ISSN: 2085-675X (Print)
ISSN: 2354-8770 (Electronic)

Jurnal Kefarmasian Indonesia
Available online at https://jkefarind.com/index.php/jki
Original Research Article
JKI

Strategy for Strengthening Pharmacy Services in Primary Health Centers in Indonesia

Nanang Yunarto[1]*, Ida Diana Sari[2], Novi Sulistyaningrum[3], Siti Arda Mauliti[2], Herni Asih Setyorini[2], Nyoman Fitri[2], Arifayu Addiena Kurniatri[2], Esde Dianusana Etieka[4]

[1]STIKES Widya Dharma Husada, South Tangerang, Banten, Indonesia
[2]Center for Health System Resilience Policy, Ministry of Health, Jakarta, Indonesia
[3]National Environmental Health Laboratory, Salatiga, Central Java, Indonesia
[4]Secretariat of the Health Development Policy Agency Ministry of Health, Jakarta, Indonesia

ARTICLE INFO

Article history:
Received 07 July 2026
Revised 12 March 2026
Accepted 11 June 2026
Published online 30 June 2026

*Corresponding author.
E-mail: *nanang.yunarto@wdh.ac.id*

Citation: Yunarto N, Sari ID, Sulistyaningrum N, Mauliti AS, Setyorini HA, Fitri N, Kurniatri AA, Etieka ED. Strategy for Strengthening Pharmacy Services in Primary Health Centers in Indonesia. Strategy for Strengthening Pharmacy Services in Primary Health Centers in Indonesia. Jurnal Kefarmasian Indonesia. 2026:16(1):67-74.

ABSTRACT

Implementation of pharmaceutical service standards in Indonesian primary health centers remains suboptimal despite recent regulatory mandates Government Regulation No. 28/2024 and Ministry of Health Regulation No. 26/2020, with persistent gaps in workforce distribution, clinical competency, facility infrastructure, supervision, and drug management systems. This study aimed to identify root causes of low implementation and to develop prioritized, operational strategies for strengthening pharmacy services in primary health centers across Indonesia. We conducted focus group discussions and direct field observations using the Minister of Health technical guidelines as the assessment framework; participants included provincial and district health office representatives, heads of community health centers, pharmacists, and pharmaceutical technicians across 20 primary health centers in ten provinces representing Indonesia. Findings reveal five interrelated barriers: chronic shortage and maldistribution of pharmacists and vocational pharmacy staff, with >50% of district-level centers lacking pharmacists; inadequate clinical pharmacy competencies and limited continuing professional development, restricting delivery of PIO, counseling, MESO, home pharmacy care, and visit services; insufficient pharmacy infrastructure and equipment (small, combined warehouse-workspaces, lack of dedicated counseling rooms, refrigeration, and monitoring devices); weak, irregular guidance and supervision at district/city level compounded by absent sanction mechanisms; and fragmented, time-consuming e-purchasing and multiple reporting systems that divert pharmacist time from clinical care. The study recommends a prioritized, integrated policy package clear implementing regulations with routine standardized supervision and sanctions, affirmative HR recruitment and incentive schemes, staged infrastructure upgrades, blended certified competency training with clinical mentoring, and integration/simplification of drug management/reporting system to enhance service quality, ensure medicine availability, and safeguard patient safety in primary care.

***Keywords*:** Pharmacy service; Primary health care; Strengthening; Regulation

ISSN: 2085-675X (Print)
ISSN: 2354-8770 (Electronic)

INTRODUCTION

Government Regulation Number 28 of 2024 concerning Implementing Regulations of Law Number 17 of 2023 concerning Health mandates the security of pharmaceutical preparations, medical devices, and household health supplies through the implementation of pharmaceutical service standards.[1] Pharmaceutical services are an integral part of health efforts, playing a vital role in improving the quality of health services for the community, with the aim of identifying, preventing, and resolving drug and patient-related health problems. Over the past decade, the need for pharmaceutical care for patients, prioritizing pharmaceutical practice by pharmacists, has grown stronger.

