

The Rise of Digital PHMDPS: An In-Depth Study of Medication Delivery Innovations in Indonesian Hospitals

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ABSTRACT

The adoption of medication delivery services by hospitals in Indonesia reflects a significant upward trend in the transformation of the national healthcare landscape. This development is largely driven by the increasing demand for patient convenience and equitable access to essential medicines, alongside the rapid advancement of digital health technologies and the disruption of traditional healthcare systems, particularly during the COVID-19 pandemic. To explore this phenomenon, this study employed a systematic literature review method, analyzing diverse sources comprising government reports, hospital websites, official social media posts, online news articles, and prior research. The objective was to synthesize findings on how Indonesian hospitals—both public and private—have implemented and digitalized their Patient Home Medication Delivery Programs (PHMDPs). Key findings reveal a growing prevalence of PHMDPs, supported by various delivery models, ranging from internal logistics systems to partnerships with third-party couriers and telemedicine platforms. Digitalization emerges as a central enabler, facilitating seamless integration of e-prescriptions, automated logistics, and mobile health applications. Despite the growing adoption, the regulatory framework remains in flux, and hospitals face several challenges, including logistical complexity, compliance issues, and cost sustainability. This study contributes a comprehensive overview of PHMDPs in Indonesia, highlighting best practices and offering insights for scalable, patient-centered innovations in digital pharmaceutical services.

Keywords: *Patient Home Medication Delivery Programs, Phmdps, Digital Health, Telemedicine, Healthcare Access, Indonesia, Systematic Literature Review.*

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INTRODUCTION

The global move toward patient-centered, home-based healthcare models is gaining momentum, and Indonesia is no exception. This archipelago faces unique geographic challenges in providing fair and equitable healthcare, underscoring the critical need to digitize medical healthcare services. With a population spread across thousands of islands and varied terrains, traditional medication distribution methods often fall short of meeting patients' needs, especially in remote and underserved regions.

Medication delivery services have become a crucial solution for closing these gaps, providing greater convenience, improved medication adherence, and overall access to healthcare. Still, their scalability and efficiency depend on adopting digital technologies. By integrating digital platforms—such as telemedicine apps and automated delivery systems—hospitals can achieve smoother logistics, real-time tracking, and personalized patient care. Digitalization also addresses key challenges such as reducing wait times, streamlining pharmacy workflows, and enhancing patient monitoring.

In recent years, Indonesia's healthcare system has undergone a major change, driven by the rapid growth of Patient Home Medication Delivery Programs (PHMDPs). This growth has been fueled by several factors, including the challenges posed by COVID-19 pandemic, technological advancements, and evolving patient expectations for more accessible and convenient healthcare. Both public and private hospitals have responded by adopting various medication delivery methods, often integrating these services with telemedicine platforms and digital health apps. This shift toward digitalization is not only transforming healthcare access but also establishing a solid foundation for sustainable, patient-centered healthcare solutions.

An expanding ecosystem of digital infrastructure further advances the momentum behind PHMDPs in Indonesia and is increasingly adopted by hospitals of all types, both private and public. Major private hospital groups like Siloam Hospitals Group, Rumah Sakit Mitra Keluarga Group, and Primaya Hospital are leading the way in offering such innovative services (Sari, 2024). Additionally, large public hospitals, including vertical hospitals under the Ministry of Health such as RSUP Fatmawati, provide services that improve patient accessibility (Sari, 2024). This indicates that both private and public entities, especially larger ones with sufficient resources, recognize the value of offering medication delivery as part of their efforts to enhance the quality and reach of their services.

Private hospitals may have more flexibility to adopt new technologies and services to attract and keep patients in a competitive market. In contrast, public hospitals, especially those under the Ministry of Health's mandate, might focus on improving public health access and efficiency, particularly for vulnerable groups or people in remote areas. Some hospitals rely on their own delivery services, such as the "GATOT SEHAT" program at RSUD Wonosari (Susilawati, 2023). This model allows the hospital to exercise greater control over the delivery process and better align with existing pharmacy workflows. However, many hospitals also partner with third-party courier companies to handle delivery logistics. Common courier companies include Go-Jek (Sodiqin, 2018), JNE (Chaidir, 2023; Dinar W, 2023), Lalamove (Lalamove Indonesia, 2022a, 2022b), POS Indonesia (Suliaty, 2023), and Grab (Anisa, 2020). These partnerships help hospitals leverage existing logistical infrastructure and the broader reach of courier services.

