



Analysis of Determinants of the Logistics Management System of Medical Devices at the Wamena Regional General Hospital, Jayawijaya Regency

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Abstract

Functions and Roles of hospitals in addition to medical treatment also meet the requirements of location, buildings, infrastructure, and human resources, hospitals must also meet the requirements of pharmacy and equipment. Medical Devices are instruments, apparatus, machines and/or implants that do not contain drugs that are used to prevent, diagnose, cure and relieve disease, treat sick people, restore health in humans, and/or form structures and improve body functions. The purpose of this study was to determine the logistics management system for medical devices at the Wamena Regional General Hospital. This type of research is qualitative descriptive with in-depth interviews and document review involving 8 informants. The results of this study indicate that planning is made based on annual and routine meetings, procurement is based on unit needs, budgeting is based on RAB and APBD, no logistics warehouse storage, distribution is often long and late so users wait, standard maintenance and categorizes good and damaged goods, elimination carried out on unused goods due to damage, monitoring and evaluation are effective because the final part of the logistics management process is to maintain grade, quality and quantity.

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Introduction

Health development is essentially carried out in the form of the National Health System (SKN) The National Health System is a form and method of implementing health development that combines various efforts of the Indonesian people in one step to ensure the achievement of health development goals in the context of realizing people's welfare as referred to in the Opening of the 1945 Constitution. In the National Health System (2009), it is stated that health development is an effort carried out by all components of the nation that aims to increase

awareness, willingness and ability to live healthy for everyone so that the highest level of public health can be realized. Health services are closely related to the availability of medical equipment, in the RI Law Number 44 of 2009 about concerning Hospitals in its 7th and 15th articles it is stated that in addition to hospitals, they must meet the requirements of location, building, infrastructure, and human resources, hospitals must also meet the requirements in pharmacy, and equipment.

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Medical Devices are instruments, apparatus, machines and/or implants that do not contain drugs that are used to prevent, diagnose, cure and alleviate disease, treat sick people, restore health to humans, and/or form structures and improve body functions.

One of the government institutions that guarantees public health is the hospital. Hospitals are professional health care institutions because their services are carried out by medical personnel such as doctors, nurses, and other health workers (Supartiningsih, 2017). The hospital in addition to functioning as a service center, also functions as a training center for medical personnel and a medical research center (Ministry of Health of the Republic of Indonesia, 2010). In the Regulation of the Minister of Health of the Republic of Indonesia Number 4 of 2018 that the hospital is a health service center that provides inpatient, outpatient, emergency care, and other medical services.

One of the elements that can support public health services in hospitals is medical equipment. Medical devices are used for diagnostic, monitoring, and therapeutic purposes. For this reason, the management of medical devices is important to provide continuous and quality services. Management of medical equipment in a hospital is an obligation and a necessity to protect the community. Medical devices must always be available in accordance with the health quality standards of the hospital as a central institution for public health services and the adequacy of medical devices is always fulfilled in accordance with technological developments and fulfillment needs according to their classification (Barus, 2015).

Logistics management of medical devices in hospitals is very urgent because it is related to public health services and the fulfillment of the Regulation of the Minister of Health of the Republic of Indonesia Number 31 of 2018 about concerning Application of Medical Facilities, Infrastructure and Devices that everyone has the right to get quality health services and affordable.

Several research results that describe the weak logistics management of pharmaceuticals and medical devices by hospitals which ultimately affect the health services provided, one of which is the results of the study Annisa, 2019 showing that there are several problems in the logistics management of medicines in the Pharmacy Installation of Leuwiliang Regional General Hospital, Bogor Regency. These problems are in the

form of a system for deleting goods that have not been implemented and recording and reporting of goods that are still done manually so that reporting delays often occur and have an impact on frequent drug vacancies in warehouses due to delays in drug delivery by distributors (Annisa, 2019).

Good planning and management are needed to ensure the implementation of good and quality health services for the community, including the Wamena Regional General Hospital, Jayawijaya Regency, Papua. Wamena Regional General Hospital is the only patient referral hospital from 6 districts in the Central Highlands of Papua, namely Lanny Jaya Regency, Tolikara Regency, Yalimo Regency, Central Mamberamo Regency, Puncak Regency, and Nduga Regency so that this is a challenge for the RSUD Wamena in providing health services for people in the Central Mountains of Papua (Wamena, 2019).

