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by Rochana Ruliyandari Analysis Of Logistic Management

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ANALYSIS OF LOGISTIC MANAGEMENT OF DRUG STORAGE IN PHARMACIES

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Abstract

One of the stages in managing the logistics of drugs is storage. Drug storage is an activity that involves storing and maintaining drugs with the goals of preserving drug quality, preventing irresponsible use of drugs, and making it easier to search for and control drugs. This study analyzes the logistics management of drug storage in pharmacies in 2022. This research is an analytic descriptive study with a qualitative approach. Data was gathered through direct interviews with informants, including pharmacists and pharmacist assistants. The findings revealed some differences and similarities between pharmacies based on 12 criteria for drug storage. The criteria for storing these drugs include drugs stored in a special warehouse, drugs stored not mixed with other equipment, medicines placed on shelves/pallets indirectly on the floor, medications kept in doses from delivery, treatments separated by dosage form, pills arranged alphabetically, medicines are stored according to drug class (medicine for general, moderate, severe diseases), medicines that require cold temperatures stored in a refrigerator or cold chain, narcotics, and psychotropics are stored in a special cupboard and locked, storage of drugs uses the FIFO and FEFO systems, what is done for drugs that are near their expiration date, and what is done for drugs that have expired. All of the samples, which include thirty-six pharmacies, have stored medications on shelves or pallets and indirectly on the floor, have stored medicines by the dosage forms, and have stored drugs using the FIFO and FEF systems.

Keywords: *Logistics Management, Medicine Storage, Pharmacy*

INTRODUCTION

The management of logistics involves monetary goals that are intended to be accomplished at the lowest possible expense. Expenses will be challenging to control if the pharmacy does not deliver proper logistics. If logistics are managed effectively, it is easier to achieve success, which may result in decreased customer satisfaction.

Pharmaceutical services based on Minister of Health Regulation No. 73 of 2016 have changed from drug-oriented to patient-oriented, aiming to advance patients' quality of life (Ministry of Health RI, 2016). Quality services can reduce the risk of errors in medication and meet the needs and demands of the community so that the community can share a good impression of the pharmacy, especially in terms of alertness in service, availability of needed drugs, and maintaining drug quality (Susilawati et al., 2022).

Drug storage is an activity that involves storing and maintaining drugs with the goals of preserving drug quality, preventing irresponsible use of drugs, and making it easier to search for and control drugs.

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The activities associated with storage involve three aspects: the arrangement of the room, the preparation of the drug, and the monitoring of the drug's physical quality. (Asyikin, 2018). The stages of drug storage are included in the logistics management process. Drug storage is storing and maintaining drugs by placing them in a location that is regarded as safe from the risk of theft, is capable of supporting the quality of drugs, and is classified based on the form of raw materials to ensure product quality. It is done to carry out the activity of drug storage. One of the factors that will determine the quality of the drugs that are distributed is the system of proper and adequate storage (IAI, 2015).

A pharmacy can be described as a store that buys and sells medical supplies in addition to compounding and reselling medications based on a prescription from a physician. It is regulated by the Minister of Health of the Republic of Indonesia Number 35 of 2014 concerning Pharmaceutical Service Standards in Pharmacies as to what constitutes an effective drug storage system in pharmacies. This document can be found here. This regulation states that the storage system is carried out by taking into account the dosage form and drug therapy class and arranged alphabetically; drug dispensing uses the First Expire First Out (FEFO) and First In First Out (FIFO) systems.

The Ministry of Health of the Republic of Indonesia defines storage as an activity that involves storing and protecting pharmaceutical preparations obtained by placing them in a protected place. It helps to prevent improper collection and ensures that the quality of pharmaceutical preparations can be maintained. This storage aims, among other things, to maintain the quality of pharmaceutical preparations, avoid improper use and make it easy to find and monitor them.

The potential for drugs to become easily damaged due to improper and inefficient storage and the inability to detect expired drugs will negatively impact pharmacies and patients. As a result, to determine the storage system, it is necessary to decide on and align it with the actual situation to ensure that drug services are provided effectively and efficiently (San, Batara, and Alwi, 2020).

