

Evaluation of The Quality of Pharmaceutical Care and Identification of Human Resources and Infrastructure in The Pharmacy Installation of Hospital in Sukoharjo in 2023

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Abstract

The fulfillment of pharmaceutical Minimum Service Standards (MSS) an important role in improving the quality of pharmaceutical services and public health. This study aims to evaluate the quality of pharmaceutical care following the pharmaceutical minimum service standards as well as the identification of human resources (HR) and infrastructure facilities at the Hospital Pharmacy Installation in Sukoharjo. This type of research is descriptive non-experimental. Samples in the study included prescriptions and patients. Samples in the study included prescriptions and patients. MSS data on indicators of dispensing time for drug services, indicators of prescription suitability with the formulary and patient satisfaction analyzed based on Menkes RI Number 30 of 2022. Data on HR and infrastructure were analyzed based on Menkes RI Number 56 of 2014 and Menkes RI Number 72 of 2016. The results showed the indicator dispensing time does not meet the standard because dispensing time ≤ 60 minutes is 45.66% (less than standard of 80%). The results on the indicator of the suitability of prescriptions with the formulary are 89.5% ($\geq 80\%$), and the patient satisfaction indicator is 91.25% ($> 76.61\%$) so it has met the standard. The results of HR identification based on the classification of the number of pharmaceutical personnel have met the standard. However, classification based on pharmacist workload and identification of facilities and infrastructure does not meet the standard.

Keywords: Facilities, Infrastructure, Human Resources, Pharmaceutical Care, Quality Evaluation.

INTRODUCTION

Pharmaceutical care is important to evaluate to improve public health and welfare. Pharmaceutical care is defined as a direct and responsible service activity to patients related to pharmaceutical preparations, to achieve definite results to improve the quality of life of patients (Menkes RI, 2021).

In this case, pharmaceutical care requires the existence of Minimum Service Standards (MSS) which are used as guidelines for pharmaceutical personnel in carrying out planning, implementation, control, supervision, and accountability in the pharmaceutical care section of the hospital (Menkes RI, 2008).

Based on the results of Okyaviani *et al.*, (2019), MSS indicators that have met the standard are the absence of drug administration errors, dispensing time for prescription services, and customer

satisfaction levels. However, the indicator of the suitability of prescription writing with the hospital formulary still does not meet the minimum service standards with a percentage of 95.95%.

The research of Pontoan *et al.*, (2020), conducted at the Pharmacy Installation of the Cilandak Jakarta Marine Hospital, shows that the level of patient satisfaction with pharmaceutical care is generally unsatisfactory so pharmaceutical care still needs to be improved because the five dimensions have negative gap values.

The research of Hidayah *et al.*, (2021), regarding drug service time also does not meet the standards, because the average dispensing time for extemporaneous drugs is 71 minutes and the non-extemporaneous drug is 51 minutes. This result is not in line with the minimum service standards required by Menkes RI No. 129 / Menkes / SK / II / 2008.

This is in line with research conducted by Puspita *et al.*, (2018), that the dispensing time for drug services that have not met the standards is influenced by human resource factors (HR) in terms of the quantity of pharmaceutical personnel in the hospital and adequate facilities and infrastructure factors. So it is necessary to evaluate the fulfillment of human resources, facilities, and infrastructure in hospital pharmaceutical installations.

This study was conducted in one of the hospitals in Sukoharjo that had never evaluated the fulfillment of pharmaceutical service standards. Therefore, the purpose of this study was to evaluate the quality of pharmaceutical care following the guidelines of the Pharmaceutical Minimum Service Standards (MSS) and the identification of human resources to determine the number of pharmaceutical personnel, and the identification of infrastructure and facilities contained in the Hospital Pharmacy Installation in Sukoharjo in accordance with applicable standard guidelines.

RESEARCH METHODOLOGY

This study is a non-experimental study with observational research and descriptive analysis. This study has also obtained evidence of ethical feasibility from the Health Research Ethics Commission (KEPK) of Dr. Moewardi Hospital number 1528/VIII/HREC/2023 with the research implementation period in August-October 2023. The instruments used were observation sheets to record the dispensing time for prescription services obtained from the IT system in Sukoharjo Hospital, observation sheets to record the suitability of prescriptions with the formulary, and identification of human resources and infrastructure in the Hospital Pharmacy Installation in Sukoharjo. In addition, a questionnaire sheet was used to record the satisfaction of patients who received pharmaceutical care.

