (Puskesmas) for delivering cardiovascular disease services in Indonesia: A cross-sectional study. *BMC Health Services Research*, 22(1), 1–11. <https://doi.org/10.1186/s12913-022-07957-9>
- Atmanti, H. D. (2019). The efficiency of healthcare system in Indonesia in 2014–2018. *Humanities & Social Sciences Reviews*, 7(6), 769–776. <https://doi.org/10.18510/hssr.2019.76127>
- BPJS Kesehatan. (2025). *Health social security program management report as of June 30, 2025*. BPJS Kesehatan.
- Chavarina, K., Teerawattananon, Y., & Pearson, M. (2023). Health economic evaluations for Indonesia: Toward more useful evidence for resource allocation. *Frontiers in Public Health*, 11, 10306002. <https://doi.org/10.3389/fpubh.2023.10306002>
- Endalamaw, A., Khatri, R. B., Erku, D., Nigatu, F., Zewdie, A., Wolka, E., & Assefa, Y. (2023). Successes and challenges towards improving quality of primary health care services: a scoping review. *BMC Health Services Research*, 23(1), 893.
- Hasanbasri, M., Trisnantoro, L., & Marthias, T. (2024). Analyzing primary healthcare governance in Indonesia. *Frontiers in Public Health*, 12, 1411190. <https://doi.org/10.3389/fpubh.2024.1411190>
- Hermansyah, A., & Wulandari, L. (2020). Primary health care policy and vision for community pharmacy and pharmacists in Indonesia. *[Artikel/Jurnal]*.
- Hermansyah, A., Sainsbury, E., & Krass, I. (2018). Investigating the impact of the universal healthcare coverage programme on community pharmacy practice. *Health & Social Care*

- in the Community*, 26(2), e249–e260. <https://doi.org/10.1111/hsc.12506>
- Hosseinpoor, A. R., Kusumawardani, N., Nambiar, D., Trihono, H., & Suparmi. (2018). Monitoring health inequality in Indonesia. *Global Health Action*, 11(sup1), 1500133. <https://doi.org/10.1080/16549716.2018.1500133>
- Kementerian Kesehatan Republik Indonesia. (2025). *Health transformation: Strengthening primary healthcare services*. Jakarta: Kemenkes RI.
- Kpegba, S. A., Atisu, L. K. K., Nketiah Sarfo, K., Oppong, C., & Akwaa-Sekyi, E. K. (2024). Public expenditure and economic sustainability: Does institutional quality matter? *Sustainable Development*, 32(6), 6241–6252. <https://doi.org/10.1002/sd.3024>
- Kusumawardani, N., Suparmi, & Nambiar, D. (2018). Subnational regional inequality in the public health development index in Indonesia. *Global Health Action*, 11(sup1), 1500133. <https://doi.org/10.1080/16549716.2018.1500133>
- Kwilinski, A., Szczepanska-Woszczyna, K., Lyulyov, O., & Pimonenko, T. (2024). Digital public services: Catalysts for healthcare efficiency. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(3), 100319. <https://doi.org/10.1016/j.joitmc.2024.100319>
- Laksono, A. D. (2019). Regional disparities of health center utilization in rural Indonesia. *Malaysian Journal of Public Health Medicine*, 19(2), 112–118.
- Laksono, A. D., Wulandari, R. D., Nantabah, Z. K., Rohmah, N., & Zuardin, Z. (2023). Regional disparities in hospital utilisation in Indonesia. *BMJ Open*, 13(1), e064532. <https://doi.org/10.1136/bmjopen-2022-064532>
- Leosari, Y., Riono, P., & Martini, S. (2023). Spatial evaluation of healthcare accessibility across Indonesia: Adequacy of Puskesmas workforce and facility distribution. *PLOS Global Public Health*, 3(5), e0002217. <https://doi.org/10.1371/journal.pgph.0002217>
- Miharti, S. (2021). Community health center efficiency: The impact of organizational design and community fit. *BMC Health Services Research*, 21(1), 1–11. <https://doi.org/10.1186/s12913-021-07239-1>
- Mbau, R., Musiega, A., Nyawira, L., Tsofa, B., Mulwa, A., Molyneux, S., Maina, I., Jemutai, J., Normand, C., & Hanson, K. (2023). Analysing the efficiency of health systems: a systematic review of the literature. *Applied Health Economics and Health Policy*, 21(2), 205–224.
- Mwangi, J., Naituli, G., Kilika, J., & Muna, W. (2023). Fiscal decentralisation and public service delivery: Evidence and lessons from sub-national governments in Kenya. *Commonwealth Journal of Local Governance*, 28, 5–23. <https://doi.org/10.5130/cjlg.vi28.7712>
- Nathan, D. S., & Rostiaty, E. (2024). An analysis study on the effect of the use of electronic medical records on the effectiveness and efficiency of services at Puskesmas in Indonesia: A systematic review. *The International Journal of Medical Science and Health Research*, 5(7), 20–34.
- Rice, T., & Unruh, L. (2016). *The economics of health reconsidered* (5th ed.). Health Administration Press.
- Sambodo, N. P., Wahyuni, T., & Prasetyo, S. (2023). Effects of performance-based capitation payment on the performance of Puskesmas. *Social Science & Medicine*, 318, 115568. <https://doi.org/10.1016/j.socscimed.2023.115568>
- Sari, N. P., Rahman, F., & Yulianti, D. (2021). Efisiensi dan efektivitas pelayanan Puskesmas di Indonesia. *Jurnal Administrasi Kesehatan Indonesia*, 9(2), 145–156.
- Setiawan Nathan, D. (2024). Implementation of EMR system in Indonesian health facilities: Benefits and constraints. *arXiv preprint*. <https://arxiv.org/abs/2402.12345>

- Suparmi, Kusumawardani, N., Nambiar, D., Trihono, H., & Hosseinpoor, A. R. (2018). Subnational regional inequality in the public health development index in Indonesia. *Global Health Action*, 11(sup1), 1500133. <https://doi.org/10.1080/16549716.2018.1500133>
- Suryanto, Plummer, V., & Boyle, M. (2017). Healthcare system in Indonesia. *Hospital Topics*, 95(4), 82–89. <https://doi.org/10.1080/00185868.2017.1333806>
- Tiika, B. J., Tang, Z., Azaare, J., Dagadu, J. C., & Otoo, S. N. A. (2024). Evaluating E-Government development among Africa Union member states: An analysis of the impact of E-Government on public administration and governance in Ghana. *Sustainability*, 16(3), 1333. <https://doi.org/10.3390/su16031333>
- Trisnantoro, L., Marthias, T., & Harbianto, D. (2019). Challenges in strengthening primary health care in Indonesia. *Journal of Global Health Science*, 1(2), e15. <https://doi.org/10.35500/jghs.2019.1.e15>
- Wulandari, R. D. (2025). Socioeconomic disparities in primary healthcare utilization in eastern Indonesia. *[Artikel/Jurnal]*.
- Wulandari, R. D., Laksono, A. D., Nantabah, Z. K., Rohmah, N., & Zuardin, Z. (2022). Hospital utilization in Indonesia in 2018: Do urban–rural disparities exist? *BMC Health Services Research*, 22(1), 521. <https://doi.org/10.1186/s12913-022-07896-5>

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AJEMB – American Journal of Economic and Management Business
