

## Consumables Inventory Management in The Pharmacy Installation of PT Siloam Internasional Hospitals Manado

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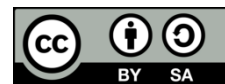
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### ABSTRACT

This research aims to determine the correct implementation of inventory management analysis using the Always Better Control (ABC), Lead Time, Safety Stock, and Re-Order Point methods, whether they are in accordance with the current inventory management process which is running in a systematic manner. This research is a type of quantitative research with a descriptive approach where this research uses secondary data sources, the Time Series data collection method was collected using the documentation method with a Purposive Sampling Technique research sample from a total of 3068 consumables at the PT Siloam Internasional Hospitals Manado Pharmacy Installation in the author's research using a time series data approach with a time span of 3 months from January-March 2025. Analysis of Always Better Control (ABC), Lead Time, Safety Stock, and Re-Order Point is better implemented to optimize stock inventory. There is potential for stock vacancies and service delays which result in reduced consumer confidence, inconvenience due to delays in service resulting from delays in fulfilling supplies of consumables from the Pharmacy Installation warehouse for the sustainability of the hospital's credibility in the hope of optimizing the inventory of Consumables Inventory according to the analysis calculations that have been carried out to secure stock, make shopping plans and collaborate with third parties (Suppliers).

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## INTRODUCTION

Consumables inventory management is a very important aspect for hospitals that require various types of consumables, such as medical devices, medicines and other equipment, to support operations and services to patients. The availability of these materials directly influences the quality of health services provided. Effective inventory management not only helps in maintaining smooth hospital operations but

also contributes to cost control. High costs due to inventory that is not well managed can burden the hospital budget, resulting in low efficiency and reducing the hospital's ability to provide optimal services.

Consumable materials are items that are consumed or used directly in the daily activities of a company (Rahayu et al., 2019). The Pharmacy Installation at PT Siloam International Hospitals Manado has various categories for grouping goods in the process of warehousing and distributing goods. Among them are the categories of pharmaceutical drugs and Consumable Equipment (BAHP)". These materials are managed by the Pharmacy Installation warehouse section at PT Siloam International Hospitals Manado using systemized Inventory Management. With a total of 3068 items of consumables, orders are made based on the Master Plan system for purchasing and selling goods in a systemized period. The intended sales are the distribution of inventory from the pharmaceutical warehouse to units within PT Siloam International Hospitals Manado. The problem is that it often happens that there are several types of consumables that are lacking in stock, which is not optimal, which causes problems with health service activities. Considering the high level of need for pharmaceutical and medical goods in hospitals, which are the company's main financial source, the reliability of an effective and efficient management system is needed which is able to support procurement and disbursement activities for consumable medical materials whose aim is to maintain existing stock supplies. In previous research, Sholihul Huda (2024) said that the analysis was still limited to a few types of consumables and the time span was short (1 month) for collecting research data. Therefore, based on this research gap, new research will be developed on a similar topic regarding how to manage the inventory of consumables in the pharmaceutical installation of PT Siloam International Hospitals Manado, as well as an evaluation process. If deficiencies are found, management of availability can be improved at a later date through analysis of Always Better Control (ABC), Lead Time, Safety Stock, and Re-Order Point with the title "Inventory Management of Consumables in the Pharmaceutical Installation of PT Siloam International Hospitals Manado.

## **METHOD**

The research is a type of quantitative research with a descriptive approach, namely a type of research that aims to describe the research object with supporting data in the form of nominal data and measured using certain statistical tools. Furthermore, a descriptive approach is used to provide a detailed and accurate description of the situation or condition of the research object (Sahir, 2021). This research will focus on calculating and presenting the results of Always Better Control (ABC), Lead Time, Safety Stock and Re-Order Point analysis in the inventory management of pharmaceutical installations at PT Siloam Internasional Hospitals Manado.

### **Location and Place of Research**

This research was located at the PT Siloam Internasional Hospitals Manado Pharmacy Installation. The choice of location was taken with the consideration that PT Siloam Internasional Hospitals Manado. It is a private hospital with good performance and service as proven by its existence to date.

### **Method of collecting data**

This research uses secondary data sources, namely sources of data or information that are collected indirectly by researchers, but have previously been collected by other parties and can be reused for research or analysis purposes. The secondary data source for the research came from the Siloam Internasional Hospitals Manado Hospital Pharmacy Installation.

### Research Population and Sample

Purposive Sampling Technique, namely a sampling technique with certain criteria. from a total of 3068 Consumables in the Pharmaceutical Installation of PT Siloam Internasional Hospitals Manado, researchers chose to use Consumables by selecting items that had a big risk to service if a vacancy occurred, seen from the average usage for 3 months. In the research the author used a time series data approach. Time series refers to sequential observations of one or more variables over a regular period of time (Wei, 2006). This data will be modeled using a time series model covering a certain period, namely January - March 2025.