Pharmaceutical services have undergone changes, from initially focusing solely on medication management to comprehensive services encompassing the management of medical supplies and clinical pharmacy services.[2] The government has established pharmaceutical service standards in every health care facility through Ministerial Regulations and related technical guidelines. The reality on the ground shows that not all pharmacists provide pharmaceutical services according to standards. Current service activities have focused solely on managing medical supplies, while clinical pharmacy services have only been partially implemented in hospitals. Community health centers, clinics, and pharmacies still offer very limited clinical pharmacy services.

The Ministry of Health is striving to improve public services through health transformation, focusing on pillar 1 by increasing the capacity and capability of primary care, and pillar 2 by improving access and quality of secondary care. Pharmaceutical service standards are an effort to standardize services in healthcare facilities, aiming to improve patients' quality of life.[4] To achieve this, integration, regulatory simplification, and optimization of the implementation of pharmaceutical service standards within healthcare delivery are necessary. With the significant responsibility of managing and supervising all pharmaceutical service activities, pharmacists are required to fulfill their job responsibilities based on pharmaceutical service standards.[5] Pharmaceutical service standards are benchmarks used as guidelines for pharmacists in implementing pharmaceutical service practices. Drug management indicators are needed to support drug availability and efficient drug inventory management, while clinical pharmacy service indicators are needed to prevent the occurrence of drug-related problems, which ultimately aims to improve patient safety.[6,7] In Indonesia, the implementation of pharmaceutical service standards is not yet optimal. Assessment of the quality of pharmacy services for a primary health centre must incorporate an assessment of both aspects. Therefore, this study proposed to determine root causes of low implementation and strategy for strengthening pharmacy services in primary health centers in Indonesia.

METHODS

The study method used focus group discussions and direct field observations. The FGD instrument used pharmaceutical service standard guidelines based on Minister of Health Regulation Number 26 of 2020 concerning Amendments to Minister of Health Regulation Number 74 of 2016 concerning Pharmaceutical Service Standards in Primary Health Centers.[8,9] FGD participants included the Health Office, Heads of Community Health Centers, pharmacists, and pharmaceutical technicians at Community Health Centers. Data collection was conducted at 20 Community Health Centers in the provinces of Banten, Yogyakarta Special Region, Riau, Central Sulawesi, West Nusa Tenggara, South Kalimantan, Central Java, West Java, Bali, and Papua.

RESULTS AND DISCUSSION

Problem Identification

Human Resources

The limited human resources (HR) of pharmaceutical personnel, both pharmacists and vocational pharmacy personnel (TVK), in healthcare facilities is a critical issue affecting the quality of healthcare services, particularly in managing health services and clinical pharmacy services. Existing pharmaceutical personnel must handle an excessive workload, potentially

ISSN: 2085-675X (Print)
ISSN: 2354-8770 (Electronic)

