Analysis Of Drug Distribution System In Hospital Hospital Karanganyar

Waode Suiyati[1*], Sunarto S[2]

[1,2] Midwifery D-III Study Program, Buton Raya Institute of Health and Technology, Indonesia
*Coresponden Author:
E-mail: waodesuyarti11@gmail.com

Abstract.
Inpatient drug services start from prescribing to patients, using drugs during treatment, until the patient returns home, there may be replacements, additional drugs and residual drugs. Although this service process is the responsibility of pharmacists, it is closely related to the role of medical personnel, nurses and the administrative division in hospitals. Research objectives Identify the percentagecompatibility between drugs and stock cards,IdentifyTurnover ratio,Identifypercentage of expired/damaged drug value,Identifythe average time used to serve prescriptions to the hands of patients,Identifypercentage of drugs served at the Karanganyar District Hospital.This research was conducted by following a descriptive research design to analyze the drug distribution system in the Inpatient Hospital of Karanganyar Regency. The data obtained in the form of primary data and secondary data. The research results arePercentage of matches between drugs and card stockis 86.6% with the indicator set is 100% it can be said to have not been effective when compared to indicators,Turn over ratio valueis 9 times turnover, the standard indicator is 8-12x capital turnover in 1 year. This means that the TOR is effective,Percentage of expired/damaged drug valueis 4.5% and the standard indicator of 0% means that it can be said to be ineffective, The average time used to serve prescriptions to the hands of patientsThe long waiting time for compound drugs is in stage II, which is 36.28 minutes, and the waiting time for non-concoction drugs is in stage II, which is 29.42 minutes, with service hours at 14.00-20.00. This is not efficient when compared to the standard value of compound drugs < 30 minutes and non-concoction drugs 15 minutes.The percentage of drugs not served is0.0085% it has not been effective with an indicator of 0%.

Keywords: *Analysis of drug distribution, hospitalization and Hospital.*

I.   INTRODUCTION

Professional staff who are also highly considered in hospitals are pharmacists, whose role is very important, especially in the management and rational use of drugs(PPOSR)through a circle of 10 PPOSR activities which include: selection, planning, procurement, storage, drug distribution, drug use and information, drug administration and information, drug rationality monitoring, drug effectiveness monitoring and drug safety monitoring (Depkes RI, 2004) The hospital pharmacy installation, which is a medical support installation, also plays a role in improving the quality of service to patients. Improving patient-oriented services can be done through drug distribution, where patients are served well, and in a cost-effective manner (Rijadi, 1997).Inpatient drug services start from prescribing to patients, using drugs during treatment, until the patient returns home, there may be replacements, additional drugs and residual drugs. Although this service process is the responsibility of pharmacists, it is closely related to the role of medical personnel, nurses and the administrative division in hospitals (Hassan, 1986).Based on the description of the background, the author is very interested in researching drug distribution considering the large impact of drug distribution, this prompted me to conduct a study with the title of drug distribution system analysis in inpatients at Karanganyar District Hospital.

A.   Formulation of the problem

How is the implementation of the drug distribution system in the Karanganyar Regency Hospital Inpatient which includes:

1.   Percentage match between drugs and card stock?
2.   Turn over ratio value?
3.   Percentage of expired/damaged drug value?

4. The average time used to serve prescriptions to the hands of patients?
5. Percentage of drugs served?
   B. Research purposes
a. Identify percentagecompatibility between drugs and stock cards
b. Identify*Turn over ratio*
c. Identifypercentage of expired/damaged drug value
d. Identifythe average time used to serve prescriptions to the hands of patients
e. Identifypercentage of drugs served at the Karanganyar District Hospital.

II. RESEARCH METHODS

This research was conducted by following a descriptive research design to analyze the drug distribution system in the Inpatient Hospital of Karanganyar Regency. The data obtained in the form of primary data and secondary data. Primary data obtained by direct observation and observation. Secondary data was carried out by looking at and tracing documents that could sharpen the analysis of the drug distribution system in inpatients at the Karanganyar District Hospital in 2011. The primary and secondary data collected were qualitative and quantitative data. Sampling on primary data as much as 5% of the population.The study was conducted at the Karanganyar District Hospital inpatientResearch materials are in the form of two kinds, namely primary data and secondary data. The research tool used in this research is a worksheet.The research variable is a single variable, namely the distribution of drugs in inpatients at Karanganyer District Hospital which includes distribution (storage and distribution).