Furthermore, a growing trend is the integration of medication delivery services with telemedicine platforms and online pharmacies. Several platforms mentioned in the research material include MySiloam (Aswan, 2019), AlteaCare (Azka, 2022), SmartRSCM (Biro Komunikasi dan Pelayanan Publik Kementerian Kesehatan RI, 2022), Halodoc (Nabila, 2018), Good Doctor (Gooddoctor.co.id, 2025), LinkSehat (Primaya Hospital, 2025),

Medikay (Fabian, 2021), KirimObat (Razak, 2023), and Aido Health (Lalamove Indonesia, 2022, 2022). This integration offers a more seamless experience for patients who have already consulted online, streamlining the process from diagnosis to medication and delivery. Each delivery model has potential advantages and disadvantages in terms of cost, efficiency, and control over the delivery process. Partnerships are a popular choice as they reduce the need for direct investment in logistics infrastructure. At the same time, telemedicine integration indicates a move towards a more holistic digital healthcare experience.

Given this significant shift, a clear research question arises: how have hospitals in Indonesia implemented and digitized their PHMDPs, and what are the implications for benefits, challenges, and regulatory compliance? This study aims to explore the scope and depth of PHMDPs in Indonesia by identifying different implementation models, examining the role of digital integration, and analyzing how regulatory frameworks influence service delivery. The goal is to provide a comprehensive understanding of the current landscape, highlight best practices, and guide future strategies for scaling digitalized medication delivery services in a sustainable, patient-centered way.

METHOD

This study employed a systematic literature review to analyze and synthesize key findings from academic and institutional sources on the implementation and digitalization of Patient Home Medication Delivery Programs (PHMDPs) in Indonesia. The main objective was to explore different delivery models, determine the role of digital integration, and assess the implications for accessibility, efficiency, and regulatory compliance in healthcare services.

The data for this study came from secondary sources selected for their relevance and credibility. These included research reports, official government websites (both federal and local), hospital websites, hospital social media posts, and online news articles from national and regional media outlets. All sources were evaluated for relevance and credibility and cited in the paper as part of the literature review.

A targeted literature search was carried out using a combination of relevant keywords in both English and Indonesian, such as *"Patient Home Medication Delivery,"* *"PHMDP,"* *"pengantaran obat ke rumah,"* *"telemedicine,"* *"digitalisasi layanan farmasi,"* and *"akses layanan kesehatan."* A total of 22 hospitals were selected based on their alignment with the literature and their contextual relevance to healthcare delivery innovations in Indonesia. Data analysis was conducted through critical reading and thematic synthesis of the selected sources. The process involved (1) identifying key findings related to the design and implementation of PHMDPs in various hospital types, (2) examining how digital integration, partnerships, and mobile applications support service delivery, (3) analyzing the regulatory frameworks that affect hospital management of logistics, patient privacy, and pharmaceutical standards, (4) mapping the connections between budget availability, infrastructure readiness, and healthcare access outcomes, and (5) presenting

the results in thematic clusters to answer the research questions and provide actionable insights.

FINDING AND DISCUSSION

RESEARCH FINDING

Detailed Analysis of Hospital Medication Delivery Programs

Siloam Hospitals Group launched a "Rawat Jalan Online" (Online Outpatient) service during the Large-Scale Social Restrictions (PSBB) period in response to pandemic-related restrictions (Kuswandi, 2020). They also collaborate with Aido Health for medication delivery, with API integration to improve logistics and coverage in Jabodetabek 6 and 7. Additionally, Siloam Hospitals uses Grab delivery services for patients living more than 10 kilometers from hospitals offering telemedicine, demonstrating a hybrid approach that combines their platform with external logistics (Anisa, 2020). Their "Outpatient Digital Express Lane" provides features like digital registration and home medication delivery, resulting in significant time savings for patients and attracting many users (Adhiyasa, 2025). The MySiloam app is also available for teleconsultations and other services, serving as a central platform for various patient interactions (Aswan, 2019). Siloam Hospitals demonstrates a strong commitment to digital transformation and patient convenience through technology and partnerships. Their focus on measuring the impact of digital initiatives (e.g., time saved) reflects a data-driven approach to improving services. Collaboration with Aido Health and the use of Grab to extend their reach highlights a strategic effort to address logistical challenges. Siloam likely recognizes the increasing demand for remote healthcare services and is proactively building a comprehensive digital ecosystem. By partnering with specialized platforms like Aido Health and established logistics providers such as Grab, they can deliver a seamless experience from online consultation to medication delivery, meeting a wide range of patient needs and locations.