### Variables and Indicators

Always Better Control (ABC) analysis is a product classification method based on the highest to lowest value ranking which is divided into three large groups A, B, C. "Group A" is an item with a high value, "B" is a medium value, and "C" is a low value. The goal is to give greater management attention to inventory items that have a greater financial impact. These variable indicators are:

**Table 1. Always Better Control (ABC) Analysis Indicators**

No	Amount of Use	Group
1	0-80%	Kelompok A
2	80-95%	Kelompok B
3	> 95%	Kelompok C

Source: Pharmacy Installation Siloam Hospitals, Manado

1. Lead Time, namely the time from when the goods or materials are ordered until the goods or materials arrive and are ready to be used, including processing, shipping and receiving times. The formula for calculating Lead Time is:  $\text{Lead Time} = \text{Production time} + \text{Packing time} + \text{Storage time} + \text{Quality control time} + \text{Delivery time}$
2. Safety Stock is additional stock held beyond normal inventory to anticipate fluctuations in customer demand or uncertainty in Lead Time. Safety Stock helps prevent inventory shortages when there is uncertainty or surprises in demand or delivery times. The Safety Stock formula is:  $\text{Safety Stock} = (\text{Max. Daily Sales per day} \times \text{Max. Lead time}) - (\text{Average Product Sales per day} \times \text{Average Lead Time})$ . Next, to calculate Initial Inventory and Average Inventory, namely:  $\text{Initial Inventory} = \text{EOQ} + \text{Safety Stock}$  and  $\text{Average Inventory} = (\text{EOQ}/2) + \text{Safety}$
3. Re-Order Point is the inventory level at which new orders must be placed to avoid inventory shortages before new orders arrive. Re-order point is calculated by considering daily consumption levels, Lead Time, and safety stock. The Re-Order Point formula is:  $\text{Re-Order Point} = (\text{Average Lead Time} \times \text{Average Daily Sales}) + \text{Safety Stock}$

### Data Analysis Techniques

The research uses the Gap Analysis Technique as an analytical approach. Gap analysis is a method for measuring the difference between the current state and the desired level of achievement. Gap analysis is used to measure actual differences in inventory in the pharmaceutical warehouse in order to obtain ideal conditions along with gaps in inventory management in the Siloam Hospitals Manado Pharmacy Warehouse.

## RESULT AND DISCUSSION

### Consumable Material Inventory Management Analysis

From the results of the identification of inventory management, especially consumables at PT Siloam Internasional Hospitals Manado from January to March 2025, Always Better Control (ABC), Lead Time, Safety Stock and Re-Order Point were used.

### Always Better Control (ABC) Analysis

Always Better Control (ABC) is a method of classifying products based on the highest to lowest value ranking which is divided into three large groups A, B, and C. Group "A" is an item with a high value, "B" has a medium value, and "C" has a low value. Always Better Control (ABC) analysis is a method with inventory management (Inventory Management) to control a small number of items, but have a high investment value.

**Table 1. Always Better Control (ABC) Analysis Results**

No	Group
<b>Group A</b>	
1	Leukoplast Hypafix 5cmx5m 71442-03 Bsn Medical
2	Alcohol Swabs Onemed
3	Leukoplast Hypafix 10cmx5m 71442-04 Bsn Medical
4	Syringe 5ml (22gx1.5inch) Onemed
5	Syringe 10ml (21gx1.5inch) Onemed
<b>Group B</b>	
1	Syringe 3ml (23gx1.25inch) Onemed
2	Leukoplast Hypafix 15cm X 5m 71442-05 Bsn Medical
3	Syringe 10ml Luer Lock 30215355 Bd
4	Plesterin Bulat Onemed
5	3way Stopcock With Tube Onemed
6	Skintact Foam Ecg Electrode 35x50mm Fs521 Leonhard
7	Gauze Swab Steril 10x10cm 16ply 5s Sg1016p5 Winner
8	Ecg Electrodes Bluesensor R-00-S/25 Ambu
<b>Group C</b>	
1	Terufusion Solution Administration Set 20drops=1ml Ti*Q300wi Terumo
2	Surflo Winged-Port 24gx0.74mm; Sr+Dm2419pd; Terumo
3	Soft Pad Underpad 60x90cm Onemed
4	Medigloves Sterile Powder Free Latex 7.0 Onemed
5	Surflo Winged-Port 20gx32mm; Sr+Dm2032pd; Terumo
6	Syringe 1ml Ss+01t2613 Tuberculin Terumo

- 7 E-Care Surgi Glove Sterile Powder Free Latex 6.5 Emp
- 8 Surflo-Wp (Winged & Ported) Iv Cath 22g Biru 0.90x25mm 42ml/Min; Sr+Dm2225pd; Terumo
- 9 Surflo Winged-Port 26gx0.64mm; Sr+Dm2619pd; Terumo
- 10 Gloves Sterile Powder Free Latex 7.5 Stardec
- 11 Optise Post-Op 6,5 X 5cm 66000708 Smith&Nephew
- 12 E-Care Surgi Glove Sterile Powder Free Latex 8.0 Emp
- 13 Needle Agani 18gx1.1/2inch An\*1838r Terumo
- 14 Urobag 2000ml With Hanger Onemed
- 15 Intrafix Safeset 4063005 Bbraun
- 16 Suction Connecting Tube 3.6m Plus Yankauer Tip Onemed
- 17 Infusomat Space Line 8700087sp-26 Bbraun
- 18 Foley Cath 2way Nelaton Nortta 18ch; 09384-34; Bsn
- 19 Foley Cath 2way Nelaton Nortta 16ch; 09384-33; Bsn
- 20 Uniflex 6inch (4.5mx15cm) 02317-01 Bsn
- 21 Uniflex 3inch (4.5m X7.5cm) 02314-01 Bsn
- 22 Uniflex 4inch (4.5mx10cm) 02315-01 Bsn