Based on these problems, the researcher is interested in conducting a logistic management analysis of how drugs are stored in pharmacies.

METHOD

This research is a descriptively analytical one that takes a qualitative approach. This investigation was conducted in many Yogyakarta, Kendal, and Tangerang region dispensaries. The gathering of data took place during March and April 2022. The researchers conducted the interviews directly with the informants, including pharmacists and pharmacist assistants.

Qualitative data were obtained by conducting interviews with informants, which included observation. A questionnaire will serve as a guide for the information gathering that will take place during the interview that the researcher will conduct. The pharmacy's drug storage system serves as this study's

population. The sample for this study also serves as the drug storage system in the pharmacy and includes an examination of the spatial arrangements and the drug quality. After that comes the sampling, which is carried out through purposive sampling, The data were analyzed using the content analysis method.

RESEARCH RESULT

Characteristics of Informants

This study's informants were pharmacists or pharmacist assistants working full-time shifts at pharmacies located in and around Kendal, Tangerang, and Yogyakarta. There were 16 pharmacies in and around Yogyakarta, 10 in and around Kendal, and 10 in and around Tangerang. There were a total of 36 people, including both males and females, who participated as informants in this study. The following is a table of the analysis results of the data obtained during the study.

Criteria	Kendal		Tangerang		Yogyakarta	
	Yes	No	Yes	No	Yes	No
Medication stored in Special Warehouse	8	2	6	4	15	1
Medication Stored No Mixed with Other Equipment	9	1	7	3	15	1
Drugs Placed on Storage Racks or Pallets No Direct Floor	10	0	10	0	16	0
Permanently Stored Drugs in Box from Delivery	7	3	8	2	11	5
Medicines are separated by form preparation	10	0	10	0	16	0
Medication Arranged By Alphabetical	10	0	7	3	15	1
DrugStored According to Drug Class (General/ Moderate/Severe)	5	5	8	2	12	4
Drugs Requiring Cold Temperatures Stored in Refrigerator/Chold Chains	10	0	9	1	15	1
Narcotics and Psychotropics Stored in a Special Cabinet and Locked	5	5	5	5	13	3
Drug Storage Using the System FIFO and FEFO	10	0	10	0	16	0
Treatment of Drugs that are Approaching Expired Time	10	0	10	0	16	0
Drug Treatment which has expired	10	0	10	0	16	0
Total	104	16	100	20	176	16

According to the information from the table, several medications qualify for the "special storage" category. Out of ten pharmacies in Jakarta, eight keep them in a designated area, while the remaining two

keep them alongside other medications. In Tangerang, however, six pharmacies keep them by drug criteria, while the remaining four keep them alongside other medicines.

Drug Storage Criteria:

1. Drugs Stored in Special Warehouse

   Drug and Food Control Agency Regulation Number 24 of 2021 concerning storage of medicines in pharmacies around Kendal which are stored in special warehouses totaling 8 Kendal pharmacies, 6 in the Tangerang area, and 15 pharmacies in Yogyakarta, while there are 2 pharmacies in Kendal not stored in special warehouses because they have not the availability of special warehouses for storing drugs and drug storage areas united with shops. It is by the following research results: "*In a special cupboard because there is no warehouse*" (Yuliana, 31, 30/03/2022). "*The storage area is attached to the store*" (Rafma, 32, 30/03/2022)

   Meanwhile, drug storage in pharmacies around Tangerang which are stored in special warehouses totaling 6 pharmacies, has adequate warehouses to store drugs, while 4 pharmacies are not stored in special warehouses. Furthermore, drug storage in pharmacies around Yogyakarta, which are stored in special warehouses, total 15 pharmacies and meet warehouse criteria. In contrast, 1 pharmacy is not stored in a special warehouse due to the unavailability of drug warehouses.