Rumah Sakit Mitra Keluarga Group offers a "Layanan Antar Obat MIKAMeD" (MIKAMeD Medication Delivery Service) (RS Mitra Keluarga, 2021), although research indicates its limited validity until December 2021 and delivery costs based on distance, suggesting a direct-to-patient delivery model. They are also partnered with Garda Medika for express discharge and medication delivery options (Nurganingsih, 2024), highlighting the benefits for insured patients of skipping pharmacy queues and receiving medication at their preferred address. Their AlteaCare app provides digital healthcare services, including medication purchase and delivery (Azka, 2022), positioning it as an integrated healthcare platform accessible via mobile devices. Mitra Keluarga seems to focus on offering value-added services, especially for insured patients, by integrating medication delivery into their express discharge process. The AlteaCare app indicates a broader strategy to deliver a range of digital health services beyond just medication delivery. Although the research suggests that the MIKAMeD service might have been a promotional offer, it shows their willingness to provide direct delivery to patients. Mitra Keluarga likely aims to improve the patient experience and streamline processes, especially for insured patients seeking greater convenience. By partnering with insurance providers and developing their own digital

platform, they can serve different patient segments and provide a more integrated healthcare experience.

Primaya Hospital offers online consultations through LinkSehat, including a detailed prescription process with potential delivery ^{within 15 days}, enabling patients to track their prescriptions online—this improves transparency and convenience. They also provide an Express Discharge feature in partnership with Garda Medika, which includes medication delivery options (Asuransi Astra, 2024), similar to Mitra Keluarga, showing a trend among hospital groups to collaborate with insurance providers for more efficient services. The Primaya mobile app (Primaya Hospital, 2025c) is available, though its features related to medication delivery are not clearly detailed in the research material; it likely supports appointment management and access to health information. By leveraging existing telemedicine platforms like LinkSehat, Primaya Hospital extends its reach and offers online consultations with the potential for medication delivery. Their focus on reducing medication wait times at pharmacies (Primaya Hospital, 2025b) indicates an efficient internal system capable of supporting timely delivery when integrated with online services. Primaya's strategy includes providing direct online consultation services via LinkSehat and partnering with insurance companies to streamline discharge and medication delivery processes.

Rumah Sakit Pondok Indah (RSPI) Group outlines their telemedicine services and drive-thru medication pick-up or home delivery options for specific areas (RS Pondok Indah, 2025b), showing a controlled approach to home delivery with logistical constraints. They also highlight the availability of 24-hour prescription services and home delivery for outpatient prescriptions in certain locations (RS Pondok Indah, 2025), emphasizing location-based access and the need to contact the pharmacy for detailed coverage information. Their integrated e-prescription system (RS Pondok Indah, 2025a) likely enhances the efficiency and accuracy of their pharmacy services, supporting both in-person and delivery options. Their RSPI Mobile application (Rumah Sakit Pondok Indah, 2025) focuses on appointment management and access to the patient portal, indicating potential future integration with medication delivery services. RS Pondok Indah, known for high-quality care, offers medication delivery on a more limited scale, possibly to maintain service quality and manage logistical challenges. Their strong digital infrastructure, especially the e-prescription system, provides a solid foundation for expanding delivery services in the future. RSPI's cautious stance on widespread medication delivery likely reflects a commitment to ensuring the quality and safety of medication handling and transportation. By offering services for specific locations and integrating them with their established digital systems, they can effectively manage the service while still providing convenience to their patients.