Sources: Processed Data 2025

From these results it can be concluded that category A, taking into account the highest impact on the consumables used, is Leukoplast Hypafix 5cmx5m 71442-03 Bsn Medical, Alcohol Swabs Onemed, Leukoplast Hypafix 10cmx5m 71442-04 Bsn Medical, Syringe 5ml (22gx1.5inch) Onemed, and Syringe 10ml (21gx1.5inch) Onemed. For category B or medium category are Syringe 3ml (23gx1.25inch) Onemed, Leukoplast Hypafix 15cm Fs521 Leonhard, Gauze Swab Sterile 10x10cm 16ply 5s Sg1016p5 Winner, Ecg Electrodes Bluesensor R-00-S/25 Ambu. For category C or low category, it is Terufusion Solution Administration Set 20drops=1ml Ti\*Q300wi Terumo, Surflo Winged-Port 24gx0.74mm; Sr+Dm2419pd; Terumo, Soft Pad Underpad 60x90cm Onemed, Medigloves Sterile Powder Free Latex 7.0 Onemed, Surflo Winged-Port 20gx32mm; Sr+Dm2032pd; Terumo, Syringe 1ml Ss+01t2613 Tuberculin Terumo, E-Care Surgi Glove Sterile Powder Free Latex 6.5 Emp, Surflo-Wp (Winged & Ported) Iv Cath 22g Blue 0.90x25mm 42ml/Min; Sr+Dm2225pd; Terumo, Surflo Winged-Port 26gx0.64mm; Sr+Dm2619pd; Terumo, Gloves Sterile Powder Free Latex 7.5 Stardec, Optise Post-Op 6.5 4063005 Bbraun, Suction Connecting Tube 3.6m Plus Yankauer Tip Onemed, Infusomat Space Line 8700087sp-26 Bbraun, Foley Cath 2way Nelaton Nortta 18ch; 09384-34; Bsn, Foley Cath 2way Nelaton Nortta 16ch; 09384-33; Bsn, Uniflex 6inch (4.5mx15cm) 02317-01 Bsn, Uniflex 3inch (4.5m

With the Always Better Control (ABC) grouping, it is hoped that management can prioritize consumables according to categories considering the high demand, and prioritize stock availability in these categories by collaborating with suppliers or providing alternative options for replacement consumables to ensure service stock security.

### Lead Time Analysis

This is how long it takes from the purchasing process until the goods are distributed, in this case it is calculated by Lead Time = Packing Time + Storage Time + Quality Control Time + Delivery Time

**Table 2. Lead Time Analysis Results**

No	Item	Packing Time (hours)	Storage Time (hours)	QC Time (hours)	Sending Time (hours)	Lead Time (hours)	Lead Time ((day)
1	3way Stopcock With Tube Onemed	1	48	48	48	72	3
2	Alcohol Swabs Onemed	1	144	144	144	168	7
3	E-Care Surgi Glove Sterile Powder Free Latex 6.5 Emp	1	144	144	144	168	7
4	E-Care Surgi Glove Sterile Powder Free Latex 8.0 Emp	1	144	144	144	168	7
5	Ecg Electrodes Bluesensor R-00-5/25 Ambu	1	48	48	48	72	3
6	Foley Cath 2way Nelaton Nortan 16ch; 09384-33; Bsn	1	48	48	48	72	3
7	Foley Cath 2way Nelaton Nortan 18ch; 09384-34; Bsn	1	48	48	48	72	3
8	Gauze Swab Steril 10x10cm 16ply 5s 5g1016p5 Winner	1	48	48	48	72	3
9	Gloves Sterile Powder Free Latex 7.5 Stardec	1	48	48	48	72	3
10	Infusomat Space Line 8700087sp-26 Bbraun	1	48	48	48	72	3
11	Intrafix Safeset 4063005 Bbraun	1	48	48	48	72	3
12	Leukoplast Hypafix 10cmx5m 71442-04 Bsn Medical	1	48	48	48	72	3
13	Leukoplast Hypafix 15cm X 5m 71442-05 Bsn Medical	1	48	48	48	72	3
14	Leukoplast	1	48	48	48	72	3

No	Item	Packing Time (hours)	Storage Time (hours)	QC Time (hours)	Sending Time (hours)	Lead Time (hours)	Lead Time ((day))
	Hypafix 5cmx5m 71442-03 Bsn Medical						
15	Medigloves Sterile Powder Free Latex 7.0 Onemed	1	144	144	144	168	7
16	Needle Agani 18gx1.1/2inch An*1838r Terumo	1	144	144	144	168	7
17	Opsite Post-Op 6,5 X 5cm 66000708 Smith&Nephew	1	48	48	48	72	3
18	Plesterin Bulat Onemed	1	144	144	144	168	7
19	Skintact Foam Ecg Electrode 35x50mm Fs521 Leonhard	1	48	48	48	72	3
20	Soft Pad Underpad 60x90cm Onemed	2	144	144	144	168	7
21	Suction Connecting Tube 3.6m Plus Yankauer Tip Onemed	2	144	144	144	168	7
22	Surflo Winged- Port 20gx32mm; 5r+Dm2032pd; Terumo	1	144	144	144	168	7
23	Surflo Winged- Port 24gx0.74mm; 5r+Dm2419pd; Terumo	1	144	144	144	168	7
24	Surflo Winged- Port 26gx0.64mm; 5r+Dm2619pd; Terumo	1	144	144	144	168	7
25	Surflo-Wp (Winged & Ported) Iv Cath	1	144	144	144	168	7

