

# DRUG MANAGEMENT OBSTACLES IN HEALTH FACILITIES DURING THE COVID-19 PANDEMIC: A LITERATURE REVIEW

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**Abstract.** Drug management is important, so proper coordination must be carried out. The existence of COVID-19 pandemic has caused a buildup of stock at the District Pharmacy Installation due to the increased need for certain types of drugs and the reduced number of patient visits. This is estimated to be one of the obstacles affecting the management and availability of drugs. This literature review uses a qualitative descriptive approach by searching articles through Google Scholar and PubMed. There are 11 articles used on the topic, where the article review results are presented in tabular form. Obstacles arose in drug management during the Covid-19 pandemic, namely in health facilities during the pandemic, namely the decrease in the number of patients, scarcity of medication, and accumulation of stock of medicine.

**Keywords:** [Drug Management, Logistics, Covid-19, Health Facilities, Obstacles]

## INTRODUCTION

Coronavirus Disease 2019 (COVID-19) was first discovered in Wuhan, China. The virus managed to infect hundreds of millions of people worldwide in a very short time (Wildayanti et al., 2023). As a result of the spread of the virus infection, in mid-March 2020 a global pandemic was declared (Hamdani and Indrawati, 2022). This incident had a major impact on the health sector with the emergence of information about limited available care for virus treatment (Cahyanti & Jamaludin, 2021) and sanitation restrictions which are not only related to projected drug purchases according to hospital catalogs but also new acquisitions to meet the need for drugs. (Socal et al., 2021), this has an impact on health facilities.

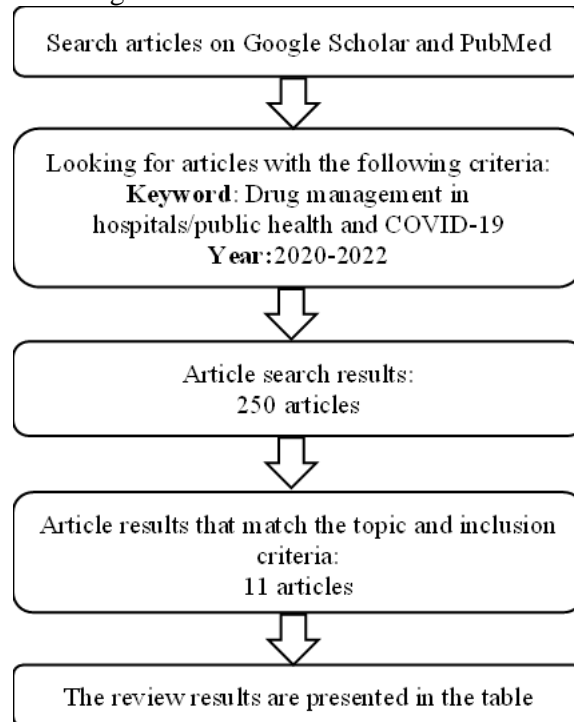
Health efforts in the pharmaceutical sector are carried out by carrying out pharmaceutical services (Pratiwi et al., 2023). These services include drug management, in which drugs are an important element in various healthcare efforts. This is because most health services use drugs. Procurement of these drugs requires quite a large amount of money, so drugs are one of the causes of budget leakage and must be managed properly (Nurlaela et al., 2022).

Drug management in health facilities has several stages which include planning, procurement, storage, distribution, use, elimination, evaluation, and monitoring stages (Abdulkadir, 2022; Pratitis, 2022). Each stage is interrelated and must be well coordinated so that it can function optimally (Shafa, 2021). Drug management is an important aspect, so it must be coordinated properly (Apriliani, 2018). It is intended that the availability of drugs can be guaranteed and there is no shortage of drugs. Inefficient drug management will hurt operational costs. Good drug management is very necessary to prevent losses caused by errors in drug management (Bakri, 2021).

The availability of drugs in service units has a major influence on the quality of health services. This shows that good drug management is needed to ensure the availability and affordability of drugs in an effective, efficient, and rational manner (Mangindara, 2012), but the COVID-19 pandemic causing stock buildup at the District Pharmacy Installation. The pile of drugs is also caused by the increased need for certain types of drugs and the reduced number of patient visits due to policies implemented during a pandemic such as limiting activities outside the home (Sabarudin, 2021). This is expected to affect the management and availability of drugs. Based on the description above, the implementation of drug management during the COVID-19 pandemic found many obstacles. Therefore, this study aims to determine the obstacles to drug management in health facilities.