RSUP Fatmawati describes its medication delivery service as convenient and queue-free (34), highlighting a patient-focused approach to improving service. They also mention collaborating with Medikay for medication delivery services (Fabian, 2021), indicating a partnership to manage delivery logistics. Additionally, they note that social media platforms such as YouTube and Instagram can provide more information about coverage areas (Humas RSUP Fatmawati, 2023), emphasizing the importance of checking

official channels for details. As a major public referral hospital, RSUP Fatmawati offers medication delivery, emphasizing the growing need for accessibility in public healthcare. Their partnership with a specialized delivery service like Medikay allows them to concentrate on their core medical duties while ensuring efficient medication delivery. By working with Medikay, RSUP Fatmawati can avoid the logistical challenges of establishing and managing their own delivery fleet. This enables them to extend their pharmacy services to patients at home, increasing convenience and potentially easing congestion at the hospital pharmacy.

RSUD dr. Soedono in East Java Province presents a successful and sustainable PHMDP initiative with the SIAPA (Siap Antar Obat Tanpa Biaya) program. Launched in 2020, SIAPA addresses major issues in outpatient pharmaceutical services—especially long wait times and patient fatigue—by offering free medication delivery directly to patients' homes. The service was developed based on patient complaints and uses digital features like an online registration system, automated delivery tracking, and standardized packaging protocols to ensure privacy and drug quality. Over four years, SIAPA achieved notable results: patient use increased by 472% from 2020 to 2023, average delivery time stayed around 3 hours, customer satisfaction exceeded 91%, there were no reports of unauthorized charges, and complaints about pharmacy wait times dropped significantly after its launch (Mustafidah, 2024). Importantly, this innovation benefited not only those enrolled but also reduced wait times for walk-in patients by decreasing congestion in the pharmacy—showing that well-managed PHMDPs can indirectly enhance overall service quality. The program's success and potential for replication have gained regional recognition—RSUD dr. Saiful Anwar in Malang adopted SIAPA during a 2021 benchmarking visit.

RSUD Kota Yogyakarta reviews their "Otewe Masjo" (Obat Teko Dewe Rumah Sakit Jogja - Medication Comes to Your Home, Yogyakarta Hospital) service for medication delivery (Portal Berita Pemerintah Kota Yogyakarta, 2023), highlighting its goal to reduce wait times and increase patient satisfaction. They mention its features, such as a mobile app, a flat delivery fee across DIY (Rp 10,000), and same-day delivery (Achadiyah, 2023), demonstrating a user-friendly and cost-effective service model. RSUD Kota Yogyakarta created its own app-based delivery system with a flat fee, demonstrating a commitment to accessible, affordable healthcare solutions for the local community. The same-day delivery adds further convenience for patients. By developing their own digital infrastructure and delivery system, RSUD Kota Yogyakarta can customize services to meet the specific needs of its patients. The flat-fee approach likely aims to keep the service affordable for many patients, encouraging better medication adherence and overall health outcomes.

Other hospitals with medication delivery services include: RSUD dr. Mohamad Soewandhie Surabaya, which offers a "Pelayanan Motor Obat" (Motorcycle Medication Service) (RSUD dr. Mohamad Soewandhie, 2021), focusing on reducing queues and providing free delivery in designated areas. RSU Islam Cawas also provides a medication delivery service (Humas Pemasaran RSU Islam Cawas, 2022) to decrease outpatient prescription wait times. RSUD Balaraja partners with JNE for a medication delivery program