No	Item	Packing Time (hours)	Storage Time (hours)	QC Time (hours)	Sending Time (hours)	Lead Time (hours)	Lead Time ((day)
26	22g Biru 0.90x25mm 42ml/Min; 5r+Dm2225pd; Terumo Syringe 10ml (21gx1.5inch) Onemed	2	144	144	144	168	7
27	Syringe 10ml Luer Lock 30215355 Bd Onemed	2	144	144	144	168	7
28	Syringe 1ml 5s+01t2613 Tuberculin Terumo	2	144	144	144	168	7
29	Syringe 3ml (23gx1.25inch) Onemed	2	144	144	144	168	7
30	Syringe 5ml (22gx1.5inch) Onemed	2	144	144	144	168	7
31	Terufusion Solution Administration Set 20drops=1ml Fi*Q300wi Terumo	2	48	48	48	72	3
32	Uniflex 3inch (4.5m X7.5cm) 02314-01 Bsn	1	48	48	48	72	3
33	Uniflex 4inch (4.5mx10cm) 02315-01 Bsn	1	48	48	48	72	3
34	Uniflex 6inch (4.5mx15cm) 02317-01 Bsn	1	48	48	48	72	3
35	Urobag 2000ml With Hanger Onemed	1	144	144	144	168	7

Sources: Processed Data 2025

For Lead Time calculations, it is calculated from activities per hour/day carried out from the time of ordering Purchase Request goods by the procurement section in the Pharmacy Department to the Purchasing Section in making Purchase Orders to the collaborating Vendor section. For the results obtained in this analysis for each item, the time span is 3-7 days, where the minimum is 3 days for local vendor calculations,

and the maximum is 7 days for vendors outside the city. Packing time is calculated as 1 hour for items with a maximum small capacity under 3 Kg, including 3way Stopcock With Tube Onemed, Alcohol Swabs Onemed, E-Care Surgi Glove Sterile Powder Free Latex 6.5 Emp, E-Care Surgi Glove Sterile Powder Free Latex 8.0 Emp, Ecg Electrodes Bluesensor R-00-S/25 Ambu, Foley Cath 2way Nelaton Nort 16ch; 09384-33; Bsn, Foley Cath 2way Nelaton Nort 18ch; 09384-34; Bsn, Gauze Swab Sterile 10x10cm 16ply 5s Sg1016p5 Winner, Gloves Sterile Powder Free Latex 7.5 Stardec, Infusomat Space Line 8700087sp-26 Bbraun, Intrafix Safeset 4063005 Bbraun, Leukoplast Hypafix 10cmx5m 71442-04 Bsn Medical, Leukoplast Hypafix 15cm 66000708 Smith&Nephew, Onemed Round Plasterin, Skintact Foam Ecg Electrode 35x50mm Fs521 Leonhard, Surflo Winged-Port 20gx32mm; Sr+Dm2032pd; Terumo, Surflo Winged-Port 24gx0.74mm; Sr+Dm2419pd; Terumo, Surflo Winged-Port 26gx0.64mm; Sr+Dm2619pd; Terumo, Uniflex 3inch (4.5m 3 kg is Soft Pad Underpad 60x90cm Onemed, Suction Connecting Tube 3.6m Plus Yankauer Tip Onemed, Syringe 10ml (21gx1.5inch) Onemed, Syringe 10ml Luer Lock 30215355 Bd, Syringe 1ml Ss+01t2613 Tuberculin Terumo, Syringe 3ml (23gx1.25inch) Onemed, Syringe 5ml (22gx1.5inch) Onemed, Terufusion Solution Administration Set 20drops=1ml Ti\*Q300wi Terumo. The results of this analysis can be used to estimate how long the process will take from ordering goods, receiving goods to the distribution process so that the procurement department of the Pharmacy Warehouse can estimate the turnover of an item. This can be used as a basis for increasing efficiency where management can reduce lead time to make it more optimal and as a consideration for making future purchases.