III. RESULTS AND DISCUSSION

A. Medicine storage

- Percentage of matches between the physical amount of the drug and the card stock

Table 2. Percentage of match between physical amount of medicine and card stock

Total number of medicinal drug items	% compatibility
244	86.6%

Source: primary data processed

From these data, it can be seen that 86.6% of drug items match the physical amount of the drug with the stock card. When compared with standard values (Pudjaningsih, 2005) and according to (WHO, 1993) that the suitability of stock cards with physical conditions should be 100%, it can be said that drug storage in Karanganyar Hospital has not been effective. This is due to a computerized system that does not yet support drug management. According to pharmacists in the field, the existing computerized system still has many shortcomings.

- Percentage of expired and damaged drugs

$$\text{Percentage of damaged/expired drugs} = \frac{\text{Total jenis obat yang rusak/kada luarsa}}{\text{Total jenis obat yang tersedia}} \, x100\%$$

Total types of drugs available $= 244$

Total types of damaged/expired drugs $= 11$

$$\text{Percentage of damaged/expired drugs} = \frac{11}{244} \, x100\% = 4.5\%$$

Information	2011 Budget
Cost of goods sold (Rp)	32,636,733,788
Final stock (Rp)	3,792,007,693
Turn Over Ratio(TOR)	9

The percentage of damaged/expired drugs in Karanganyar Regency Hospital is 4.5%. The magnitude of this value must be a concern for the Pharmacy Installation. The results of this study indicate that the

percentage of expired and damaged drugs has not been efficient where the standard is 0%. One of the causes of damaged/expired drugs is the HR factor and SIM. For example, the clerk is making a transaction, the computer is empty stock, if physically the goods are not there due to wrong storage, then the pharmacy officer will take the warehouse, finally physically the stock becomes available. The discipline of officers in carrying out activities according to procedures is also still lacking, especially storage according to the FIFO and FEFO systems, because officers feel that goods are always spinning quickly,

1. TOR Inventory Value

2. To find out the value of the TOR inventory, a calculation is made by dividing the value of the cost of sales for 1 year by the value of the stock taking at the end of the year. In the assessment, the following results were obtained:

$$TOR = \frac{\text{Harga pokok penjualan tahun 2011}}{\text{Stok akhir tahu n 2011}}$$

Turn Over Ratio Value at IFRSUD Karanganyar Regency in 2011

Stage	Service time	Average number of recipe sheets served	Average waiting time for prescription drugs (minutes)	Average waiting time for non-prepared drugs (minutes)
I	08.00-14.00	37.14	34.57	27.14
II	14.00-20.00	37.57	36.28	29.42
III	20.00-08.00	12.28	26.42	20

Turn Over Ratio Value of Pharmacy Installation at Karanganyar District Hospital is effective. The Turn Over Ratio value of the Pharmacy Installation at the Karanganyar District Hospital is 9 times, the indicator according to Pudjaningsih (1996) and WHO (1993) is 8-12x/year, it can be said to be effective.

B. Drug Distribution

The average length of waiting time used by the Pharmacy Installation of the Karanganyar District Hospital to select inpatient prescription services from the time the prescription is received by the Pharmacy Installation officer until it is handed over to the patient/patient family is divided into three stages. The first stage in which the average number of prescription sheets served is 37.14 prescription sheets (LR), starting from the prescription arriving at 08.00-14.00, then the average time required to complete a prescription drug concoction is 34.57 minutes while for Non-concoction drugs take an average of 27.14 minutes. In the second stage, the number of prescription sheets received was 37.57 prescription sheets (LR), starting from the prescription arriving at 14.00-20.00, then the average time required to complete a prescription drug concoction was 36,

Of the three stages above, the longest waiting time for compounded drugs is in Phase II, which is 36.28 minutes, and the waiting time for non-combined drugs is 29.42. There are several problems that cause long waiting times, namely late doctor visits, variations in the number of patients and prescriptions served. long service time and the desire of officers to stop briefly during service hours. According to the Pudjaningsih Indicator, a good waiting time for compounded drugs is 30 minutes, while the waiting time for non-concoctioned drugs is less than 15 minutes. This in stages I, II and III shows the inefficiency of waiting time for compounded and non-concoctioned drugs.

Percentage of unserved inpatient prescriptions

Value Description	
Number of prescriptions issued inpatient	196,714
Number of prescriptions served by pharmacy installation	196.691
Number of unserved recipes	23
Average percent of unserved recipes	0.0085%

That the percentage of prescriptions that are not served is 0.0085% from 196.714 the number of prescriptions that are served is 196.691 which means that as many as 23 recipes are not served in 2011. According to Pudjaningsih and WHO the indicators used to serve prescriptions so that prescriptions are served or not out of the house sick is 0%. So in reality what happens in the field that there are about 0.0085% of prescriptions that are not served, this can happen because:

1.   Patient requests not to redeem all drugs in advance for reasons of cost
2.   Drug supplies in pharmacies and warehouses are empty or
3.   Doctors write prescriptions with drug compositions outside of the applicable drug standardization so that the drug is not available at the hospital.