(RSUD Balaraja, 2025), highlighting collaboration with a national courier service for broader coverage. RSUD H. Boejasin Pelaihari runs the "Obatku" (My Medicine) program with POS Indonesia (RSUD Hadji Boejasin, 2024), demonstrating a partnership with the national postal service. RSUD Wangaya Kota Denpasar offers a "SI BOS" (Ready Boss) service (RSUD Wangaya, 2024), providing free medication delivery to patients' homes. RSUD Ratu Zalecha Martapura has an innovation called "SAHABAT RAZA" (RAZA's Friend) (Rumah Sakit Umum Daerah Ratu Zalecha Martapura, 2024), aiming to improve patient convenience by eliminating the need to queue for medication. RSUD Dr. H. Koesnadi Bondowoso collaborates with PT. POS Indonesia (Radar Jember, 2024; RSUD dr. H. Koesnadi, 2024), emphasizing community benefits through this partnership. RSUD Puri Husada Tembilahan features "LAYAR BERAKIT" (Assembled Sail) for senior patients (RSUD Puri Husada, 2024), focusing on specific patient groups' needs. RSUD Gambiran Kediri employs an e-prescription system that supports medication delivery (Direktur RSUD Gambiran Kota Kediri, 2024). RSUD Dr. Soedirman Kebumen partners with the Post Office (RSUD dr. Soedirman Kebumen, 2021) to reduce pharmacy queues. RSU Mitra Paramedika offers a "Pak Anto" (Mr. Anto) service with JNE (Chaidir, 2023; Danar W, 2023), providing a dedicated medication delivery service based on distance rates. RSMS Purwokerto delivers integrated medication services (Sumarwoto, 2022). RS Setia Mitra South Jakarta provides a medication delivery service (Rumah Sakit Setia Mitra, 2025), with contact details for inquiries. RSUD Wonosari runs the "GATOT SEHAT" program (Susilawati, 2023a), aiming to reduce crowds and wait times, particularly for patients with chronic illnesses. RSUD Syarifah Ambami Rato Ebu Bangkalan offers the "TAROMAH" service, including information about specific areas (Kristiani, 2022). The widespread adoption of medication delivery programs, especially by regional and public hospitals working with national logistics providers, signals a significant trend toward improving healthcare access across Indonesia. A common theme is reducing pharmacy queues, which is a primary motivation for offering these services. Customizing services for specific patient groups, such as geriatrics, shows increasing recognition of diverse needs. Public hospitals, often serving large and varied catchment areas, are increasingly valuing the extension of pharmacy services beyond hospital walls. Partnering with established logistics networks helps overcome infrastructure challenges and delivers medications conveniently, ultimately enhancing health outcomes and patient satisfaction. The various names of these programs—"SOBAT," "GATOT SEHAT," "Obatku," "SI BOS," "SAHABAT RAZA," "TAROMAH," "Pak Anto," and "LAYAR BERAKIT"—highlight the local and innovative approaches different hospitals employ.

Table of Selected Indonesian Hospitals Offering Medication Delivery Services

No.	Hospital Name	Location (Province/City)	Hospital Type (Public/Private/Group)	Delivery Mechanism	Coverage Area	Additional Notes	Research Material ID
1	Siloam Hospitals Group	National	Private (Group)	Telemedicine Integration (MySiloam), Courier Partnerships (Grab, Aido Health)	Jabodetabek, Surabaya, Yogyakarta, Denpasar, Kupang, Medan, Ambon, etc.	Online Outpatient, Outpatient Digital Express Lane	(Sari, 2024)
2	Rumah Sakit Mitra Keluarga Group	Jabodetabek, Central Java, East Java	Private (Group)	MIKAMeD Medication Delivery Service, Garda Medika Integration (Express Discharge), AlteaCare Application	Bekasi, Cibubur, Cikarang, Tangerang, Tegal, Surabaya, etc.	MIKAMeD (until Dec 2021), Garda Medika for insured patients, AlteaCare for medication purchase & delivery	(Sari, 2024)
3	Primaya Hospital	National	Private (Group)	Telemedicine Integration (LinkSehat), Garda Medika Integration (Express Discharge)	Jakarta, Bekasi, Sukabumi, Makassar, Semarang, etc.	Online consultation via LinkSehat with potential medication delivery, Garda Medika for insured patients	(Sari, 2024)
4	RS Pondok Indah Group	Jakarta, South Tangerang	Private (Group)	Telemedicine Service with home delivery (specific locations), 24-hour Prescription with home delivery (outpatients, specific locations)	South Jakarta, West Jakarta, South Tangerang (specific locations)	Drive-thru medication pick-up also available, integrated e-prescription system	(Sari, 2024)
5	RSUP Fatmawati	South Jakarta	Public	Medication Delivery Service, Partnership with Medikay	Not specified	Wait at home, further info on hospital's social media	(Fadila, 2022)
6	RSUD dr. Soedono	Madiun, East Java	Public	Medication Delivery Service	Madiun Raya (max 25 km)	Free of charge	(Mustafidah, 2024)