A phenomenon that often occurs in Wamena Hospital is the limited service provided due to the limited availability of pharmaceuticals and medical equipment so that patients are not infrequently referred to hospitals in Jayapura. Services that are not optimal due to the lack of available medical personnel, lack of personnel skills in using the medical devices that have been provided so that often the tools that have been imported are not used and become antiques in the warehouse, even medical equipment in the form of electronics with more modern technology, they often experience damage when operating the tool due to improper use and are left as junk (Wamena, 2019).

Methods

This research is a qualitative descriptive study. The data were collected by means of observation, literature study of documents related to research variables as well as in-depth interview techniques to people who are considered to know and are directly involved in the logistics management functions of medical devices in Wamena Regional General Hospital. This research was conducted at Wamena Regional General Hospital, Jayawijaya Regency, Papua from September 2020 to October 2020.

The technique for selecting informants in this study was through purposive sampling technique. The sample in the study were 8 officers at Wamena Regional General Hospital.

Results and Discussion

Research on the Analysis of Determinants of the Logistics Management System of Medical Devices at the Wamena Regional General Hospital, Jayawijaya Regency in 2020 conducted to 8 informants by conducting direct and in-depth interviews as well as observing and reviewing existing documents needed to support the research results.

Table 1. Characteristics of Informants in Research at Wamena Hospital, Jayawijaya Regency

| No. | Initials of Informants | Age (Years) | Gender | Position |
|-----|------------------------|-------------|--------|---------------------------------|
| 1 | Ma | 39 | L | Head of Planning and Evaluation |
| 2 | Op | 37 | L | Procurement Staff |
| 3 | Alt | 42 | L | Head of Personnel |
| 4 | Do | 45 | L | Logistics |
| 5 | Pf | 42 | P | Logistics |
| 6 | My | 29 | P | Logistics |
| 7 | Cl | 38 | P | Head of Monev HR |
| 8 | Tr | 41 | P | Head of Financial |

Source: Primary Data, 2020

Planning

Based on the results of interviews conducted with 8 informants, the following results were obtained:

"emmmm... when it comes to planning for goods and medicines and others here, we usually have regular meetings first according to the budget and what the hospital needs" MA, 39 years.

"Request the user is submitted to the program, then the meeting is held at the RBA" TR, 43 years.

"Ummmm, we usually meet all fields first to plan what is requested. Later on, the results of the meeting, when it is clear, we will proceed to the purchase" ALT, 42 years.

"the plan must be made to know what we need, if it is in accordance with our postal budget funds, we will procure it here according to the procedure" OP, 37 years.

"Ohhh yes We get used to it from user requests, the user asks the planning department or the program section, so the planning part will propose to the regional government if it's an item from the APBD budget, from the regional government it will be continued to the RAPBD (APBD Draft), then later it will be approved by the DPRD" DO, 38 years.

"We are the same as other regions when it comes to planning, we will adjust it to the needs of the hospital, including the infrastructure and formation, sir" PF, 45 years.

"I was asked in the planning section directly about how because the logistics section only distributed it unfortunately" MY, 29 years.

"yes sir, we will definitely program what is budgeted at the beginning of the year at regular meetings so that everything is clear on the main tasks and budgeting if you want to make a plan it is also adjusted to the budget" CL, 38 years.

Of 8 Informants interviewed related to planning at the Wamena Regional General Hospital regarding logistics management, all agreed that the management system was preceded by a planning process involving all parties based on existing needs and budgets.

Procurement

On the procurement variable, based on the results of interviews conducted with 3 informants, the following results were obtained:

"Em, if our procurement here, sir, refers to needs, so if what is our need, a procurement procedure is made, and it's also common to use the e-catalog system to view goods," OP, 37 years.

"The purchase of goods is through e-catalog, so the purchasing process is based on Presidential Decree No. 54 of 2010 Presidential Decree No. 4 of 2015. If he is above 200 million we will tender it, you he under 200 million we make direct procurement, but if the item is in e-catalogue, then we must buy it from there" TR, 43 years.