2. Drugs Stored, Not Mixed with Other Equipment

   There are 9 pharmacies storing medicines in pharmacies around Kendal that do not mix with equipment other than drugs, while 1 pharmacy stores medicines combined with other equipment. Meanwhile, drug storage in pharmacies around Tangerang which did not mix with equipment other than drugs, amounted to 7 pharmacies, while 3 pharmacies stored medicine combined with other equipment. There are 15 pharmacies storing medicines in several pharmacies in the Yogyakarta area, which do not mix with equipment other than medicines, while 1 pharmacy stores medicines combined with other equipment, namely medical devices.

3. Medicines are placed on racks or pallets for indirect storage on the floor

   Drug storage in pharmacies around Kendal and Tangerang is placed on storage racks/pallets of 10 pharmacies each. Then, drug storage in pharmacies around Yogyakarta is placed on storage racks/pallets totaling 16 pharmacies.

4. Drugs Stored in Boxes from Delivery

   Drug storage in pharmacies around Kendal is kept in shipping boxes are 7 pharmacies. In comparison, pharmacy storage is temporarily stored in boxes from shipments are 3 pharmacies because some medicines are not kept in containers from delivery. It is by the following research results: *"Not all medicines are stored in boxes from shipment"* (Fitriyah, 25 Years, 30/03/2022).

   Meanwhile, drug storage in pharmacies around Tangerang is kept in shipping boxes are 8

pharmacies. In comparison, pharmacies whose storage is not supported in boxes from shipments are 2 pharmacies because they are directly arranged at the drug storage area.

It is by the following research results: *"Arranged immediately"* (Rio, 32 Years old, 05/04/2022). Eleven pharmacies in the Yogyakarta area keep their drugs in boxes from shipments permanently. In comparison, there are only five pharmacies whose storage is temporary and whose drugs are kept in containers. It is because several drugs are not supported in the delivery boxes but are kept directly on medicine shelves.

It is by the following research results: "*Sometimes in the box, sometimes not*" (Anonymous, -Yr, 21/03/2022). *"Directly arranged on the shelf"* (Anggraheni, 25 Years, 23/03/2022)

5. Drugs Separated Based on Dosage Form

   Drug storage in pharmacies around Kendal, Tangerang, and Yogyakarta is stored and placed separately based on the dosage form.

6. Drugs Arranged Alphabetically

   Drug storage in pharmacies around Kendal arranged in alphabetical order amounted to 10 pharmacies, while in pharmacies around Tangerang put alphabetically, there were 7 pharmacies, while 3 pharmacies whose stores are not arranged alphabetically. Furthermore, 15 pharmacies store medicines in pharmacies around Yogyakarta in alphabetical order, while there is 1 pharmacy that does not keep them alphabetically.

7. Drugs Stored According to Drug Class (General/Moderate/Severe Medicines)

   Drug storage in pharmacies around Kendal is stored according to drug class, both drug class 5 pharmacies for general, moderate, or severe diseases and 5 pharmacies whose storage does not match the drug class. It is because drugs are stored only based on the dosage form and not based on the type of disease. It is by the following research results: "*Stored according to the dosage form, not according to the disease class*" (Mukhibbatus, 33 Years, 30/03/2022)

   There are 8 pharmacies storing drugs in pharmacies around Tangerang according to drug class, both drugs for general, moderate, or severe diseases, while 2 pharmacies for medicines that are not stored according to the drug class.

   Furthermore, drug storage in pharmacies around Yogyakarta is stored according to drug class; drugs for general, moderate, or severe diseases, adjusted to their respective doses, are in 12 pharmacies, while drugs whose storage is not according to drug class are in 4. It is because the drug is only stored alphabetically.

   It is by the following research results: *"Alphabet"* (Anggrahenni, 21 Years, 23/03/2022)

8. Drugs Requiring Cold Temperatures Stored in the Refrigerator/Chold Chain

   There are 10 pharmacies storing medicines that require cold temperatures in pharmacies around

Kendal, stored in Refrigerators/Chold Chains. Meanwhile, in pharmacies around Tangerang, there are 9 pharmacies stored in Refrigerators/Cold Chains. Moreover, there is 1 pharmacy that is not stored in a Refrigerator/Chold Chain.