No.	Hospital Name	Location (Province/City)	Hospital Type (Public/Private/Group)	Delivery Mechanism	Coverage Area	Additional Notes	Research Material ID
7	RSUD Kota Yogyakarta	Yogyakarta	Public	"Otewe Masjo" Application	Yogyakarta City, DIY	Flat rate Rp 10,000, same-day delivery	(Susilawati, 2023b)
8	RSUD dr. Mohamad Soewandhie	Surabaya	Public	Pelayanan Motor Obat (Motorcycle Medication Service)	Specific areas of Surabaya	Free of charge	(RSUD dr. Mohamad Soewandhie, 2021)
9	RSU Islam Cawas	Klaten	Private	Medication Delivery Service	Not specified	For outpatients	(Humas Pemasaran RSU Islam Cawas, 2022)
10	RSUD Balaraja	Tangerang	Public	Partnership with JNE	Not specified	Patients don't need to queue, JNE delivers according to hospital schedule	(RSUD Balaraja, 2025)
11	RSUD H. Boejasin Pelaihari	Tanah Laut, South Kalimantan	Public	Obat Antar Kerumah (Obatku) Program	Patient's home address	Collaboration with PT. Pos Indonesia	(RSUD Hadji Boejasin, 2024)
12	RSUD Wangaya Kota Denpasar	Denpasar	Public	"SI BOS"	Denpasar City	Ready to deliver medication to home, free of charge	(RSUD Wangaya, 2024)
13	RSUD Ratu Zalecha Martapura	Martapura, South Kalimantan	Public	SAHABAT RAZA Innovation	Not specified	Makes it easier for patients to get medication without queuing	(Rumah Sakit Umum Daerah Ratu Zalecha Martapura, 2024)
14	RSUD Dr. H. Koesnadi Bondowoso	Bondowoso	Public	Partnership with PT. POS Indonesia	Entire Bondowoso Regency and outside areas	LAOK ROMA, affordable fee	(Radar Jember, 2024; RSUD dr. H.

No.	Hospital Name	Location (Province/City)	Hospital Type (Public/Private/Group)	Delivery Mechanism	Coverage Area	Additional Notes	Research Material ID
							Koesnadi, 2024)
15	RSUD Puri Husada Tembilahan	Indragiri Hilir	Public	LAYAR BERAKIT Innovation	Not specified	Medication delivery service for geriatrics	(RSUD Puri Husada, 2024)
16	RSUD Gambiran Kediri	Kediri	Public	e-Prescription system with potential delivery	Not specified		(Direktur RSUD Gambiran Kota Kediri, 2024)
17	RSUD Dr. Soedirman Kebumen	Kebumen	Public	Medication Delivery Service	Not specified	Collaboration with Post Office, patients pay shipping fee	(RSUD dr. Soedirman Kebumen, 2021)
18	RSU Mitra Paramedika	Sleman, Yogyakarta	Private	"Pak Anto"	Sleman (Yogyakarta)	Collaboration with JNE, promo rate for the first 10 km	(Chaidir, 2023; Danar W, 2023)
19	RSMS Purwokerto	Purwokerto	Public	Integrated Patient Medication Delivery Service	Not specified		(Sumarwoto, 2022)
20	RS Setia Mitra	South Jakarta	Private	Medication Delivery Service	Not specified	Patients can go home immediately after consultation	(Rumah Sakit Setia Mitra, 2025)
21	RSUD Wonosari	Gunungkidul, Yogyakarta	Public	GATOT SEHAT Program	Not specified (initially max 3km)	Initially for chronic disease patients, socialization expanded	(Susilawati, 2023a)
22	RSUD Syarifah Ambami Rato Ebu Bangkalan	Bangkalan	Public	TAROMAH Innovation	Specified areas	Reduce waiting time, increase access	(Kristiani, 2022)

DISCUSSION

The regulatory landscape for hospital medication delivery in Indonesia is still evolving, relying on existing regulations for pharmaceutical practices and drug distribution, and possibly influenced by the increasing use of telemedicine. While specific regulations solely governing hospital-based medication delivery may be limited, hospitals must follow general standards for pharmacy services and the handling of different categories of medications. The growing emphasis on patient safety and quality of care in healthcare regulations highlights the need for hospitals to establish strong, compliant medication delivery processes.