The satisfaction level questionnaire contains 26 statements consisting of 5 dimensions tangible, reliability, responsiveness, assurance, and empathy. The

statements in the questionnaire were quoted and modified from previous research (Pratiwi, 2011; Puspitasari *et al.*, 2021).

a. Validity and Reliability Test

This study tested the questionnaire with validity and reliability tests using 30 respondents. The validity test results showed that all statement items in the questionnaire had a calculated R value >0.361 so all statements were declared valid. The reliability test results also showed that the total Cronbach's Alpha was 0.932 (>0.6) so the questionnaire was declared reliable.

b. Population and Sample

The population used was outpatient prescription sheets and patients or visitors who received pharmaceutical services at the Hospital Pharmacy Installation in Sukoharjo. The sampling technique was purposive sampling, with the following inclusion criteria:

1. Patient inclusion criteria for patient satisfaction indicators:
 - a. Patients or visitors who purchase medicine at pharmaceutical installation with a frequency of 1 time with the condition that they have received pharmaceutical care, or > 1 time.
 - b. Aged ≥ 17 years (Mutmainah *et al.*, 2022 dalam Hurlock, 2006).
 - c. No mental illness and willing to be a respondent.
2. The criteria for inclusion of recipes in the indicator of conformity with the formulary is that the recipe is legible by the researcher.

c. Sample Calculation

1. Indicators of prescription suitability with formulary and medicine service time.

The total population in 1 month is known to be 3220 outpatient prescriptions. So the Slovin formula is used to determine the number of samples in 1 month.

$$n = \frac{N}{1+N(e)^2} \quad (1)$$

$$n = \frac{3220}{1+3.220(0.1)^2}$$

$$n = 96.98 \text{ or } 97 \text{ sample}$$

Description :

n = sample size

N = known population

e = standard error value of 10%

The minimum number of samples used is 97 outpatient prescription sheets per 1 month. In this study, a sample of 165 prescription sheets was obtained per month, so the total sample in 3 months of research amounted to 495 prescription sheets.

2. Patient satisfaction indicators

The number of samples in 1 month for patient satisfaction indicators is at least 50 respondents, so for 3 months this study took a sample of 150 respondents.

d. Data Analysis

1. Pharmaceutical Minimum Service Standards (MSS)

The MSS data on the indicator of prescription conformity with the formulary and patient satisfaction was analyzed based on Menkes RI No.30 of 2022 with a statement that the percentage of prescription conformity with the formulary is $\geq 80\%$ and patient satisfaction is $\geq 76.61\%$. Meanwhile, the indicators of dispensing time for outpatient ≤ 60 minutes at least 80%.

a. Indicator of dispensing time for drug service

Calculation of dispensing time using the average formula (mean) (Maftuhah & Susilo, 2016) as follows:

$$\bar{X} = \frac{\sum X}{n} \quad (2)$$

Description :

\bar{X} = average dispensing time

$\sum X$ = total service time

n = number of samples

b. Indicators of prescription suitability to the formulary

Calculation of the percentage of suitability of recipes with the formulary (Menkes RI, 2020) which is :

$$\% = \frac{\text{number of prescriptions as per formulary}}{\text{total of all recipes}} \times 100\%$$

c. Patient satisfaction indicator

The patient satisfaction questionnaire uses a scoring technique with a Likert scale. Then

the calculation of the respondent's answer with the following formula (Puspitasari et al., 2021) :

$$\% = \frac{\sum \text{total score of respondents}}{\sum \text{maximum score}} \times 100\% \quad (3)$$

The value provisions for each respondent's answer are that the answer is very dissatisfied given a value of 1, the answer is dissatisfied given a value of 2, the answer is less satisfied given a value of 3, the answer is quite satisfied given a value of 4, and the answer is very satisfied given a value of 5. The classification of the level of patient satisfaction is as follows:

- 1) 0-20% satisfaction level is very dissatisfied
- 2) 21-40% dissatisfaction level
- 3) 41-60% level of satisfaction less satisfied
- 4) 61-80% moderately satisfied
- 5) 81-100% very satisfied satisfaction level

2. Human resource

The data from the identification of human resources were analyzed based on Menkes RI Number 72 of 2016 which states that pharmaceutical installations must have pharmacists and pharmaceutical technical personnel in accordance with the workload, as well as other supporting staff to achieve the objectives of the pharmaceutical installation. The requirements for the head of the pharmaceutical installation are to have experience working in a pharmaceutical installation for at least 3 years, and the pharmacist's workload is to serve patients with a ratio of 1 pharmacist to 50 patients (Menkes RI, 2016).