"yes, we refer to what is needed and has been closed if there are many usually a third party" ALT, 42 years.

From the results of interviews with 3 informants in the procurement, finance and personnel or HR sections, the informant's answer was that the procurement from these results can be seen that the process the procurement of drugs at Wamena Hospital has gone through a third party, but this procurement takes a long time and usually uses the e-catalog purchase method.

Budgeting

In the budgeting variable, based on the results of interviews conducted with 8 informants, the following results were obtained:



"if we already have a budget here, the results of our meeting with the president director, regent and DPRD" ALT, 42 years.

"if in finance usually only reduce the budget to each post is according to what is proposed, but sometimes the available funds don't come that way, so usually the priority is first, sir, the program budget is disbursed" MA, 39 years.

"Budget determination is a final process, sir, and this is a very complicated one, so it is better to involve all relevant elements so that there is transparency, right, sir.... ummm, when I set my budget, I usually join the leadership and Bappeda in the discussion, so usually everything is based on the process and needs Hospitals in each program" IP, 39 Years.

Budgeting is the process of preparing a budget, namely a future financial plan that includes management's expectations of revenues, costs, and other financial transactions within one year. This activity is carried out after the main programs have been determined.

Storage

In the storage variable, based on the results of interviews conducted, the following results were obtained:

"ooo,, if here the hospital does not have storage space for medical equipment, yes, it is usually only stored or dropped in an unused empty room" DO, 38 years.

"yes sir ,,, if our storage is still arranged and separated, whether it is medical medical devices or other non-medical devices that have been purchased and have a hospital, but,, we keep them in the room that KTU was then empty, sir" PF, 45 years.

"it is really necessary Sir, there is a separate room to find out which items are still good and have been damaged because we don't have them yet." MY 29 years.

"Erm,,,,, as far as I know, if the goods arrive after they drop in, we just use them and the rest will be stored in their respective offices -each sir" CL, 38 years.

From the results of interviews with several informants in the Logistics section of the Wamena Regional General Hospital, it can be seen that the Alkes Storage Room and others are not available, so all the items for operational purposes are not available. Place it in an empty room or not in use.

Distribution

In the distribution variable, based on the results of interviews with related informants, the results can be seen as follows:

"Ummm,,, usually this is how it is, sir, starting with a request from the room to the distribution section then distribution recaps requests for drugs and medical equipment in the room then requests for distribution to the pharmacy warehouse and from distribution issued to each room." TR, 43 years.

"The mechanism for distributing drugs and medical devices at the Pharmacy Installation of the Wamena Regional General Hospital has not been effective, this is proven by the delivery and receipt of drugs which are always late at the time we are waiting for, the types are sometimes different and the quantities are not" ALT,42 years.

"it doesn't look good in terms of distribution because we usually wait a long time for orders and provisions for meeting results for medical goods or medical supplies, sir" DO, 38 years.

"...ummm what is like, sir,,, especially since we don't have a special manager when dividing For example, the pharmacist who is assigned should be the infrastructure person" OP, 37 years.

From the results of interviews in this study, almost all of the informants stated that the distribution process did not run smoothly and effectively, it was proven that there were still frequent delays and different types of time and types requested by the hospital or department.

Maintenance

On the maintenance variable, based on the results of interviews with related informants, the results can be seen as follows:

"Damaged goods will enter the warehouse later, we will repair them, if they are good, we'll submit them to the room again. We also calibrate at least 4 x 1 year and we submit it to BFK for calibration" MY, 29 years.

"If any of our items are damaged, we will make a procedure, make a letter of damage and later a medical technician will come to repair it" PF, 45 years.

"Usually we call the technician and we also report to the head of the division later he will continue but when it comes to maintenance, we are here to respond, sir" CL, 38 years.

"We also do calibration. Later, after being calibrated, a calibration sticker will be given, when will calibration be carried out, so usually the

medical technician has a record of when to calibrate again" DO, 38 years.

From the interview results it can be seen that the planning process up to the maintenance stage is carried out in the management system at Wamena Regional General Hospital, maintenance is a concern for staff and officers in terms of how to maintain the quality of medical equipment and other items needed by them in supporting the implementation of the task of providing services in hospitals.