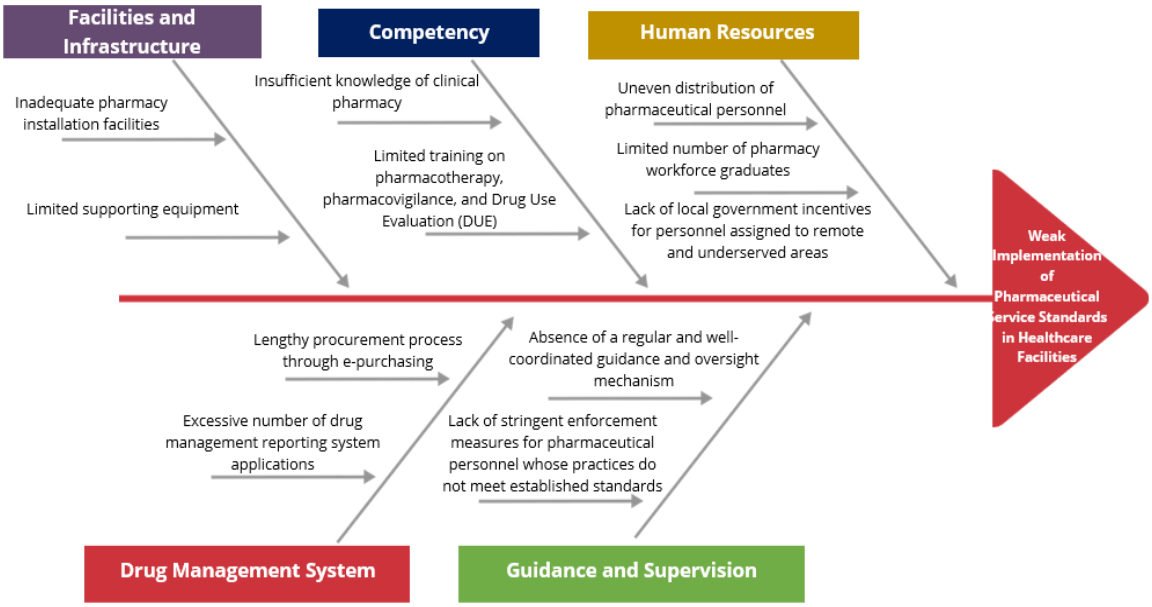

Figure 1. Fishbone diagram weak implementation of pharmaceutical service standards in healthcare facilities

compromising service quality.[10] The imbalance in the distribution and disparity of pharmaceutical personnel is demonstrated by the concentration of many pharmaceutical personnel on the island of Java and in urban areas, particularly provincial capitals. In Sumatra, Kalimantan, Sulawesi, Nusa Tenggara, Maluku, and Papua, the number of pharmaceutical personnel in provincial capitals is sufficient. However, in districts outside provincial capitals, more than 50% of primary health centers lack pharmacists. In fact, in several districts in Eastern Indonesia, all community health centers lack pharmacists and TVKs, resulting in pharmaceutical services being performed by seconded nurses/midwives or contract workers with high school degrees.[11] In pharmacy installations in hospitals, community health centers, and clinics that already have pharmacists, the number of pharmacists does not meet the standard service ratio of 1:50 for outpatients and 1:30 for inpatients.[9]

Another obstacle contributing to the problem is the insufficient number of graduates of professional pharmacist and TVK programs to meet the needs of healthcare services throughout Indonesia. One cause of the shortage of pharmacists in Indonesia is the limited number of pharmacists produced by educational institutions through professional pharmacist study programs. Currently, the number of professional pharmacist study programs (PSPA) only accounts for approximately 22% of the total number of undergraduate pharmacy study programs.[12]

The lack of incentives beyond the base salary in several underdeveloped, border, and island regions (DTPK), as well as areas with difficult transportation access, has resulted in many pharmacist positions being unmet.[13] Local governments have attempted to meet this need by opening CPNS (National Civil Servant Candidate) and PPPK (National Public Service Candidate) positions for healthcare facilities that do not yet have pharmacists and TVKs, but this has been met with low demand and staffing levels.

Competence

A weakness of pharmacists working in the clinical sector is their limited knowledge of clinical pharmacy services. Clinical pharmacy activities include prescription review (administrative, pharmaceutical, and clinical), compounding and dispensing prescriptions, providing drug information (PIO) and documentation, providing counseling and documentation, monitoring drug therapy,

ISSN: 2085-675X (Print)
ISSN: 2354-8770 (Electronic)

home pharmacy care, monitoring side effects (MESO), and visits.[14] Prescription review, compounding, and dispensing are 100% complete, but other activities remain underutilized in daily care.

Competency improvement efforts are also inadequate due to a lack of ongoing training for pharmacy personnel, which can impact the quality of services, both in health care management and clinical pharmacy services.[15] Implementation of PIO and counseling by pharmacists in hospitals and community health centers is limited to specific diseases such as cancer, cardiovascular disease, tuberculosis, and HIV/AIDS. Routine visits are conducted in hospitals, either as a team with other medical personnel or independently. Inpatient visits are still very rare in community health centers, and even then, they are conducted in those with more than one pharmacist. The limited number of visits is due to pharmacists' lack of knowledge in pharmacology and pharmacotherapy, and the medical team's lack of understanding of pharmacists' contribution to patient drug therapy management. Home pharmacy care and MESO activities are very limited. This is due to the pharmacists' limited knowledge and skills, as well as the heavy additional workload, such as the numerous reports that must be prepared, both through applications and manually.[16]