IV.   CONCLUSION

Based on the research data that has been analyzed, the following conclusions can be drawn:

1.   Percentage of matches between drugs and card stockis 86.6% with the indicator set is 100% it can be said that it has not been effective when compared to the indicators

2.   Turn over ratio valueis 9 times turnover, the standard indicator is 8-12x capital turnover in 1 year. This means that TOR is effective

3.   Percentage of expired/damaged drug valueis 4.5% and the standard indicator of 0% means that it can be said to be ineffective

4.   Average time used to serve prescriptions to patientsThe long waiting time for compound drugs is in stage II, which is 36.28 minutes, and the waiting time for non-concoction drugs is in stage II, which is 29.42 minutes, with service hours at 14.00-20.00. This is not efficient when compared to the standard value of compound drugs < 30 minutes and non-concoction drugs 15 minutes.

5.   The percentage of drugs not served is0.0085% it has not been effective with an indicator of 0%.

REFERENCES

[1]   [Depkes RI]. 1990. Concepts and Principles of Hospital Management 2, Directorate of Special and Private Hospitals, Director General of Medical Services. Jakarta

[2]   [Depkes RI]. 1991. Indonesian Hospital Pharmacy. Guidelines for Good Hospital Pharmacy Management and Services. RSDS. Surabaya.

[3]   [Depkes RI]. 1996. Director General of Medical Services. Hospital Service Standards. Fourth Printing. Jakarta.

[4]   [Depkes RI]. 2002. technical guidelines for the procurement of public drugs and health supplies. Director General of Pharmaceutical Services and Medical Devices . Indonesian Ministry of Health, Jakarta.

[5]   [Depkes RI]. 2004. Director General of Medical Services. Hospital Service Standards.Dep. case. R1.Jakarta.

[6]   [Depkes RI]. 2008. Hospital Pharmacy Lecture Materials I. Pharmacist Profession Program, Faculty of Pharmacy, Gadjah Mada University. Yogyakarta

[7]   [Depkes RI]. 2019. Based on the Law of the Republic of Indonesia (UU RI) No. 30/2019.

[8]   [Depkes RI]. 2010. Karanganyar Regional General Hospital Profile.www. rsisyarsis. com(22 September 2011).

[9]   [Depkes RI]. Director General of Medical Services. 1990. Hospital Management Concepts and Principles 2. Directorate of Special and Private Hospitals. Jakarta.

[10]   Griffith. John R. 1987. The Well-Managed Community Hospital. Health Administration Press. Michigan.

[11]   Hassan. WE Jr. 1986. Hospital Pharmacy fifth edition. Leah & Febiger. Philadelphia

[12]   Indonesian Ministry of Health. 2010. Pharmaceutical Management Training Materials in District/City Pharmacy Installations. Directorate General of Pharmaceutical and Medical Devices Development. Jakarta.

[13]   Kotler. P. 1987. Marketing for Health Care Organizations. Precentice-Hall. Inc. Englewood Clifts. New Jersey 07632.

[14]   [Menkes RI]. 1992. Decree of the Minister of Health of the Republic of Indonesia No. 983/Menkes/SK/XI/1992.

[15]   [Menkes RI]. 2004. Decree of the Minister of Health of the Republic of Indonesia No. 1197/Menkes/SK/X/2004.

[16]   Pudjaningsih. D. 1996, Development of Efficiency Indicators of Drug Management in Hospital Pharmacy, Thesis, Postgraduate Program, Faculty of Medicine, Gadjah Mada University, Yogyakarta.

[17]   Quick. JD. hume. M. Rankin. JR. O'Connor. RW. 1997. Managing Drug Supply. Second Edition. Revised and Expanded. Coumarin Press. West Hartford.

[18]   Rijadi. S. 1997. Inpatient Unit Management. Working Group for the Study of Health Services, UI Health Research Center. Jakarta.

[19]   Spirit. T. 2007. Evaluation of Efficiency of Drug Storage Management and Distribution of Inpatient Drugs at the Pharmacy Installation of RSUD Karawang, Postgraduate Program, Faculty of Pharmacy, Gadja Mada University, Yogyakarta.

[20]   Sugiyono. PD 2010. Statistics for Research. Alphabeta Publishers, Bandung

[21]   Siregar. Ch. JP. and Amalia. L.. 2004. Hospital Pharmacy. Theory and Application. EGC Medical Book Publisher. Jakarta.

[22]   *WHO*. 1997. Action Program on Essential Drugs: Managing Drug Supply The Selection. Procurement. Distribution. and of Pharmaceuticals. Second Edition. revised and expanded. United States of America by Kumarian press Ine. Wets Hartford. Connecticut. USA.