Deletion

In the deletion variable, based on the results of interviews with informants regarding deletion, the results can be seen as follows:

"yes sir,,, we have done deletion of goods because they are not suitable for use,,,, yes, they are damaged, sir,, later it could endanger the officers, right?" TR, 43 years.

"We pay attention to the quality and quantity, sir, so we sometimes do deletions, sir" Ma, 39 years.

"Oh yes sir, we just made a direct deletion on items that had piled up and were not used the room is right, sir" PF, 43 yrs.

"Usually, logistics that are outdated, yes, they are old, sir,, you can buy new ones, so we just buy them and delete the old stuff" CL, 38 years.

"oh Yes, sir, we do deletion of damaged goods, usually they are exchanged for the logistics needed by the hospital, sir, and that's rare, because the goods are already in accordance with the order from our initial plan, sir, OP, 37 years.

"thank you sir,,, we usually see first whether it is not feasible or can still be used so that it is not wasteful" ALT, 42 years.

From the interview results, it can be seen that the deletion system is still carried out on items that are no longer used, outdated, or exchanged for goods more needed by the hospital in supporting both medical and non-medical service activities.

Monitoring and Evaluation

Monitoring and evaluation is the final stage of a management process to maintain quality and quality from beginning to end, based on the results of interviews with informants related to monitoring and evaluation, the results can be seen as follows:

"Ummm we monitor and evaluate usually quarterly, yes,, so we still control anything that becomes a problem in the stages" MA, 39 years.

"It's quite complete, it's in accordance with the standards too, but that's the problem. We make a request for 1 year, then it is held, but sometimes there are funds, the goods are there isn't any. And also the requests that we make, not all of them can be carried out, because it all depends on the budget" TR, 43, Then

"Yes, it is in accordance with the standards and is quite complete. So I have to wait. Sometimes that's what we find during the evaluation or during monitoring" OP, 37 years.

From the interview results it can be seen that the monitoring and evaluation stages are running according to the standards that have been made and previously set.

Discussion

Planning

In this study, the planning variable became the first part to be researched and asked qualitatively to the informants and the results of the study showed that there was a planning process made by the manager and staff of the Wamena Regional General Hospital as a basic form of determining the purpose and type and quantity of goods and medical supplies, both medical and non-medical services needed by hospitals as operational processes and supporting service activities for patients. This is in line with Febreani & Chalidyanto, 2016 stating that the planning of drug needs carried out by the Logistics of the Pharmacy Installation of Siti Khodijah Hospital is in the form of monthly drug planning which is carried out at the end of each month. The annual drug planning is based on the annual Budget Business Plan (RBA) of Siti Khodijah Hospital where revenue comes from pharmacy as much as 70-75% of the total hospital revenue in that one year (Febreani & Chalidyanto, 2016).

Management aims to regulate an important part of the hospital to help run a hospital to be effective and efficient. Where in a hospital must have a warehouse, and in a warehouse management is needed to manage and regulate the activities that are in it and that also needs to be controlled, Logistics is carried out based on a logistics cycle in the Hospital and this must be organized or neatly arranged. This cycle must be executed properly.

When making plans, you must go through a selection process in order to ensure the optimization of drugs and medical devices used to serve patients. The relationship of a logistics system can be interpreted as the relationship



between space and time. The structure of space which shows a facility and its relationship. The time structure and logistics network shows a level of inventory and the level of existing flows.

Procurement

From the results of this study it can be seen that the procurement process runs according to the initial planning where all needs and orders for goods or medical equipment depend on demand and needs by paying attention to the number, type and quality of goods ordered by the field or section that requires this research not in line with what was done that Padang Pariaman Hospital is still having problems in the implementation of the procurement of medical devices where there are still medical devices that have not been used in providing health services in hospitals. This study aims to see how the analysis of the procurement of medical devices at Padang Pariaman Regional General Hospital in 2017 (Kenedi et al., 2018).

The results of this study from the input components, policies or SOP do not yet exist, personnel in terms of quantity are not sufficient, the budget needs to be increased, especially those sourced from the APBD, infrastructure facilities are not yet available. There is in the process component, planning and receiving/checking there are still problems while in the procurement component the selection of providers is in accordance with the Presidential Regulation of the Republic of Indonesia No. 4 of 2015. In the output component, the implementation of procurement of medical devices at Padang Pariaman Regional General Hospital is not fully in accordance with the needs of hospitals and users.