Facilities and Infrastructure

One factor contributing to the suboptimal implementation of pharmaceutical service standards in healthcare facilities is the lack of infrastructure to support pharmacy practice.[17] While hospital pharmacy facilities are quite adequate, other healthcare facilities are still far from ideal. Pharmacies in primary health centers and clinics often have small work areas and are often interconnected with warehouses, which can disrupt workflow, medication storage, and the comfort of pharmacists and patients. In general, many healthcare facilities lack dedicated rooms for prescribing information (PIO) and patient counseling.[18]

Supporting equipment in pharmaceutical facilities is also inadequate, such as storage racks, storage coolers, document cabinets, refrigerators, temperature and humidity monitors. Many healthcare facilities have not yet implemented a pharmaceutical information system. This poses risks to inventory management, drug quality, and stability.[19]

Guidance and Supervision

Based on existing regulations, guidance and supervision of the implementation of pharmaceutical service standards are carried out by the Minister, the head of the provincial health office, and the head of the district/city health office. For district/city-level health facilities, the guidance and supervision function for the implementation of pharmaceutical service standards remains very weak. Limited human resources within the Health Office are a major factor contributing to the ineffectiveness of these guidance and supervision functions.[20] Furthermore, the lack of clear sanctions for pharmacy personnel who do not practice pharmacy according to standards can also be a hindering factor.

The guidance process is not conducted regularly and in a coordinated manner, so improvements in the capacity and capability of healthcare services cannot be measured. This also eliminates efforts to mitigate determinant factors in the field of drugs, follow-up supervision, and there is no follow-up on violations, whether they are discovered or reported.[21]

Drug Management System

In the era of national health insurance, many hospitals and community health centers have managed their finances through regional public service agencies. The drug procurement process is carried out through e-purchasing, which requires a lengthy process and time, thus consuming the time of pharmaceutical staff.[22] During the drug procurement stage, pharmacists submit drug purchase requests based on a verified and approved Drug Requirement Plan (RKO). The pharmacists then submit these requests to the Procurement Officer (PP) through the Commitment Making Officer (PPK). With the PPK's approval, the PP uploads the procurement documents to e-purchasing. This lengthy process can be exacerbated by the frequency with which drugs are initially listed, but some are removed from the list or unavailable at the time of contract signing. This results in pharmacists spending more time on the drug procurement process.

ISSN: 2085-675X (Print)
ISSN: 2354-8770 (Electronic)

Furthermore, regarding the time required from e-purchasing to receiving the drugs at the hospital or community health center, it has been reported that this generally takes 3-6 months. This issue contributes to the suboptimal performance of pharmaceutical staff, particularly pharmacists, in clinical pharmacy services.

Another reason for the low implementation of pharmaceutical service standards in healthcare facilities is that pharmacists are often burdened with the responsibility of reporting on drug management.[23] For example, pharmacists working in community health centers are responsible for making reports on many drug management reporting applications such as SELENA (availability of 40 drug and vaccine indicators), SIMONA (number of PIO services, counseling, ED drug values each month, 1 year ago and 2 years ago, total prescriptions for non-pneumonia ARI, non-specific diarrhea), SIPNAP (narcotics drug reporting), SITB (ordering, receiving, reporting TB drugs), SIHA (ordering, receiving, reporting HIV drugs), SMILE (routine vaccines, BIAS, rabies, covid), SMILE ATM (AIDS, TB, malaria), and e-puskesmas applications related to pharmaceutical services and internal health center regulations. This certainly increases the workload of pharmacists because they have to manage many applications at once, which requires extra time and energy. The direct impact of this control can certainly reduce the performance of pharmaceutical personnel in their main task, namely the implementation of pharmaceutical service standards, especially in the aspect of clinical pharmacy services, especially drug information services, counseling, monitoring of drug side effects, and visits.[24]

Recommenation and Implementation

Priority strategies include (1) strengthening regulations and clear coaching/supervisory mechanisms, including administrative-professional sanctions; (2) increasing the availability of human resources through affirmative action scholarships, DTPK incentives, and allocation of PPPK/CPNS positions; and (3) developing clinical pharmacy competencies through blended learning certified training programs and clinical mentoring. These regulatory and coaching recommendations are also proposed as top priorities in the brief.