Based on Menkes RI Number 56 of 2014 regarding the number of pharmaceutical personnel in a class C hospital, it consists of at least 1 pharmacist as the head of the pharmaceutical installation, 2 pharmacists in the outpatient department assisted by at least 4 pharmacy technicians, 4 pharmacists in the inpatient department assisted by at least 8 pharmacy technicians, and 1 pharmacist as the coordinator of reception, distribution and production who concurrently provides clinical pharmacy services in inpatient or outpatient

settings and is assisted by pharmacy technicians (Menkes RI, 2014).

3. Facilities and infrastructure

Data on facilities and infrastructure in the pharmaceutical installation were analyzed based on Menkes RI Number 72 of 2016 which states that the implementation of pharmaceutical care in hospitals must have facilities and equipment that meet the applicable pharmaceutical regulations and legislation (Menkes RI, 2016).

RESULT AND DISCUSSION

a. Dispensing Time for Medicine Service

Dispensing time for prescription service is the calculation of the amount of time required by the patient when the patient starts submitting prescriptions until receiving drugs from the pharmaceutical installation (Yani et al., 2022). The sample dispensing time was 495 prescriptions in 3 months, consisting of 247 prescriptions for non-extemporaneous drugs and 248 for extemporaneous drugs (**Table 1**).

Table 1. Distribution of Dispensing Time for Drug Services in Hospital Pharmacy Installations in Sukoharjo

No.	Indicator	Extemporaneous Drugs	Non-extemporaneous Drugs	Total
1	Number of samples	248	247	495
2	Mean ± SD (minutes)	97 ± 68.43	56 ± 38.92	76.5 ± 53.68
3	Minimum Service Standard	80% dispensing time ≤ 60 minutes		
4	According to standards	97 (39%)	169 (68.42%)	266 (45.66%)
5	Does not meet standards	151 (61%)	78 (31.58%)	229 (46.26%)

Based on **Table 1**, the average dispensing time for non-extemporaneous drug services is 56 minutes, and for extemporaneous drug services is 97 minutes. Based on these results, the dispensing time indicator at the Hospital Pharmacy Installation in Sukoharjo based on Menkes RI, 2022, the dispensing time that meet the standard (≤ 60 minutes), there are 266 (45,66%) prescriptions. Based on these results, most of the dispensing time don't meet the standards because less than 80% of the dispensing time is more than 60 minutes.

Based on research by Maftuhah and Susilo, (2016) the cause of dispensing time for drug services to be long is due to inadequate human resources (HR), in this case, the number of pharmaceutical personnel affects the speed of prescription services in the pharmaceutical installation. This statement is in accordance with the results of the identification of human resources in this study, that with the number of pharmacists in the outpatient pharmaceutical installation of 4 people, they must serve 600 patients per day, which means that the workload of each pharmacist is to serve 150 patients per day.

Long prescription services can reduce the level of patient satisfaction, so it is necessary to re-evaluate the problem of long dispensing

times to increase patient satisfaction in the pharmaceutical installation (Nurjanah et al., 2016).

b. Prescription Suitability with Formulary

The hospital formulary is a list of drugs and drug use policies agreed upon by the medical staff, and compiled by the pharmacy and therapy team established by the hospital leadership (Menkes RI, 2020). Prescriptions were evaluated for suitability based on the formulary of the Hospital in Sukoharjo in 2022, with the validity period of this formulary being 3 years. The number of samples in the prescription conformity indicator with this formulary is 495 outpatient prescription sheets with a total number of R / (prescriptions) of 1681.

Table 2. Distribution of Prescription Suitability with Hospital Formulary in Sukoharjo

Formulary compliance	Total R (recipe)	Percentage (n = 1681)	MSS
Compliant prescription	1505	89.5 %	100%
Non-compliant prescription	176	10.5 %	

Based on **Table 2**, it shows that the percentage of prescription conformity with the hospital formulary in Sukoharjo is 1505 drugs (89.5%). This shows that the indicator of the suitability of prescriptions with the Hospital formulary in Sukoharjo has met the minimum service standard of $\geq 80\%$ formulary (Menkes RI, 2022). Based on the observations in this study, most of the drugs that were not following the formulary were dimenhydrinate tablets, simvastatin tablets, and betamethasone ointment 0.1%.