### Safety Stock Analysis

Safety Stock is additional stock held outside normal inventory to anticipate fluctuations in customer demand or uncertainty in lead time. The following is the safety stock analysis calculation: Safety Stock = (Max. Daily Sales per day x Max. Lead time) - (Average Product Sales per day x Average Lead Time)

Where: Initial Inventory = EOQ + Safety Stock and Average Inventory = (EOQ/2) + Safety

**Table 3. Safety Stock Analysis Results**

No	Item	Using average (day)	Using average (month)	Using average (in 3 month)	Lead Time	Work hour (month)	Safety Stock
1	3way Stopcock With Tube Onemed	73,27	2247	6.741,	3	22	306,409
2	Alcohol Swabs Onemed	914,11	28032,67	84.098,	7	22	8919,48
3	E-Care Surgi Glove Sterile Powder Free Latex 6.5 Emp	15,33	470	1.410,	7	22	149,545
4	E-Care Surgi Glove Sterile Powder Free Latex 8.0 Emp	9,03	277	831,	7	22	88,1364
5	Ecg Electrodes Bluesensor R-00-	51,43	1577,333	4.732,	3	22	215,091

No	Item	Using average (day)	Using average (month)	Using average (in 3 month)	Lead Time	Work hour (month)	Safety Stock
6	3/25 Ambu Foley Cath 2way Nelaton Nort 16ch; 09384-33; Bsn	2,68	82,33333	247,	3	22	11,2273
7	Foley Cath 2way Nelaton Nort 18ch; 09384-34; Bsn	3,01	92,33333	277,	3	22	12,5909
8	Gauze Swab Steril 10x10cm 16ply 5s 5g1016p5 Winner	57,91	1776	5.328,	3	22	242,182
9	Gloves Sterile Powder Free Latex 7.5 Stardec	10,88	333,6667	1.001,	3	22	45,5
10	Infusomat Space Line 8700087sp-26 Bbraun	4,46	136,6667	410,	3	22	18,6364
11	Intrafix Safeset 4063005 Bbraun	6,89	211,3333	634,	3	22	28,8182
12	Leukoplast Hypafix 10cmx5m 71442-04 Bsn Medical	654,35	20066,67	60.200,	3	22	2736,36
13	Leukoplast Hypafix 15cm X 5m 71442-05 Bsn Medical	133,15	4083,333	12.250,	3	22	556,818
14	Leukoplast Hypafix 5cmx5m 71442-03 Bsn Medical	2.077,72	63716,67	191.150,	3	22	8688,64
15	Medigloves Sterile Powder Free Latex 7.0 Onemed	25,48	781,3333	2.344,	7	22	248,606
16	Needle Agani 18gx1.1/2inch An*1838r Terumo	8,99	275,6667	827,	7	22	87,7121
17	Opsite Post-Op 6,5 X 5cm 66000708 Smith&Nephew	10,43	320	960,	3	22	43,6364
18	Plesterin Bulat Onemed	110,87	3400	10.200,	7	22	1081,82
19	Skintact Foam Ecg Electrode 35x50mm Fs521 Leonhard	67,85	2080,667	6.242,	3	22	283,727
20	Soft Pad Underpad	26,54	814	2.442,	7	22	259

No	Item	Using average (day)	Using average (month)	Using average (in 3 month)	Lead Time	Work hour (month)	Safety Stock
21	50x90cm Onemed Suction Connecting Tube 3.6m Plus Yankauer Tip Onemed	6,79	208,3333	625,	7	22	66,2879
22	Surflo Winged-Port 20gx32mm; 5r+Dm2032pd; Terumo	19,03	583,6667	1.751,	7	22	185,712
23	Surflo Winged-Port 24gx0.74mm; 5r+Dm2419pd; Terumo	32,1	984,3333	2.953,	7	22	313,197
24	Surflo Winged-Port 26gx0.64mm; 5r+Dm2619pd; Terumo	14,48	444	1.332,	7	22	141,273
25	Surflo-Wp (Winged & Ported) Iv Cath 22g Biru 0.90x25mm 42ml/Min; 5r+Dm2225pd; Terumo	14,96	458,6667	1.376,	7	22	145,939
26	Syringe 10ml (21gx1.5inch) Onemed	270,75	8303	24.909,	7	22	2641,86
27	Syringe 10ml Luer Lock 30215355 Bd	111,24	3411,333	10.234,	7	22	1085,42
28	Syringe 1ml 5s+01t2613 Tuberculin Terumo	18,48	566,6667	1.700,	7	22	180,303
29	Syringe 3ml (23gx1.25inch) Onemed	237,37	7279,333	21.838,	7	22	2316,15
30	Syringe 5ml (22gx1.5inch) Onemed	287,68	8822,333	26.467,	7	22	2807,11
31	Terufusion Solution Administration Set 20drops=1ml Pi*Q300wi Terumo	49,51	1518,333	4.555,	3	22	207,045
32	Uniflex 3inch (4.5m X7.5cm) 02314-01	0,54	16,66667	50,	3	22	2,27273

No	Item	Using average (day)	Using average (month)	Using average (in 3 month)	Lead Time	Work hour (month)	Safety Stock
33	Bsn Uniflex 4inch (4.5mx10cm) J2315-01 Bsn	0,46	14	42,	3	22	1,90909
34	Uniflex 6inch (4.5mx15cm) J2317-01 Bsn	1,03	31,66667	95,	3	22	4,31818
35	Urobag 2000ml With Hanger Onemed	8,7	266,6667	800,	7	22	84,8485

Sources: Processed Data 2025

The lowest safety stock result of 1.90909 was for the Uniflex 4inch (4.5mx10cm) 02315-01 Bsn item while the highest result was 8919.48 for the Alcohol Swabs Onemed item. From the results of the calculation analysis, it is obtained how much stock should be available in the warehouse so that there are no vacancies in the warehouse stock resulting in disruption of service to patients. So, the results of this analysis can be used as a benchmark for stock security when there is a sudden demand from the relevant unit, especially if there is a shortage of materials when placing a purchase order.