## METHODS

This research is a literature review research with a qualitative descriptive approach, where in this research a search was carried out for articles published in 2020 to 2022. Searching for these articles was through Google Scholar and PubMed, where a total of 253 articles were found. The articles obtained have been selected according to the inclusion criteria and exclusion criteria. Inclusion criteria in this literature review include research articles on drug management in health facilities carried out during the COVID-19 pandemic which was complemented by constraints during the pandemic, while exclusion criteria included articles that only discussed some parts of drug management or not as a whole and articles that the research was conducted before December 2019. Based on the article selection process, 9 articles were obtained that met the inclusion criteria and topics in the literature review. The results obtained in the review process are presented in tabular form. The following is a schematic of the literature review stages:



**Figure 1.** Schematic of Literature Review Stages

## RESULTS AND DISCUSSION

A health facility not only experienced obstacles during the Covid-19 pandemic but several obstacles have also often been experienced by health facilities (Mushoddaq, 2022). However, this is different from the extraordinary events that occurred during the pandemic. The Covid-19 pandemic is a period that greatly impacts the management of health facilities, one of which is drug management. There are lots of management failures in health facilities that cause losses (Campos et al., 2021), and this can be prevented by evaluating and identifying the constraints or causative factors (Zulfa, 2018). Therefore, many researchers carry out evaluations as prevention efforts and determine strategies for overcoming problems that occur. According to most evaluations published in an article, shows that there are obstacles found in the management phase of drug management in health facilities. Each Health facility has its obstacles depending on the conditions at that time. This is in line with Mushoddiq's research (2022) which states that each hospital has different obstacles depending on the conditions at the hospital. Various obstacles that occurred in health facilities during a pandemic can be seen in Table 1. This is in line with Mushoddiq's research (2022) which states that each hospital has different obstacles depending on the conditions at the hospital. Various obstacles that occurred in health facilities during a pandemic can be seen in Table 1. This is in line with Mushoddiq's research (2022) which states that each hospital has different obstacles depending on the conditions at the hospital. Various obstacles that occurred in health facilities during a pandemic can be seen in Table 1.

**Table 1.** Obstacles to drug management

Title	Researcher and Year of Publication	Research methods	Obstacles to Drug Management
Evaluasi Pengelolaan Obat Di Puskesmas Salaman 1 Kabupaten Magelang Dalam Masa Pandemi Covid-19 Tahun 2020	Endaryanti Wulandari; Aris Widayati (2021)	Evaluative descriptive research with a qualitative approach	Changes in patterns of disease visits, reduced number of patient visits, increased need for medicines and medical supplies. There is a discrepancy in the types and quantities of medicines and medical supplies obtained from donations, causing stock buildup. Goods are scarce and rising prices beyond the predetermined shopping index. the decrease in inpatients and outpatients at the public health during the pandemic caused some medicines to no longer be used resulting in dead stock and stagnant stock.
Analisis Manajemen Pengelolaan Obat Pada Masa Pandemi Di Puskesmas Sering Kecamatan Tembung	Fitriani Pramita Gurning, Sarah Fadhila Siregar, Ummi Rahmah Siregar, Ridha Rusmayanti, Fitria Nurhasanah (2021)	Descriptive research with a qualitative approach	The number of patient visits has decreased dramatically, with only 300 patients coming to the public health each week, which was 1,300 before the pandemic. The amount of medicine proposed by public health did not match when it came to public health because the funds proposed had exceeded capitation. There was a shortage of medicines during the pandemic because very often the medicines that came to the public health did not match the number of requests, so patients had to buy from outside. Pharmacy and warehouse space is not up to standard. During this pandemic, the number of patients decreased drastically.
Analisis Logistik Obat Farmasi Karangmalang Semarang	Novisa Hamdani, Fitri Indrawati (2022)	Qualitative research with a descriptive approach through in-depth interview techniques (in-depth interviews)	The availability of drugs in public health did not match the patient's demand during the Covid-19 pandemic so the demand for drugs was not realized 100% and caused drug events to stagnate and stock out. During the Covid pandemic, the waiting time for drug procurement was long and vacancies often occurred. Many medicines come with an expiration date, this is possible because the management system did not work optimally during the Covid pandemic. There are many expired drugs due to not being prescribed during the Covid-19 pandemic.
Analisis Sediaan Farmasi Pandemi Covid-19 Di Puskesmas Kecamatan Rawamerta	Mela Amanda, Dedy Frianto, Surya Amal, Maulana Yusuf Alkandahri, Himyatul Hidayah (2021)	Quantitative research with a phenomenological approach utilizes observation and in-depth interviews or in-depth interviews	The inaccuracy of drug planning is caused by several factors, including the number of drugs planned at the RKO and the number of drugs received from the Regency or City Pharmacy Installation, which is not balanced because the procurement process at the Health Office experiences several obstacles resulting in fulfillment. This affects the demand for medicines in public health which is not 100% fulfilled. In addition, changes in disease patterns during the Covid-19 pandemic, affected drug supplies for Public health.
Analysis of Planning and Drug Procurement at Kragan II Public Health Center during The COVID-19 Pandemic	Fitrotul Maulidiyyah, Bambang Budi R (2022)	This research was descriptive qualitative research	The response from drug distributors during the Covid-19 pandemic was slow and the drugs distributed did not match those ordered by pharmacists. This affects the planning and procurement of medicines in Public health.
Analisis Persediaan Obat Teling Atas	Marline Persada Baybo, Widya Astuty Lolo, Meilani Jayanti (2022)	Descriptive research using quantitative and qualitative methods with retrospective data collection	Lack of employee discipline in recording stock cards in real-time can be an obstacle in inventory control and makes it difficult for officers to carry out stock-taking. This causes drug supplies to be uncontrolled and sometimes the expiration date of the drug is not detected, resulting in empty or excess drugs. Based on information from the Public health, there had been a drug stockout at the Teling Atas Public Health due to the Covid-19 outbreak and vacancies from distributors so some of the needs for medicines could not be fulfilled.