Based on research conducted by Nabilah *et al.*, (2023), Based on the doctors' opinions, prescribing other drugs tailored to the patient's illness has become a habit, causing the prescribed drugs to be outside the drugs listed in the hospital formulary. The various impacts that occur when prescribing drugs that do not follow the formulary are increased medical costs. In this case, one of the objectives of establishing a hospital formulary is to control the quality of treatment. If a doctor prescribes a drug that is not in accordance with the formulary and the hospital does not procure the drug, it will harm the patient. Therefore, to improve the suitability of prescriptions with the hospital formulary, it is necessary to evaluate the selection and procurement of drugs in the hospital.

c. Patient Satisfaction Respondent Characteristics

The characteristics of the respondents are an overview of the respondent data obtained in the study (Andrian *et al.*, 2019). Based on the data in **Table 3**, the highest number of respondents was female with a total of 113 respondents (75.3%). Gender is not related to the assessment of the quality of a service. Both male and female respondents have high expectations for the quality of health services received (Ruditya and Chalidyanto, 2015). In the age characteristics, the percentage of the most age range is at the age of 26-35 years (28%), this is because this age range is categorized as productive age (Winyanti & Fariana, 2023). At a productive age, a person will tend to demand and have high

expectations of the quality of pharmaceutical care that will be obtained (Mahendro *et al.*, 2022).

Table 3. Distribution of Respondents' Characteristics of Pharmaceutical Care at the Hospital Pharmacy Installation in Sukoharjo

Respondent Characteristics	Frequency	Percentage (%)
Gender		
a. Male	37	24.7%
b. Female	113	75.3%
Age		
a. 17-25 years	10	6.7%
b. 26-35 years	42	28%
c. 36-45 years	38	25.3%
d. 46-55 years	26	17.3%
e. 56-65 years	22	14.6%
f. > 65 years	12	8%
Education		
a. Not attending school	4	2.7%
b. Elementary school	11	10.6%
c. Junior high school	20	13.3%
d. Senior high school	55	36.7%
e. Undergraduate/ Graduate program	60	40%
Visit period		
a. First times	20	13.3%
b. 2-5 times	56	37.3%
c. More than 5 times	74	40%
Purpose of taking the drug		
a. For individual	89	59.3%
b. For family	61	40.7%

In education characteristics, the highest number is from tertiary institutions such as diploma, bachelor, and master with 60 respondents (40%). A person with higher education has broader knowledge, so the demand for the quality of health services will also increase (Ruditya & Chalidyanto, 2015).

In the characteristics of the period of redeeming drugs, the patients who redeemed drugs > 5 times were 74 respondents (49.3%). The more periods the patient has in obtaining pharmaceutical services, the more the patient understands the advantages and disadvantages of the service, as well as the more able to understand the situation and conditions of the

services provided by the pharmaceutical installation (Mahendro *et al.*, 2022).

Most patients who redeemed drugs for themselves were 89 respondents (59.3%). This shows that most patients who redeem drugs at the Hospital Pharmacy Installation in Sukoharjo are patients who have previously received services from hospitals in Sukoharjo.

Patient Satisfaction Questionnaire

The level of patient satisfaction is the result of comparing the perception value of patients who get pharmaceutical care with the patient's expectations of pharmaceutical care at the Hospital Pharmacy Installation in Sukoharjo. The patient satisfaction level questionnaire in this study was measured from 5 dimensions, namely tangible, reliability, responsiveness, assurance, and empathy.

According to Mahendro *et al.*, (2022), the tangible dimension of a health service can be seen from the competence of health workers, as well as facilities and infrastructure in healthcare facilities that can facilitate services. The tangible dimension is the real (physical) form of service that will be obtained by the patient. The results of the distribution of patient satisfaction on the tangible dimension are shown in **Table 4**, namely with an average percentage of 93.2%. Based on these results, the level of respondent satisfaction in the tangible dimension is classified as very satisfied.

The distribution results on the reliability dimension are shown in 4. Item number 4 regarding the officer's ability to explain the side effects of drugs has the lowest percentage value of 80.4% (moderately satisfied category). This is in line with research conducted by Puspitasari *et al.*, (2021), which states that pharmaceutical officers when handing over drugs to patients do not explain the side effects of drugs. So in this case, pharmaceutical officers should need to explain the side effects of drugs so that the therapy undergone by patients can achieve its goals. Even so, the overall average percentage in the reliability dimension is in the very satisfied category, namely 90.66%.