Operational implementation steps include: issuing national technical guidelines (SOPs for coaching audits and checklists), piloting the integration of medication management reporting into a single platform (reducing the number of applications), implementing a package of improvements to community health center facilities (PIO/counseling rooms, shelves, coolers, temperature monitors), and implementing training modules and certification in stages. The roadmap is as follows: year 1 (regulations, IT pilot, baseline audit), year 2 (recruitment/incentive scale, training rollout, infrastructure improvements), year 3 (mass evaluation and certification).

The monitoring mechanism must use SMART indicators: % of community health centers with pharmacists, % of certified pharmacists, average time to drug procurement, % of patients served by PIO/counseling, and % of follow-up to audit findings. Key risks (regional budget, resistance to sanctions, scarcity of graduates) are mitigated through a combination of DAK/central government funding, a transition phase with priority development before sanctions, and a scholarship/affinity recruitment scheme. This recommendation is consistent with the analysis and policy options in the policy brief.

CONCLUSION

The main priority to strengthening pharmacy services in primary health centers in Indonesia is to establish clear implementing regulations that require routine guidance and supervision based on standard technical guidelines and strict sanction mechanisms for pharmaceutical practices that do not meet standards; this policy must be complemented by a complementary package in the form of incentive and recruitment schemes (affirmative scholarships) to improve human resource distribution, certified training programs to

ISSN: 2085-675X (Print)
ISSN: 2354-8770 (Electronic)

improve clinical pharmacy competency, improvements to community health center pharmacy installation facilities, and integration and simplification of the drug management/reporting system to reduce administrative burdens this integrated approach is needed to improve the quality of pharmaceutical services in community health centers and ensure the availability, safety, and quality of health supplies for the community.

Conflict of Interest

The authors declare no conflict of interest.

Authors' Declaration

The authors hereby declare that the work presented in this article is original and that any liability for claims relating to the content of this article will be borne by them.

Acknowledgments

The authors are grateful to Health Policy Agency, Ministry of Health, Republic of Indonesia for their encouragement and financial support, which finally led to the completion of this study.

REFERENCES

1. Republic of Indonesia. Government Regulation Number 28 of 2024 concerning Implementing Regulations of Law Number 17 of 2023 concerning Health. Ministry of State Secretariat of the Republic of Indonesia, Jakarta.
2. Mohiuddin AK. The excellence of pharmacy service: Past, present and future. International Journal of Clinical and Developmental Anatomy. 2019;5(2):11. doi: 10.11648/j.ijcda.20190502.12
3. McLaughlin DB, Olson JR, Sharma L. Healthcare operations management. Academic Series; 2022.
4. Ministry of Health. Health Transformation: Creating a Healthy and Superior Indonesian Society. Jakarta: Bureau of Communication and Public Services; 2024.
5. Asamoah D. The role of health services regulation in healthcare delivery. Electr J Med Dent Stud. 2025;14(1). https://doi.org/10.29333/ejmds/16003.
6. Pentrakan A, Srinon R. Assessing inventory management indicators in chain pharmacy stores: An importance–performance analysis. The Eurasia Proceedings of Science Technology Engineering and Mathematics. 2024 Aug 1;28:141-7. https://doi.org/10.55549/epstem.1519401.
7. Kabera JC, Mukanyangezi MF. Influence of inventory management practices on the availability of emergency obstetric drugs in Rwandan public hospitals: a case of Rwanda Southern Province. BMC Health Services Research. 2024 Jan 4;24(1):14. https://doi.org/10.1186/s12913-023-10459-x.
8. Ministry of Health. Minister of Health Regulation Number 26 of 2020 concerning Amendments to Minister of Health Regulation Number 74 of 2016 concerning Pharmaceutical Service Standards in Primary Health Centers, Jakarta; 2020.
9. Kemenkes RI. Petunjuk teknis standar pelayanan kefarmasian di puskesmas. Kementerian Kesehatan Republik Indonesia. 2019:1-99.
10. Putra AM, Sandi DA, Sari OM, Intannia D, Rizki MI, Rahmatullah SW, Lingga HN. Gambaran karakteristik apoteker di Puskesmas wilayah barat, tengah, dan timur Indonesia. Borneo Journal of Pharmascientech. 2024 Oct 21;8(2):149-56. https://doi.org/10.51817/bjp.v8i2.545.
11. Sagita VA, Sukmadryani Y. Peran Tenaga Teknis Kefarmasian dalam Pelayanan Kefarmasian di Sejumlah Apotek, Klinik dan Puskesmas di Kota Balikpapan sesuai Peraturan Menteri Kesehatan No. 73 dan No. 74