Furthermore, for drug storage that requires cold temperatures in pharmacies around Yogyakarta, there are 15 pharmacies stored in the Refrigerator/Chold Chain, while there are 1 pharmacy that is not stored in Refrigerator/Chold Chain.

9. Narcotics and Psychotropics Kept in Special Cabinets and Locked

Storage of Narcotics and Psychotropic drugs in pharmacies around Kendal which are stored in unique and locked cabinets, totals 5 pharmacies, and 5 pharmacies do not reserve and lock in amazing cabinets for Narcotics and Psychotropic drugs because the pharmacies are still new, so they do not (not yet) sell drugs Narcotics and Psychotropics types and some pharmacies do not have Narcotics and Psychotropics drug preparations.

It is by the following research results: "*Not yet (not) selling narcotic and psychotropic drugs because the pharmacy is still newly built*" (Yuliana, 31 Years, 30/03/2022). *"Does not have narcotic and psychotropic preparations"* (Mukhibbatus, 33 Years, 30/03/2022)

Storage of Narcotics and Psychotropics drugs in pharmacies around Tangerang which are stored in extraordinary and locked cabinets is 5, and 5 pharmacies do not keep them. They are not locked in Narcotics and Psychotropics type medicine cabinets because these pharmacies cannot provide Narcotics and Psychotropics type drugs.

It is by the following research results: *"No longer allowed"* (Rio, 32 Years old, 05/04/2022)

Furthermore, the storage of Narcotics and Psychotropic drugs in pharmacies around Yogyakarta which are stored in extraordinary and locked cabinets, totals 13 pharmacies, and 3 pharmacies do not reserve and lock remarkable cabinets for these types of drugs because they do not provide Narcotics and Psychotropic drugs.

It is by the following research results: *"No narcotics and psycho to"* (Murtyk, 28 Years, 21/03/2022)

10. Drug Storage Using FIFO and FEFO Systems

Drug storage using the FIFO and FEFO systems in pharmacies around Kendal and Tangerang totaled 10 pharmacies each, and in the vicinity of Yogyakarta, there were 16 pharmacies.

11. Treatment of Drugs that are Approaching Expired Period

Drugs nearing their expiry date in pharmacies around Kendal are recorded in a unique book, separated from the drug storage area such as a window to another place, returned (returned to the seller), and sold in advance (sold quickly).

It is by the following research results: *"Recorded in the special book of drugs that are nearing*

expiration" (Yuliana, 31 Years, 30/03/2022). *"Taken from the storefront and moved to another place"* (Mukhibbatus, 33 Years, 30/03/2022). *"Diretured or sold first"* (Ratma, 32 yrs, 30/03/2022)

While drugs that are nearing their expiry date at pharmacies around Tangerang are collected for destruction, separated from the drug storage area to another place, sold in advance (sold quickly), and burned.

It is by the following research results: "*Separated and recorded schedule for destruction*" (Anonymous, - Th, 05/04/2022). *"Separated, sold quickly/prioritized"* (Anonymous, - Th, 05/04/2022). *"Burned"* (Sutrisno, 24 Years, 05/04/2022)

Furthermore, drugs nearing their expiry date in pharmacies around Yogyakarta are collected, labeled (marked), and returned (returned to the seller) to the PBF distributor. If it is still 8 months old, an offer is made to be sold to the patient (with the patient's consent), issued in advance (sold quickly), and separated by dosage form.

It is per the following research results: "*A sign is placed in front, and when it is going to be sold, it is informed to the patient*" (Aulia, 24 Years, 22/03/2022). "*For ED ± 3 months before, return to PBF*" (Efy, 35 Years, 21/03/2022). "*If the ED is still 8 months old, it can be offered to the patient and given an explanation (max 3 months before the ED*" (Murtyk, 28 Years, 21/03/2022). "Expend first" (Jihan, 20 Years, 21/03/2022). *"Separated based on dosage forms"* (Widhi, 24 Years, 21/03/2022)

12. Treatment of Expired Drugs

Drugs that have expired in pharmacies around Kendal are treated as destroyed (for small quantities of drugs), collected to be submitted to the relevant agency (for large amounts of drugs), and stored in special boxes; data collection is carried out, stored in a special cupboard to await the time of destruction, and in return (returned to the seller).