The responsiveness dimension can be seen from the ability of pharmacy officers to provide responsive services such as the officer's reaction to complaints submitted by patients related to the health services provided (Mahendro *et al.*, 2022). The results of the questionnaire on the responsiveness dimension are shown in **Table 4**, having the lowest value on item number 1 with a percentage of 79.73% with a fairly satisfied classification. This is in line with the results of direct observations from several patients who said that the dispensing time required when redeeming drugs was indeed quite long due to the large queue. However, some of them also said that they felt tolerant of this because the pharmaceutical services provided were very satisfying. Nevertheless, the total percentage in the responsiveness dimension is 86.96%, with a very satisfied classification.

According to Engkus, (2019), the assurance dimension is a form of knowledge, politeness, and the ability of pharmaceutical personnel to foster trust from customers. The results of the distribution of the Assurance dimension in this study can be seen in 4, with an average percentage of 93.13% or classified as very satisfied. The highest value is seen from item number 3 regarding patient satisfaction because the medicine is neatly wrapped with a satisfaction percentage value of 94.26%.

The empathy dimension is a form of pharmaceutical staff's concern in providing attention to patients, such as attention to patient complaints, service to patients regardless of social status, and understanding patient needs (Yuliani *et al.*, 2020). The results of satisfaction with the empathy dimension are shown in **Table 4**, with an average percentage of 92.29%, which means that the respondents' assessment of the empathy provided by pharmaceutical officers is classified as very satisfied.

The recapitulation results for each dimension are shown in the **Table 5**, the lowest value is in the responsiveness dimension (86.96%). Although included in the very satisfied category, the responsiveness

of pharmaceutical officers in providing services needs to be improved, especially in the speed of drug services. The level of patient satisfaction in each dimension of satisfaction obtained an overall average of 91.25% with a very satisfied classification. So the level of

patient satisfaction with pharmaceutical care at the Hospital Pharmacy Installation in Sukoharjo has met the minimum pharmaceutical service standards on patient satisfaction indicators with a standard level of satisfaction $\geq 76.61\%$ (Menkes RI, 2022).

Table 4. Distribution of Respondents' Satisfaction Level

Dimension	No	Statement	Acquisition score	Maximum score	%	Classification
Tangible	1	The waiting room is clean and tidy	713	750	95.06	Very satisfied
	2	The number of seats in the waiting room is sufficient	674	750	89.86	Very satisfied
	3	The pharmacy officers are neat and attractive	701	750	93.47	Very satisfied
	4	AC available	705	750	94	Very satisfied
	5	Ease of access to the location of the pharmacy installation	702	750	93.6	Very satisfied
Average					93.2	Very satisfied
Reliability	1	The pharmacy officers provide information on how to use the medicine	707	750	94.26	Very satisfied
	2	The pharmacy officers provide information on the rules of use of the medicine	701	750	93.46	Very satisfied
	3	The pharmacy officers provide information about the purpose of the medication	690	750	92	Very satisfied
	4	The pharmacy officers explain about the side effects of the drugs given	603	750	80.4	Quite satisfied
	5	Drug information services use language that is easily understood by patients	699	750	93.2	Very satisfied
Average					90.66	Very satisfied
Responsiveness	1	The speed of officers in serving medicine	598	750	79.73	Quite satisfied
	2	The pharmacy officers have good knowledge and skills at work	681	750	90.8	Very satisfied
	3	Medication is given on time by pharmacy officers	647	750	86.26	Very satisfied
	4	The pharmacy officers provide written drug information if the patient does not understand	674	750	89.86	Very satisfied
	5	The pharmacy officers can provide solutions to patient complaints	661	750	88.13	Very satisfied
Average					86.96	Very satisfied
Assurance	1	The pharmacy officers provide the right medicine according to the patient's needs (according to the doctor's prescription)	699	750	93.2	Very satisfied
	2	The pharmacy officers ensure the patient understands the information correctly	690	750	92	Very satisfied
	3	The pharmacy officers wrapped the medicine neatly	707	750	94.26	Very satisfied
	4	Medication is available in full in the pharmacy installation	692	750	92.26	Very satisfied
	5	The pharmacy officers ensure the correctness of the drug recipient	703	750	93.73	Very satisfied
	6	The pharmacy officers are honest and trustworthy	700	750	93.33	Very satisfied
Average					93.13	Very satisfied