In contrast to what was done by Valendedi, 2015 the same as the results of this study where the procurement process runs according to what has been made in the planning of the RAB meeting at the hospital so that procurement is not doubled and there is no budget wastage. The process of procuring logistics and other goods at the Wamena Regional Public Hospital at this time in the Covid-19 condition or the pandemic period is quite different from the usual conditions where everything is adjusting to circumstances where everything is limited and time is not much, and is always within the rules of health protocols which are maintained in a timely manner. The process slows down the procurement work process so that the distribution of goods is also quite slow to arrive

at the party or unit in need. This adjustment also experienced many delays in other areas of the logistics management stage, both medical and non-medical.

Unlike before, when there was no pandemic during the COVID-19 period, everything was quite smooth in terms of procurement because it didn't really limit the distribution and other processes to the hospital, the leeway in space and meetings also made the performance of officers more leverage than when the pandemic occurred in Wamena (Valendedi, 2015).

Budgeting

This study shows that budgeting as a good and correct management process is in accordance with the fixed procedures made in the initial series such as planning and procurement so that in determining the budget all right on target and needs, this research is in line with that carried out by Indrawati & Rini, 2018 that in the preparation of the budget in accordance with the results of routine meetings and others so that the existing budget is appropriate to carry out the next process in the logistics management system both medical and non-medical in hospitals (ndrawati & Rini, 2018).

The planning and budgeting that is prepared contains programs and activities as an elaboration of the existing work plan in one fiscal year and the budget needed to carry it out is carried out by each installation in the hospital. The final stage in the preparation of the budget is to convert the required resources into money.

Storage

This research shows that at the Wamena General Hospital, Jayawijaya Regency, there is no special warehouse that is used as a place for storing medical equipment and other logistics, but only storing and using unused empty space to store logistics and medical equipment that have been purchased. In this study also found the results that in the storage that manages medical equipment is part of the facilities and infrastructure in every place or empty room that is used.

This research is not in line with what was done by Malinggas, 2015 that from the results of this study there was one warehouse prepared by the hospital to stock and store all medical and non-medical medical equipment as materials to be used so that they remain sterile and maintain quality and

quantity for a certain time and period (Malinggas, 2015).

Distribution

From the results of this study it was found that the process of distributing medical equipment and other goods did not go well and was not effective where the hospital often waited for a long time after ordering the requested goods, then sometimes the delivery took a long time so that it took more time longer than when ordered.

In contrast to the results of other studies conducted by Rusdiana et al., 2016. Research has been conducted at the Malingping general hospital on the availability of health service infrastructure, such as community health centers and hospitals that are affordable in terms of distance traveled and economic costs are still very limited. By using survey and interview methods, the results show that the distribution mechanism of drugs and medical devices at the Pharmacy Installation of the Malingping Regional General Hospital is generally effective because drugs and medical devices are distributed evenly to meet the needs of patients in need, this is proven by the delivery and receiving drugs that are always on time, in the right type and in the right amount (Rusdiana et al., 2016).

Distribution at Medan Haji Hospital begins with the request process from the user, where previously the goods that have arrived are stored in the warehouse and will be distributed to each room accompanied by proof of handover and it will all be done by checking the SOP and completeness of the goods to be distributed. And this is also not appropriate because the goods that have just arrived should be received directly by the user and stored directly in the room.

Maintenance

In this study, it is stated that there is no special maintenance, the only maintenance that has been carried out so far is routine maintenance, such as cleaning, recording room temperature and refrigerator temperature, as well as checking the condition of the goods whether they are still good to use or not suitable for use, but This is consistently carried out so that Maintenance as a logistics management process at the Wamena Regional General Hospital runs well and continues to be implemented.

The provision of health to the community carried out in hospitals is largely determined by the provision of service facilities, namely facilities, infrastructure and other factors. Hospital facilities and infrastructure must be strived to always be in good condition and suitable for use to ensure the quality and continuity of health services. According to RI Law no. 44 of 2009 that concerning Hospitals it is stated that the Hospital is a health service institution for the community with characteristics that are influenced by the development of health science, technological advances and the socio-economic life of the community which must continue to be able to improve services that are more qualified and affordable by the community in order to realize health degrees the highest.