It is by the following research results: "*If the medicine is a little destroyed by itself and if there is a lot of medicine, it is collected to be handed over to the relevant agency*" *(Yuliana, 31 Years, 30/03/2022)* "*Stored in a special box of ED medicines and records of their preparations*" *(Mukhibbatus, 33 Years, 30 /03/2022) "Kept in a special cupboard awaiting destruction"* (Wien, 38 Years, 30/03/2022)

Meanwhile, drugs that have expired in pharmacies around Tangerang are subject to treatment such as being destroyed (for drugs that cannot be returned), stored in drug storage such as a special shelf, returned (returned to the seller), separated, reported to the Health Service, discarded, put in a special cupboard, and burned.

It is by the following research results: *"Destroyed if it cannot be returned"* (Anonymous, - Th, 05/04/2022). *"Thrown away or put in a special cupboard"* (Anonymous, - Th, 05/04/2022) "Burned" (Sutrisno, 24 Years, 05/04/2022) "Report to Health Office" (Rio, 32 Years, 05/04/ 2022)

Furthermore, drugs that have expired in pharmacies around Yogyakarta are treated as destroyed using a blender to be handed over to the nearest health center, taken to the Health Office (types of Narcotics and Psychotropic drugs) to be destroyed; data collection is carried out to be separated, returned to PBF, dissolved in a particular container until the time of destruction, destroyed and a BAP report is made, collected for disposal (removed from packaging after being destroyed).

It is by the following research results: "*It was crushed/blended and then handed over to the nearest health center that has a MoU. Drugs and psychotropic drugs are brought to the Health Office to be destroyed*" (Efy, 35 Years, 21/03/2022). *"Returned to PBF"* (Widhi, 24 Years, 21/03/2022). *"Separated and destroyed"* (Benning, 23 Years, 21/03/2022) "Destroyed and made a BAP report" (Widhi, 24 Years, 21/03/2022)

DISCUSSION

When drugs are received from distributors, they must be stored securely to prevent theft or other physical disturbance that could compromise their quality. (Muntasir, 2019). Based on the observations and interviews, this study found that drug storage in each pharmacy has differences and similarities based on the drug storage criteria. The following is an explanation based on the requirements for storing the medication.

1. Drugs Stored in Special Warehouse Warehouse is a place

   Temporary stop of an item before the goods are flowed and are helpful to bring the goods closer to the user so that the demand for goods is guaranteed and the security of availability is guaranteed (Seno, 2018). Therefore, in meeting the demand for drugs, pharmacies need warehouses. The warehouse must be unique because it is feared it could damage the quality of the drugs stored (Muntasir, 2019).

   Based on the research results, it is known that out of 36 pharmacies spread across Kendal, Tangerang, and Yogyakarta City, seven pharmacies do not have a particular warehouse. It is because at 6 pharmacies, there still needs to be a special warehouse for storing drugs, and 1 other pharmacy has a drug storage area integrated with the store (pharmacy). The pharmacy has a room that tends to be narrow (not too wide) so that the medicine storage area is integrated with the store (pharmacy).

   According to Muntasir (2019), unsafe drug storage can cause unwanted things to happen, such as theft of drugs or cause physical interference with the drug, thereby damaging the quality of the drug. Thus, it is essential to have a special warehouse in a pharmacy.

2. Drugs Stored, Not Mixed with Other Equipment

   According to Afqary, Ishfahani, and Mahieu (2018), storing drugs in pharmacies mixed with materials or equipment can cause contamination; for example, there are rusty medical devices.