#### Re-order Point Analysis

Re-order Point is the inventory level at which new orders must be placed to avoid inventory shortages before new orders arrive. The Re-order Point analysis calculation is as follows:  $\text{Re-order Point} = (\text{Average Lead Time} \times \text{Average Daily Sales}) + \text{Safety Stock}$

**Table 4. Re-order Point Analysis Results**

No	Item	Using average (day)	Lead Time	Safety Stock	ROP
1	3way Stopcock With Tube Onemed	73,27	3	306,409	526,224
2	Alcohol Swabs Onemed	914,11	7	8919,48	15318,2
3	E-Care Surgi Glove Sterile Powder Free Latex 6.5 Emp	15,33	7	149,545	256,828
4	E-Care Surgi Glove Sterile Powder Free Latex 8.0 Emp	9,03	7	88,1364	151,365
5	Ecg Electrodes Bluesensor R-00-S/25 Ambu	51,43	3	215,091	369,395
6	Foley Cath 2way Nelaton Norta 16ch; 09384-33; Bsn	2,68	3	11,2273	19,2816
7	Foley Cath 2way Nelaton Norta 18ch; 09384-34; Bsn	3,01	3	12,5909	21,6235
8	Gauze Swab Steril 10x10cm 16ply 5s Sg1016p5 Winner	57,91	3	242,182	415,921

No	Item	Using average (day	Lead Time	Safety Stock	ROP
9	Gloves Sterile Powder Free Latex 7.5 Stardec	10,88	3	45,5	78,1413
10	Infusomat Space Line 8700087sp-26 Bbraun	4,46	3	18,6364	32,0059
11	Intrafix Safeset 4063005 Bbraun	6,89	3	28,8182	49,4921
12	Leukoplast Hypafix 10cmx5m 71442-04 Bsn Medical	654,35	3	2736,36	4699,41
13	Leukoplast Hypafix 15cm X 5m 71442-05 Bsn Medical	133,15	3	556,818	956,275
14	Leukoplast Hypafix 5cmx5m 71442-03 Bsn Medical	2.077,72	3	8688,64	14921,8
15	Medigloves Sterile Powder Free Latex 7.0 Onemed	25,48	7	248,606	426,954
16	Needle Agani 18gx1.1/2inch An*1838r Terumo	8,99	7	87,7121	150,636
17	Opsite Post-Op 6,5 X 5cm 66000708 Smith&Nephew	10,43	3	43,6364	74,9407
18	Plesterin Bulat Onemed	110,87	7	1081,82	1857,91
19	Skintact Foam Ecg Electrode 35x50mm Fs521 Leonhard	67,85	3	283,727	487,271
20	Soft Pad Underpad 60x90cm Onemed	26,54	7	259	444,804
21	Suction Connecting Tube 3.6m Plus Yankauer Tip Onemed	6,79	7	66,2879	113,842
22	Surflo Winged-Port 20gx32mm; Sr+Dm2032pd; Terumo	19,03	7	185,712	318,94
23	Surflo Winged-Port 24gx0.74mm; Sr+Dm2419pd; Terumo	32,1	7	313,197	537,882
24	Surflo Winged-Port 26gx0.64mm; Sr+Dm2619pd; Terumo	14,48	7	141,273	242,621
25	Surflo-Wp (Winged & Ported) Iv Cath 22g Biru 0.90x25mm 42ml/Min; Sr+Dm2225pd; Terumo	14,96	7	145,939	250,635
26	Syringe 10ml (21gx1.5inch) Onemed	270,75	7	2641,86	4537,11

No	Item	Using average (day	Lead Time	Safety Stock	ROP
27	Syringe 10ml Luer Lock 30215355 Bd	111,24	7	1085,42	1864,1
28	Syringe 1ml Ss+01t2613 Tuberculin Terumo	18,48	7	180,303	309,651
29	Syringe 3ml (23gx1.25inch) Onemed	237,37	7	2316,15	3977,74
30	Syringe 5ml (22gx1.5inch) Onemed	287,68	7	2807,11	4820,9
31	Terufusion Solution Administration Set 20drops=1ml Ti*Q300wi Terumo	49,51	3	207,045	355,578
32	Uniflex 3inch (4.5m X7.5cm) 02314-01 Bsn	0,54	3	2,27273	3,90316
33	Uniflex 4inch (4.5mx10cm) 02315-01 Bsn	0,46	3	1,90909	3,27866
34	Uniflex 6inch (4.5mx15cm) 02317-01 Bsn	1,03	3	4,31818	7,41601
35	Urobag 2000ml With Hanger Onemed	8,7	7	84,8485	145,718

Sources: Processed Data 2025

From the analysis results, there is the lowest Re order point value, namely 3.27866 for the Uniflex 4 inch (4.5mx10cm) 02315-01 Bsn item and the highest value for Onemed Alcohol Swabs with a total of 15318.2. From the results of these calculations, it can be concluded that the number of Re-Order Points is lower compared to the total stock before making a purchase, meaning that the stock is still too high but a repurchase has been carried out, which is less efficient for inventory turnover and the amount of stock that will be made. in the warehouse there could be over stock. Meanwhile, a higher calculation could risk stock shortages or even disruption of services in meeting patient treatment needs due to delays in purchasing. This is very important for management to estimate the continuity of services that require stock availability without any shortage of required consumables.