ISSN: 2085-675X (Print)
ISSN: 2354-8770 (Electronic)

Tahun 2016. PROSIDING SAFANA. 2024 Dec 31;1(1):9-14.
12. Suhendar DA. Analisis Kesenjangan Implementasi Kurikulum Program Studi Sarjana Farmasi dan Pendidikan Profesi Apoteker Terhadap Standar Kompetensi Apoteker Indonesia. Doctoral dissertation, Universitas Gadjah Mada; 2025.
13. Akbar R. Strategi Kebijakan Optimalisasi Jumlah Tenaga Kesehatan Sebagai Upaya Peningkatan Kualitas Pelayanan Kesehatan Di Kabupaten Ogan Ilir. Integrative Perspectives of Social and Science Journal. 2025 Jul 31;2(03 Juli):5648-58.
14. Magfira N, & Jasril J. Implementation Of Pharmaceutical Service Standards At The South Wara Community Health Center, Palopo City Based On Health Ministerial Regulation No. 74 Of 2016. In International Conference of Business, Education, Health, and Scien-Tech. 2024; 1(1): 1620-32.
15. Nugroho A. Pharmacy and Pharmacist; Interchangeably Misunderstood Role. Journal of Asian-african Focus in Health. 2023; 1(1): 14-24. https://doi.org/10.71435/595677
16. Gjone H, Burns G, Teasdale T, & Hattingh HL. Exploring pharmacists' perspectives on preparing discharge medicine lists: A qualitative study. Exploratory Research in Clinical and Social Pharmacy. 2023; 9: 100225. https://doi.org/10.1016/j.rcsop. 2023.100225.
17. Ayenew W, Anagaw YK, Limenh LW, Simegn W, Bizuneh GK, Bitew T, ... & Asmamaw G. Readiness of and barriers for community pharmacy professionals in providing and implementing vaccination services. BMC Health Services Research. 2024; 24(1): 867. https://doi.org/10.1186/s12913-024-11349-6.
18. Desai R. Optimizing pharmacy operations: Strategies for efficiency and quality care. International Journal of Research and Innovations in Pharmacy Practice. 2024; 1(1): 1-10.
19. Keerthi AM, Ramapriya S, Kashyap SB, Gupta PK, & Rekha BS.. Pharmaceutical management information systems: A sustainable computing paradigm in the pharmaceutical industry and public health management. In Sustainable and Energy Efficient Computing Paradigms for Society. 2020; 33-51.
20. World Health Organization. Quality assurance of pharmaceuticals: a compendium of guidelines and related materials, Volume 1. Good practices and related regulatory guidance. World Health Organization, Geneva; ; 2024.
21. Sormin RN, Manurung A, & Siringoringo MJB. Analyzing the Effectiveness of Internal Control Systems in Managing Pharmaceutical Inventories at Advent Hospital Medan, Indonesia. Golden Ratio of Data in Summary. 2025; 5(3): 660-7. https://doi.org/10.52970/grdis.v5i3. 1584.
22. Syamsul D, Amirah A, & Zikri Z. Evaluation of Drug Procurement with the E-Phurchasing System on the Availability of Drugs at the Pharmacy Installation of the Central Aceh Regency Health Office. Journal of Asian Multicultural Research for Medical and Health Science Study. 2021; 2(4), 37-45. https://doi.org/10.47616/ jamrmhss.v2i4.204.
23. Owens CT, & Baergen R. Pharmacy practice in high-volume community settings: barriers and ethical responsibilities. Pharmacy. 2021; 9(2): 74. https://doi.org/10.3390/pharmacy9 020074.
24. Titianingtyas RA, & Nugraheni AY. Evaluation of the Quality of Pharmaceutical Services Based on Minimum Service Standards at Pandanarang Boyolali Regional General Hospital in 2023. Journal of Herbal, Clinical and Pharmaceutical

ISSN: 2085-675X (Print)
ISSN: 2354-8770 (Electronic)

Science (HERCLIPS),. 2024; 5(2): 108-15. https://doi.org 10.30587/herclips.v5i02.7351.