According to Hadirani (2009), microbial contamination of the human body can occur due to a lack of attention to the cleanliness of pharmacy staff and medical device facilities and equipment, for example, tools for dispensing recipes. So when dispensing prescription drugs, there is contamination between drugs and equipment due to unhygienic pharmacy staff.

Regulation of the Minister of Health Number 73 of 2016 states that the storage area for drugs or medicinal substances is not used to store other goods. It is because it can cause contamination. Based on the study's results, it was found that out of 36 pharmacies spread across Kendal, Tangerang, and Yogyakarta City, there were 5 pharmacies whose drug storage was still mixed with other equipment, including medical devices. Because these pharmacies need a larger room, some medical devices are stored combined with drug storage. It is, of course, hazardous for contamination; for example, there are medical devices that can rust so, which can cause the quality of pharmacy services to decrease (Afqary, Ishfahani, and Mahieu, 2018).

3. Medicines are placed on racks or pallets for indirect storage on the floor

A floor is a place for microbial contamination, such as bacteria, viruses, germs, etc. When the microbes. If it touches or is exposed to the wind, it will stick to objects or items around it (Syarifah and Novarieta, 2015). According to Hadidani (2009), the human body has many microbes if the human does not maintain hygiene. A pharmacy is a place where many people pass by to buy medicine. The more people passing by, the more microbes are left in the pharmacy, including the floor. Therefore, storing medicines directly on the floor is very risky.

Based on the study's results, it was found that all of the samples, namely 36 pharmacies spread across Kendal, Tangerang, and Yogyakarta City, stored drugs on shelves/pallets rather than directly on the floor. Some things that can affect pharmacy compliance in keeping drugs on shelves/pallets and not directly on the floor include the price of shelves/pallets that are pretty affordable and primary health education owned by pharmacists or pharmacist assistants who understand the dangers of floor contamination. In addition, this has also been regulated in the Minister of Health Regulation Number 73 of 2016 concerning Pharmaceutical Service Standards in Pharmacies.

4. Drugs Stored in Boxes from Delivery

According to the Regulation of the Minister of Health Number 73 of 2016, medicines or medicinal ingredients must be stored in the factory's original container (box). However, there are exceptions or emergencies where the contents of the drug or drug ingredients are transferred to another container; it must be able to prevent contamination and include clear information on the new container.

Based on the study's results, it was found that out of 36 pharmacies spread across Kendal, Tangerang, and Yogyakarta City, 10 pharmacies did not store medicines in boxes from shipments.

They (10 pharmacies) stated that several drugs were immediately arranged on the shelves so that they were taken out of the box from the shipment, and some drugs were not kept in the box from the load.

Referring to the Regulation of the Minister of Health Number 73 of 2016, there are several exceptions or emergency medicines that must be removed from the factory's original container (box), so during the study, it was found that a pharmacy contained several drugs which were not kept in the box from delivery. However, there is a contamination risk, so removing the medicine from the original manufacturer's container is not recommended except for emergency or exceptional drugs.

5. Drugs Separated Based on Dosage Form

According to Regulation of the Head of the National Disaster Management Agency No. 6 of 2009, drug storage must be separated because each drug has a different type, dosage form, and packaging. If drug storage does not meet the requirements for proper drug storage, it is feared that the properties of the drug will change and may even damage the medicine.

Based on the study's results, it was found that all of the samples, namely 36 pharmacies spread across Kendal, Tangerang, and Yogyakarta City, stored drugs based on dosage forms. It can happen because there are regulations that govern, namely Regulation of the Minister of Health Number 73 of 2016 concerning Pharmaceutical Service Standards in Pharmacies. So that all pharmacies know about drug storage based on preparation. Apart from that, primary health education owned by pharmacists or pharmacist assistants who work in pharmacies also supports properly implementing this regulation.

6. Drugs Arranged Alphabetically

According to the Regulation of the Minister of Health Number 73 of 2016 concerning Pharmaceutical Service Standards in Pharmacies, one of the drug storage systems is arranged alphabetically. It can help simplify the process of storing drugs, for example, in checking the stock of the number of drug supplies in the pharmacy and the monitoring process.