## CONCLUSION

Inventory Management is a control process so that you can place the right orders at the best cost. An effective inventory management process allows organizations to order goods or raw materials correctly, minimize the risk of excess inventory or inventory shortages, and optimize costs (Aisyah & Sumasto, 2020). Inventory inventory management carried out so that information is accurate and relevant is Always Better Control (ABC), Lead Time, Safety Stock, and Re-Order Point.

1. With the Always Better Control (ABC) grouping, it is hoped that we can prioritize consumables according to category by collaborating with suppliers or providing alternative options for replacement consumables to ensure service stock security.
2. Lead Time analysis results are calculated from activities per hour/day carried out from the time of ordering Purchase Request goods by the procurement section in the

Pharmacy Department to the Purchasing Section in making Purchase Orders to the collaborating Vendor section. The results of this analysis can be used to estimate how long the process will take from ordering goods, receiving goods to the distribution process to be able to estimate the turnover of an item and can also be used as a basis for increasing efficiency where management can reduce lead time to be more optimal.

3. The lowest Safety Stock result of 1.90909 was for the Uniflex 4inch (4.5mx10cm) 02315-01 Bsn item while the highest result was 8919.48 for the Alcohol Swabs Onemed item. So the results of this analysis can be used as a benchmark for stock security when there is a sudden demand from the relevant unit, especially if there is a shortage of materials when placing a purchase order.
4. From the analysis results, there is the lowest Re-order point value, namely 3.27866 for the Uniflex 4inch (4.5mx10cm) 02315-01 Bsn item and the highest value for Onemed Alcohol Swabs with a total of 15318.2. From the results of these calculations, it can be concluded that the number of Re-Order Points is lower compared to the total stock before making a purchase, which means that the stock is still too high but a repurchase has been carried out, which is less efficient for inventory turnover and quantity. The stock that will be in the warehouse could be over stock. Meanwhile, for higher calculations, there is a risk of stock shortages or even disruption of services in meeting patient treatment needs due to delays in purchasing.

Overall, the conclusion that can be drawn is that the use of estimated purchase calculations in accordance with the analysis of Always Better Control (ABC), Lead Time, Safety Stock, and Re-Order Point is better implemented than the calculations previously used, because there is the potential for stock shortages and service delays which result in reduced consumer confidence in hospitals due to inconvenience due to delays in services caused by delays in fulfilling supplies from the Pharmacy Installation warehouse and for sustainability, the hospital's credibility regarding operational services will decrease with the loss of patients using hospital services.

## REFERENCES

- Abdullah, S. P. (2025). Gambaran Pengelolaan Obat Di Instalasi Farmasi Rsud Prof. Dr. H. Aloe Saboe Kota Gorontalo. *Nusantara Hasana Journal*, 4(9), 23-29.
- Aisyah, S., & Sumasto, F. (2020). Modul manajemen persediaan.
- Arief, I., & Kartikasari, N. (2021). Evaluasi pengelolaan persediaan farmasi dan bahan medis habis pakai di suatu instalasi farmasi rumah sakit gigi dan mulut swasta kota Jakarta. *Phrase*, 1(1), 9-18.
- Arifianto, D. (2023). Peningkatan Efisiensi Manajemen Persediaan Obat Dan Bahan Medis Habis Pakai Menggunakan Metode EOQ Dan MMSL Di RS A Lamongan. *Cakrawala Repositori IMWI*, 6(6), 2384-2396.
- Arrang, S. T. (2021). *Manajemen Farmasi Manajemen Pengelolaan sediaan Farmasi, Alat Kesehatan dan Medis Habis Pakai (BMHP)*. Penerbit Universitas Katolik Indonesia Atma Jaya.
- Ellitan, L. (2021). The role of marketing mix in building customer satisfaction and loyalty: A theoretical study. *International Journal of Research*, 8(12), 118-129.