Dampak Pandemi Covid-19 Terhadap Pengelolaan Dan Tingkat Ketersediaan Obat Di Puskesmas Puuwatu Kota Kendari	Sabarudin, Sunandar Ihsan, Henny Kasmawati, Rifa'atul Mahmudah, Eka Pebriana (2021)	Descriptive-evaluative research using retrospective data	Changes in disease patterns affect changes in the value of the level of drug availability, restrictions on outdoor activities implemented during the COVID-19 pandemic cause changes in people's lifestyles such as decreased participation in physical activity and changes in eating patterns that affect the level of availability of drugs in Community Health Centers, where some items come out faster and some items come out slower or not at all. Drug scarcity also occurred during the pandemic, this was caused by a decrease in the value of insufficient stock items during this pandemic allegedly due to changes in disease patterns which caused shifts in treatment patterns, resulting in changes in the type and number of items that came out and affected inventory in warehouses.
Analisis Sistem Pengelolaan Perbekalan Farmasi di RS Darurat Penanganan Covid-19 Wisma Atlet Kemayoran Tahun 2020	Djarmiko Huda R, Sumijatun, Ahdun Trigono (2021)	Qualitative descriptive research using structured interview methods, observation, and document review	The input of drug requests is always not fixed from the doctor because the doctors who work at the Wisma Atlet Hospital take turns according to the assignment period and there is no planning system pattern. At the beginning of the establishment of the RSDC, there was no Covid-19 therapy protocol and epidemiological data were still minimal, and there was still a lack of administrative support needs. Procurement at the RSDC Wisma Atlet experienced problems with the relatively long waiting time. There are restrictions on the movement of pharmacy staff in providing services and a service system for Covid-19 patients who use the quarantine principle and use the covid protocol.
Manajemen Pengelolaan Obat Diinstalasi Farmasi Rumah Sakit Umum Daerah Dr. Zubir Mahmud Kabupaten Aceh Timur Tahun 2021	Husna Hariani, Arifah Devi Fitriani, Mayang Sari (2022)	Qualitative research with a phenomenological approach	There was a vacancy during the pandemic so the availability of drugs in hospitals was not able to meet the needs, where doctors' prescriptions could not be fulfilled properly so patients and doctors often complained. The existence of a pattern of disease change causes a mismatch of available drugs with needs, this causes suboptimal service, which means patients do not get drugs when they are needed so treatment goals are not achieved. During the Covid-19 pandemic that occurred from 2020 to 2021, the impact was very bad, because there was a drastic reduction in BPJS patients and the general public, so the hospital budget was also reduced which hurt hospitals, especially in the availability of medicines.
Hospital Pharmacy Service: Facing the Logistics of Medicines Procurement	Carmen Palomar Fernandez, Ana Alvarez-Diaz (2020)	The research was carried out by coordinating among pharmacists and carrying out analyses related to estimated needs, storage feasibility studies, and global analysis of the logistics process	There were shortages and difficulties in procuring drugs during the pandemic, which affected the availability of drugs in hospitals. Therefore, there is a need for a storage optimization strategy that utilizes multidisciplinary networks and focuses on better logistics management.
End-of-Use and End-of-life medicine-insight from pharmaceutical care process into waste medicines management	Elaine Aparecida Regiani de Campos, Carla Schwengber ten Caten, Istefani Carisio de Paula (2021)	This research is qualitative research with interviews that lasted for 10 minutes. Conducted in 10 pharmacies and 140 health centers	There was a shortage and stockpiling of medicines, this was because during the pandemic the community or patients could pick up their medicines at 140 health units and pharmacies located in the city. In addition, several medicines are only given to professional pharmacists, where the pharmacists only work in ten pharmacies located in the city so not all of them get the drug stock. The bureaucratic bidding that occurs is also one of the causes of drug vacancies and accumulation, thus increasing the number of expired drugs or causing the waste accumulation.