Based on the study's results, it was found that out of 36 pharmacies spread across Kendal, Tangerang, and Yogyakarta City, there were 4 pharmacies whose drug stores needed to be arranged alphabetically. It can be since drug storage is carried out only by placing according to the dosage form, so there is no need to set it alphabetically. Thus, the 4 pharmacies differ from the pharmaceutical service standards in pharmacies stipulated by Regulation of the Minister of Health Number 73 of 2016. Drugs are stored according to drug class (General/Moderate/Severe Disease Drugs)

In Regulation of the Minister of Health Number 73 of 2016 concerning Pharmaceutical Service Standards in Pharmacies, the drug storage system is carried out by taking into account dosage forms and drug therapy classes and arranged alphabetically. Referring to the Regulation of the Minister of Health of the Republic of Indonesia Number HK01.07/MENKES/813/2019 concerning the National Formulary, therapy classes include anesthetics, hypo-allergy, drugs for anaphylaxis, etc. Thus, drug

storage, according to drug class, does not have pharmaceutical service standards in pharmacies.

Based on the study's results, it was found that out of 36 pharmacies spread across Kendal, Tangerang, and Yogyakarta City, there were 11 pharmacies whose medicines were not stored according to the drug class (treatment for general/moderate/severe diseases). Some stated that drug storage was only arranged according to the dosage form or alphabetical order. It is because drug storage, according to drug class, does not include pharmaceutical service standards in pharmacies. In contrast, storage according to dosage forms and according to alphabetical order is included in pharmaceutical service standards in pharmacies.

7. Drugs Requiring Cold Temperatures Stored in the Refrigerator/Chold Chain

In the Regulation of the Minister of Health, Number 73 of 2016, concerning Pharmaceutical Service Standards in Pharmacies, all drugs or medicinal ingredients must be stored in appropriate conditions to guarantee the safety and stability of these drugs. Refrigerators or refrigerators can store medicines that require cold temperatures (Utami, 2019). In addition, the vaccine chain or cold chain is usually used to store vaccines that need cold temperatures to maintain vaccine quality (Yunus, 2018).

Based on the research results, it is known that out of 36 pharmacies spread across Kendal, Tangerang, and Yogyakarta City, 2 pharmacies store particular medicines that require cold temperatures, not stored in a refrigerator or cold chain. It can happen if the pharmacy does not sell or have drugs that require cold temperatures in the storage process. However, if the storage of drugs is not carried out according to the conditions, then this is not by the standards of pharmaceutical services at the pharmacy.

8. Narcotics and Psychotropics Kept in Special Cabinets and Locked

Narcotics and psychotropics can be harmful if misused or used without strict control and supervision. Therefore, it is necessary to pay attention to the management of narcotic and psychotropic drugs, especially in the storage system (Syafitri and Yuliawati, 2021).

In Regulation of the Minister of Health, Number 73 of 2016 concerning Pharmaceutical Service Standards in Pharmacies, all drugs or medicinal ingredients must be stored in appropriate conditions or conditions so that the safety and stability of the drug is guaranteed. Thus, keeping narcotics and psychotropics in a unique and locked cupboard is one of the standards for pharmaceutical services in pharmacies, namely, security guarantees.

Based on the research results, it was found that out of 36 pharmacies spread across Kendal, Tangerang, and Yogyakarta City, there were 13 pharmacies where narcotic and psychotropic drugs were not stored in extraordinary cabinets or locked. These pharmacies do not provide or sell narcotic and psychotropic medicines or are no longer allowed to sell them.

9. Drug Storage Using FIFO and FEFO Systems

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According to the Minister of Health Regulation Number 73 of 2016 concerning Pharmaceutical Service Standards in Pharmacies, the storage process, namely dispensing drugs, uses the First Expire First Out (FEFO) and First In First Out (FIFO) systems. The First In First Out (FIFO) system in which newly entered drugs are placed behind the previous drugs, while the First Expire First Out (FEFO) system places medicines that have a longer ED (Expired Date) set behind other medications. drugs with shorter ED (Expired Date) (Sheina, Umam and Solikhah, 2010).