- Fadhila, R. (2013). Studi Pengendalian Persediaan Obat Generik Melalui Metode Analisis ABC, Economic Order Quantity (EOQ) dan Reorder Point (ROP) di Gudang Farmasi Rumah Sakit Islam Asshobirin Tahun 2013.
- Farid A, Dinda A, Farida N, Siti N, R, N, Satrio Adi Putra, Nia Yuniarsih (2023) Evaluasi Pengelolaan Limbah Sediaan Farmasi, Alat Kesehatan, Dan Bahan Medis Habis Pakai Di Rumah Sakit
- Fauzi, Y. K. (2024). *Strategi Manajemen Persediaan Obat dan BMHP PT. Pertamedika IHC* (Doctoral dissertation, Universitas Bakrie).
- Hilman, F. (2017). Evaluasi sistem pembelian bahan medis habis pakai di Rumah Sakit Umum Daerah Kota Madiun.
- Huda, S. (2024). Penguatan Mutu Manajemen Inventory Untuk Peningkatan Kinerja Operasional Pengelolaan Bahan Habis Pakai di Bagian Gudang Farmasi Rumah Sakit Islam Sultan Agung Semarang (Master's thesis, Universitas Islam Sultan Agung (Indonesia)).
- Mahmudi, M., Nurhidayat, S., & Najamuddin, Y. (2023). Optimalisasi Manajemen Persediaan Obat dan Bahan Medis Habis Pakai di RSUD Sleman. *Jurnal Abdimas Madani dan Lestari (JAMALI)*, 138-150.
- Malinggas, N. E., Posangi, J., & Soleman, T. (2015). Analysis of Logistics Management Drugs In Pharmacy Installation District General Hospital Dr. Sam Ratulangi Tondano. *JIKMU (Jurnal Ilmu Kesehatan Masyarakat UNSRAT)*, 5(2), 448-460.
- Meigi Mantang, Jimmy Posangi, A Joy M Rattu, (2018) Analisis Proses Perencanaan Pengadaan Sediaan Kebutuhan Farmasi dan Bahan Medis Habis Pakai di Rumah Sakit Umum Daerah Bolaang Mongondow Utara
- Meilani, E., & Lubis, R. (2022). Sistem Informasi Manajemen Inventori Obat dan Bahan Medis Habis Pakai di UPT Puskesmas Ibrahim Adjie Kota Bandung. *Jurnal Penelitian Mahasiswa Teknik dan Ilmu Komputer (JUPITER)*, 2(1), 27-34.
- Moeheriono. (2014). Pengukuran Kinerja Berbasis Kompetensi Edisi Revisi. PT RajaGrafindo Persada.
- Nopiana, N., & Nurwahyuni, A. (2020). Analysis of Cardiovascular Drugs Inventory Control Using ABC-EOQ-ROP-SS Method at Jakarta Islamic Hospital. *JMMR (Jurnal Medicoeticolegal Dan Manajemen Rumah Sakit)*, 9(3), 237-247.
- Nuryadin, A. R., Muchlis, N., & Jafar, N. (2025). Manajemen Pengelolaan Sediaan Obat dan BMHP di RSUD Labuang Baji Makassar Tahun 2024: Management of Drug Supplies and BMHP at Labuang Baji Hospital Makassar Year 2024. *Journal of Aafiyah Health Research (JAHR)*, 6(1), 370-383.
- Panggulu, S. W., Hasanuddin, S., & Noviyanti, W. O. N. (2024). Manajemen Pengelolaan Obat di RSUD Buton Utara. *Jurnal Pharmacia Mandala Waluya*, 3(5), 312-321.
- Prihasti, D. A., & Nugraha, A. A. (2021). Analisis Manajemen Persediaan Dengan Metode Economic Order Quantity (EOQ) Pada Persediaan Bahan Baku
- Rachmawan, B. P. T. (2018). Pengaruh Manajemen Rantai Pasok Terhadap Kinerja Perusahaan. 7(2), 44-68.

- Rahayu, S., Yudi, Y., Rahayu, R., & Yuliana, Y. (2019). Peningkatan Akuntabilitas Pengelolaan Bahan Habis Pakai Sekolah. *Jurnal Karya Abdi Masyarakat*, 3(1), 9-14.  
<https://doi.org/10.22437/jkam.v3i1.7002>
- Rahmayanti, V. (2017). Gambaran sistem distribusi obat dan bahan medis habis pakai (bmhp) di instalasi rawat inap rumah sakit umum kota tangerang selatan tahun 2017 (Bachelor's thesis, UIN Syarif Hidayatullah Jakarta: Fakultas Kedokteran dan Ilmu Kesehatan, 2017).
- Sagala, J. (2022). *Analisis Risiko Persediaan Pada Instalasi Farmasi Rumah Sakit Umum UKI* (Doctoral dissertation, Universitas Kristen Indonesia).
- Sanjaya, I. P. A., & Purnawati, N. K. (2021). *Analisis kinerja manajemen persediaan produk UD. Sinar Jaya Karangasem* (Doctoral dissertation, Udayana University).
- UKM Bydevina. *Indonesian Accounting Literacy Journal*, 1(3), 537-548.  
<https://doi.org/10.35313/ialj.v1i3.3230>
- Wanget, D. T. W., Jan, A. H., & Pondaag, J. J. (2018). Evaluasi Manajemen Operasional Tenaga Kerja Non-Medis Dengan Menggunakan Pendekatan Total Quality Management Di Rumah Sakit Gmim Kalooran Amurang. *Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis dan Akuntansi*, 6(4).
- Wibowo. (2014). *Manajemen Kinerja*. Rajawali Pers.
- Widiyawati, I. E., & Handayani, D. (2022). Gambaran Manajemen Pengelolaan Obat, Alat Kesehatan Dan Bahan Medis Habis Pakai Di Klinik Perisai Husada Bandung. *JEMBA: Jurnal Ekonomi, Manajemen, Bisnis dan Akuntansi*, 1(6), 1067-1078.
- William W.S. Wei published *Time Series Analysis: Univariate and Multivariate Methods*, 2nd edition, 2006
- Yuliana, A. S., Putri, T. N., Handoko, B., & Salim, A. (2024). Analisis Pengendalian Sediaan Farmasi, Alkes, Bahan Medis Habis Pakai Di Instalasi Farmasi. *Jurnal Kesehatan Tambusai*, 5(4), 11013-11021