Discussion of relevant regulations governing pharmaceutical services in hospitals, such as: (1) Regulation of the Minister of Health (PMK) No. 72 of 2016 concerning Standards for Pharmaceutical Services in Hospitals (Menteri Kesehatan Republik Indonesia, 2016), which outlines standards for pharmacy services, including the dispensing and distribution of medicines, and emphasizes patient safety. (2) Regulation of the Minister of Health (PMK) No. 5 of 2023 concerning Narcotics, Psychotropics, and Pharmaceutical Precursors (Menteri Kesehatan Republik Indonesia, 2023), which regulates the handling and distribution of controlled substances and may impact the delivery of certain medications. (3) Regulation of the National Agency of Drug and Food Control Number 24 of 2021 concerning the Supervision of the Management of Medicines, Drug Ingredients, Narcotics, Psychotropics, and Pharmaceutical Precursors in Pharmaceutical Service Facilities (KEPALA BADAN PENGAWAS OBAT DAN MAKANAN REPUBLIK INDONESIA, n.d.), which provides guidelines on the procurement, storage, and distribution of medicines in healthcare facilities. (4) Potential implications of telemedicine regulations (PMK No. 20 of 2019) on medication delivery (Sanarta, 2023), which establish a framework for remote healthcare services and may influence the legal aspects of delivering medications prescribed via telemedicine.

This discussion underscores the importance of complying with standards for dispensing, packaging, and transportation of medicines, ensuring their quality and integrity until they reach the patient. Research materials (KEPALA BADAN PENGAWAS OBAT DAN MAKANAN REPUBLIK INDONESIA, 2024) on Good Manufacturing Practices (GMP) and Guidelines for Pharmaceutical Services indirectly highlight the need to maintain drug quality throughout the supply chain, including delivery.

Hospitals offering medication delivery services must ensure compliance with all relevant regulations governing the dispensing, packaging, labeling, and transportation of medicines. This includes adhering to standards for maintaining the quality and safety of medications, especially for controlled substances. As telemedicine becomes more integrated with medication delivery, hospitals also need to navigate the legal frameworks governing remote healthcare services to ensure compliance and patient safety.

Benefits and Challenges of Hospital Medication Delivery Services

A. Benefits for Patients:

1. Increased convenience and reduction in travel time and costs, especially for patients with chronic conditions or those living far from the hospital (Arianti K, 2022).
2. Elimination of waiting times at the pharmacy counter, allowing patients to return home and rest sooner (Susilawati, 2023a).
3. Improved adherence to medication regimens due to ease of access and potential for integrated reminders or information (Susilawati, 2023a).
4. Enhanced privacy and comfort, particularly for patients with sensitive health conditions who may prefer to receive their medications at home (Fitrah, 2024).
5. Access to medications for patients in remote areas or with mobility issues, expanding the reach of hospital pharmacy services (Arianti K, 2022).
6. Potential for integrated information and counseling during delivery, ensuring patients understand how to use their medications correctly (Susilawati, 2023a).
7. *Understanding:* The benefits for patients primarily revolve around convenience, accessibility, and improved adherence. Medication delivery services address key barriers to healthcare access, such as geographical distance, mobility limitations, and time constraints. The potential for integrated counseling during delivery can also improve patient outcomes.
8. *Chain of thought:* By offering medication delivery, hospitals can significantly enhance the patient experience, making it easier for individuals to manage their health and adhere to prescribed treatments. This is particularly important for patients with chronic conditions who require regular medication refills.

B. Benefits for Hospitals:

1. Increased patient satisfaction and loyalty, leading to improved reputation and patient retention (Susilawati, 2023a).
2. Potential expansion of service reach and attraction of more patients from wider geographical areas, increasing market share (Suliati, 2023).
3. Reduction in congestion in pharmacy waiting areas, improving workflow and patient flow within the hospital (Susilawati, 2023a).
4. Opportunities for innovation and enhancing the hospital's reputation as a patient-centric, technologically advanced healthcare provider (Sodiqin, 2018).
5. Potential for increased revenue through delivery fees or bundled services, although some hospitals offer it for free (Sodiqin, 2018).
6. *Understanding:* By embracing innovation and focusing on patient convenience, hospitals can enhance their reputation and attract a broader patient base. Medication delivery services can be a key differentiator, especially in a competitive healthcare

market.