During the pandemic, many patients did not come for treatment, so the number of patient visits decreased. This affects drug storage, where the reduced number of patients results in a large number of drugs that have accumulated and expired. This is in line with the research by Prasetyo (2021) and Wibowo (2021), which stated that during the pandemic there was a decrease in the number of patient visits and caused a buildup of drug stocks in the Warehouse had an impact on drug procurement for the next period. Drug scarcity also occurred during a pandemic, where the incident was caused by a decrease in the value of drug stock items during the pandemic which was suspected to be due to a change in disease pattern, causing a shift in the pattern of treatment. This is supported by the research of Hariani et al., (2022) which states that changes in disease patterns cause a mismatch of available drugs with needs so that treatment goals are not achieved. In addition, the implementation of policies during a pandemic aimed at minimizing the spread of it restricted the movement of officers so that it hampered patient services.

Based on the journal articles analyzed, it shows that studies are using quantitative and qualitative designs. Research with a qualitative design carried out observations, interviews, and document reviews. The results of the analysis show that during the COVID-19 pandemic, the proposed annual medicine plan was inconsistent or missed the plan. Drug planning is not appropriate in 2020 due to various obstacles that arose during the COVID-19 pandemic, so the plans that have been prepared do not reflect the need for drugs or health improvements in public health in 2020. Health facilities during the COVID-19 pandemic not only obtained medicines and health supplies through the dropping mechanism, submitting them to the Health Office, and purchases themselves but receive from other sources, namely donations. The existence of donations is very helpful to meet the unexpected increase in the need for medicines and health supplies.

The COVID-19 pandemic has had a huge impact on drug management, where many obstacles have been created. The COVID-19 pandemic situation greatly affected the drug management process which resulted in dead stock and stagnant stock. The existence of this pandemic has increased the list of expired drugs and almost expired drugs. This is due to the prescribing that is done with less attention to treatment guidelines or formulary. This is in line with Sulistyowati's research (2020), which states that doctors who practice public health do not always prescribe available drugs. This statement is also supported by Hamdani & Indrawati's research (2022) which states that in public health, there are many expired medicines due to not being prescribed during the co-19 pandemic.

Drug planning at the time of the emergence of the COVID-19 disease hampered all activities in public health. Many drugs planned for 2019 have accumulated and expired so that in 2021 they cannot be used anymore. Drug planning during the COVID-19 pandemic has not run optimally. This is possibly due to budget cuts during the Covid-19 pandemic and changes in disease patterns. According to Maulidiyyah & Budi R's research (2022), problems in the planning process were caused by cuts in the drug ordering budget. Apart from that, the disbursement of funds during the pandemic was also hampered, so it was not possible to order medicines on time. The methods used in drug procurement are consumption and epidemiology methods.

## CONCLUSION

Obstacles that arose in the process of drug management in health facilities during a pandemic were the decreased number of patients, the occurrence of shortages, the scarcity of drugs, and the accumulation of drug stocks due to changes in disease patterns. This has an impact on several aspects and causes losses, so special attention and the right strategy are needed to overcome the problem.

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