In line with research conducted by Candra, Widodo, & Tonis, 2016 Based on observations made by researchers, in the implementation of hospital facilities and infrastructure maintenance, policies or methods for implementing IPSRS refer to government regulations and hospital procedures that have been determined (Candra et al., 2016).

Elimination

This study aims to analyze the input, process, and output of the logistics management of medical devices at the Boja II Public Health Center. This type of research is qualitative research. The data collection technique used in-depth interviews (in-depth interviews). Informants were selected purposively according to research needs. The data is presented through a brief description (narrative). The results of the study indicate that there are still some logistical functions that have not been maximized. These include limited storage of medical devices, elimination of all damaged medical devices, and the availability of medical devices which are considered to be lacking.

This is different from the research conducted by Ramadhan, 2020 which obtained results where the logistics management of medical devices is a science and or art in the process of planning and determining needs, procurement, storage, distribution, maintenance, removal and control of materials/tools. Based on initial observations made, the Boja II Public Health Center does not have a warehouse for ready-to-use goods, the availability of medical devices is still 70% of the compendium of medical devices, and there are often delays in reporting goods to the Health Office (Ramadhan, 2020).



Monitoring and Evaluation

From the results of this study it was found that this process was running effectively and correctly according to the stages, monitoring and evaluation were running routinely and completely on all goods and logistics used by the hospital so that it could be used as an indicator of whether home logistics management was running in accordance with the Protap and resulted in clear programs and management stages needed by the hospital, the hospital planning department is directly responsible for monitoring and evaluating all types of medical equipment, drugs and other items needed by the Wamena Hospital.

This is in line with papatungan, 2020 the purpose of this study was to find out how the results of the logistical evaluation of medical devices at the UPTD Pinolosian Public Health Center, South Bolaang Mongondow district. The research method used in this research is descriptive research method with a qualitative approach. Data collection in this study was conducted through interviews, observation and document collection. While the data analysis technique that the researcher uses is qualitative with descriptive analysis of Moleong Lexy. Based on the results of the study, it can be concluded that the Logistics Evaluation of Medical Devices at the UPTD Pinolosian Public Health Center is a series of procedures to assess a program and obtain information about the success of achieving goals. And is a process to enable the quality of procurement of Medical Devices. With the evaluation, the puskesmas can find out what medical devices need to be added and what medical devices are not suitable for use and need to be removed, in this case the health department plays an important role in the evaluation (Papatungan et al., 2020).

Conclusion

Based on the results and discussion of the research and adapted to the research objectives, the conclusion of the study is that the planning of medical devices is carried out through the process of the Beginning of the Year Meeting or routine meetings in all sections to find out the plan for spending on medical equipment at Wamena Regional General Hospital. Procurement of medical equipment is based on the need for parts or units at the Wamena Regional General Hospital according to demand and seeing the amount that has been used up or has been damaged. Budgeting for

medical equipment, both medical and non-medical, is based on the RAB and Regional Budget of Jayawijaya, and the results of the approval of the leadership and coordination with the government and Regional People's Representative Assembly (DPRD). Storage of medical equipment is less effective at Wamena Regional General Hospital because there is no special storage warehouse so that it only uses empty rooms that are not being used. The distribution of medical device goods does not run smoothly and often experiences delays so that the user waits from the requested time or when ordering. The maintenance of medical equipment in normal and standard forms is then managed by the Infrastructure Officer to check whether the goods are still good or have been damaged. Deletion is carried out on items that are not used due to damage and are no longer suitable for use. Finally, Monitoring and Evaluation continues as part of the management process that needs to be carried out to ensure the quality, quality and quantity of medical equipment items that support the operation of both medical and non-medical service activities at Wamena Regional General Hospital.

The suggestions given are the need for better planning before implementing a program, prioritizing the procurement of goods needed by the Hospital, in the budget section prioritizing the need for logistics goods, the need for a special room for logistics goods storage, so that the elimination is more effective it is necessary to record in every documents, as well as monitoring and evaluation variables must be carried out properly as a measure of success in the logistics management process at Wamena Regional General Hospital.

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