7. *Chain of thought:* Offering medication delivery can contribute to a hospital's image as modern and patient-focused. This can lead to increased patient satisfaction and positive word-of-mouth referrals, ultimately benefiting the hospital's growth and sustainability.

C. Challenges for Hospitals:

1. Logistical complexities in managing delivery services, including staffing, transportation, and tracking, require efficient systems and coordination (Susilawati, 2023b).
2. Costs associated with delivery, especially if offered for free or at a subsidized rate, require careful financial planning and resource allocation (Suudi, 2017).
3. Ensuring the security and integrity of medications during transit, maintaining proper storage conditions, and preventing tampering (Suliati, 2023).
4. Maintaining patient privacy and confidentiality, especially when sharing patient information with third-party delivery services, (Fitrah, 2024).
5. Compliance with regulations related to medication dispensing and delivery requires adherence to legal and professional standards (Sanarta, 2023).
6. Potential for errors in dispensing or delivery, requiring robust quality control measures and verification processes (RSUD Dr. Soedirman Kebumen, 2021).
7. Need for effective communication and coordination between the hospital pharmacy, delivery personnel, and patients to ensure timely and accurate delivery and address any issues (Istibsaroh & Susilo, 2023).
8. Potential challenges related to patient acceptance and preference for traditional pharmacy visits (Susilawati, 2023a).
9. *Understanding:* Implementing a successful medication delivery service involves navigating a complex web of logistical, operational, and regulatory challenges. Hospitals need to carefully consider these factors and invest in appropriate infrastructure, training, and technology to ensure the safety, efficiency, and compliance of their delivery programs.
10. *Chain of thought:* Although medication delivery offers many benefits, hospitals need to be ready to handle the challenges that come with it. This calls for a carefully planned strategy covering every part of the process, from dispensing medication to final delivery at the patient's home, while following all relevant regulations and focusing on patient safety and satisfaction.

CONCLUSION

The landscape of hospital-delivered medication services in Indonesia shows a rising trend and a variety of approaches being adopted. This increase is driven by the need to improve patient access and convenience, as well as by technological advancements and evolving societal behaviors. Both large private hospital groups and public hospitals in different regions are increasingly offering these services, either through developing internal systems or partnering with third parties.

The benefits of these services for patients are substantial, including greater convenience, lower waiting times and travel expenses, and the potential for better medication adherence. For hospitals, medication delivery services can improve patient satisfaction and loyalty, expand service accessibility, and decrease congestion in pharmacy areas. However, certain challenges must be tackled to ensure the successful implementation and sustainability of these services, such as logistical complexities, operational costs, medication security and integrity, and adherence to relevant regulations. Based on this analysis, the following are recommendations for hospitals aiming to implement or enhance medication delivery services.

1. Consider strategic partnerships with established courier service providers or online pharmacy platforms to leverage their infrastructure and expertise, and weigh the pros and cons of each based on the hospital's specific needs and resources.
2. Develop user-friendly digital platforms (mobile apps, web portals) for ordering and tracking deliveries to improve patient experience and streamline the process.
3. Ensure clear communication and information sharing with patients about the delivery process, costs, estimated delivery times, and specific instructions for medication use and storage.
4. Establish strong protocols for medication security, temperature control (if necessary for specific medications), and patient privacy during delivery, ensuring compliance with all relevant regulations and guidelines.
5. Implement quality control measures and verification processes to minimize the risk of dispensing or delivery errors, prioritizing patient safety.
6. Invest in training for pharmacy staff and delivery personnel on the specific procedures and requirements for medication delivery services.
7. Regularly collect patient feedback through surveys or other methods to continuously improve service delivery and address issues.
8. Explore integrating medication delivery with other home healthcare services or telemedicine platforms to offer a more comprehensive, convenient patient experience.

The potential for growth and innovation in this field is significant, including expanding reach into rural areas through collaborations with national postal services, using drone delivery for remote locations⁶³, or integrating AI to optimize delivery logistics and scheduling. By addressing the challenges and capitalizing on these opportunities, hospitals

in Indonesia can continue to improve the accessibility and quality of healthcare services for the entire population.

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