Based on the research results, it is known that all samples, namely 36 pharmacies spread across Kendal Regency, Tangerang, and Yogyakarta City, have stored medicines using the First Expire First Out (FEFO) and First In First Out (FIFO) systems. First Expire First Out (FEFO) and First In First Out (FIFO). It is by the existing regulations, namely Regulation of the Minister of Health Number 73 of 2016, concerning Pharmaceutical Service Standards in Pharmacies.

10. Treatment of Drugs that are Nearing Their Expired Period

Medicines that are nearing their expiry date require special handling. These drugs must be recorded so that there will be no errors in giving the medication to the buyer. In addition, the data for recording drugs nearing their expiration date is submitted to the distributor of each drug in accordance with the distributor's policy of accepting returns for drugs nearing their expiration date (Rizal, 2018).

Based on the study's results, it is known that the most common treatment for drugs that are close to expiration is selling in advance or selling quickly before the end. Data collection or labeling is carried out, separated from the previous drug storage area to another place, or returned to the distributor by the provisions stipulated by the distributor.

11. Treatment of Expired Drugs

According to the Regulation of the Minister of Health Number 73 of 2016 concerning Pharmaceutical Service Standards in Pharmacies, expired or damaged drugs must be destroyed according to the type and dosage form. The destruction of expired or damaged drugs containing narcotics and psychotropic substances is carried out by the pharmacist and witnessed by the District/City Health Office. Then, drugs other than narcotics and psychotropics are destroyed by pharmacists and seen by other pharmaceutical staff with a license to practice or work. The destruction event report evidences the destruction process.

Based on the research results, it is known that most of the treatment for expired drugs is destruction, for example, by burning and being returned to the seller or distributor of the drug. Then, some of them are collected to be separated in special containers or cabinets to wait for the time of destruction. In addition, some are immediately discarded (removed from the packaging after being crushed). The types of narcotic and psychotropic drugs were handed over to the Health Service for destruction. These things are by the Regulation of the Minister of Health Number 73 of 2016

concerning Pharmaceutical Service Standards in Pharmacies.

CONCLUSION

Based on the results of the research conducted, several conclusions were obtained, including:

1. Only 7 of the 36 pharmacies don't keep their drugs in a dedicated warehouse because they don't have one, and their storage space is still part of the store.
2. There is potential contamination because 5 of the 36 pharmacies store drugs together with other equipment like medical devices.
3. All 36 pharmacies in the sample were found to keep their medication in locked cabinets or on pallets rather than on the floor.
4. Because some medicines were immediately arranged on the shelves, and some were not kept in the box from delivery (emergency or exceptional medicine), 10 out of the 36 pharmacies did not support the treatment in the box.
5. Drugs were organized by dosage form in all 36 pharmacies.
6. By Pharmaceutical Service Standards in Pharmacies citing Regulation of the Minister of Health Number 73 of 2016, only 4 of 36 pharmacies have their medications arranged alphabetically.
7. There are 11 out of 36 pharmacies whose drug storage does not match the drug class (general/moderate/severe disease drugs) because drug storage is only arranged according to the dosage form or alphabetically.
8. There are 2 out of 36 pharmacies do not store particular drugs in the refrigerator or cold chain that require cold temperatures because they do not sell or have drugs that require cold temperatures in the storage process.
9. There are 13 out of 36 pharmacies whose storage of narcotic and psychotropic drugs is not kept in a special cupboard and are locked because they do not sell these drugs.
10. All samples, namely 36 pharmacies, stored drugs using the FIFO and FEFO systems.
11. Expiring medications are typically handled in one of four ways: they are sold first or quickly, data collection or labeling is performed, they are relocated from the drug storage area, or they are returned to the distributor. Expired drugs are typically destroyed, returned to distributors, separated into special containers, stored for destruction, or discarded (after packaging is removed and crushed). The Health Service was given the narcotics and psychotropics to be disposed of safely.

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