Table 4. Continued

Dimension	No	Statement	Acquisition score	Maximum score	%	Classification
Empathy	1	Services are provided to every patient regardless of social status	696	750	92.8	Very satisfied
	2	The pharmacy officers provide opportunities for patients to ask questions and submit complaints.	676	750	90.13	Very satisfied
	3	The pharmacy officers are friendly and polite when serving patients	699	750	93.2	Very satisfied
	4	The pharmacy officers serve patients according to the queue	693	750	92.4	Very satisfied
	5	Communication between patients and pharmacy officers is good	697	750	92.93	Very satisfied
Average					92.29	Very satisfied

Table 5. Results of recapitulation of patient satisfaction in each dimension of patient satisfaction

No.	Dimensions	Satisfaction (%)	Classification
1	<i>Tangible</i>	93.2%	Very satisfied
2	<i>Reliability</i>	90.66%	Very satisfied
3	<i>Responsiveness</i>	86.96%	Very satisfied
4	<i>Assurance</i>	93.13%	Very satisfied
5	<i>Empathy</i>	92.29%	Very satisfied
Average		91.25%	Very satisfied

d. Identification of Human Resources

One of the hospitals in Sukoharjo in this study is a hospital with type C class. The following are the results of the distribution of human resources of pharmaceutical personnel in the Hospital Pharmacy Installation in Sukoharjo.

Table 6. Distribution of Human Resources of Pharmacy in Hospitals in Sukoharjo

No.	Distribution	Pharmacist	Pharmacy technicians
1	Outpatient department	4	17
2	Inpatient section	6	23
3	Emergency Department	1	3
4	ICU Section	1	4
5	Central depot	1	-
6	Warehouse	1	-
7	Central Surgical Installation (CSI)	1	3
Total		15	50

Based on **Table 6**, there are 4 pharmacists in the outpatient department, 6 inpatient departments, and 1 pharmacist in other departments. In addition, the number of pharmacy technicians in the outpatient and

inpatient departments was 17 and 23 people respectively. Based on the results of observations in this study, there was 1 pharmacist as the head of the hospital pharmacy installation who had a work period of > 3 years, and there were supporting technicians or computer operators, administrative staff, and laborers/assistant executives. Then the results of the identification of human resources are in accordance with the regulation of the Menkes RI Number 56 of 2014 concerning classification and licensing in type C hospitals (Menkes RI, 2014). However, the workload classification of pharmacists in the outpatient department has not met the standards based on regulation of the Menkes RI number 72 of 2016, which states that the workload for every 1 pharmacist in the outpatient department is to serve 50 patients (Menkes RI, 2016), while based on observations the number of pharmacists for the outpatient unit is 4 people with an average number of outpatients of 600 patients per day, so the workload for each pharmacist is to serve 150 outpatients.

e. Identification of Facilities and Infrastructure

Based on the regulation of the Menkes RI Number 72 of 2016, the implementation of pharmaceutical care in hospitals must be supported by facilities and infrastructure that meet the provisions of the applicable pharmaceutical legislation. The results of the identification of facilities at the pharmacy installation of hospitals in Sukoharjo shown in **Table 7**, the parts that are not available are the production room, pharmaceutical laboratory, non-sterile production room, and toilet facilities for pharmaceutical staff. In **Table 8**, regarding the distribution of infrastructure, the equipment that is not available at the pharmacy installation of hospitals in Sukoharjo is production equipment. Based on direct observation, there are no production activities in the pharmacy installation of hospitals in Sukoharjo. In addition, there is no toilet specifically for pharmaceutical staff so that the toilet facilities join the patients. So based on the identification results, the facilities and infrastructure at the pharmacy installation of

hospitals in Sukoharjo have not fully met the standard provisions regarding facilities and infrastructure based on Menkes RI Number 72 of 2016. Therefore, the pharmacy installation of hospitals in Sukoharjo needs to fulfill facilities and infrastructure in accordance with applicable regulations. According to Yusmainita, 2015 in Madania *et al.*, (2023), the availability of sufficient facilities and infrastructure is a support for the implementation of good hospital pharmacy.

This study is expected to help the hospital in making improvements and evaluations in the implementation of MSS in the field of pharmacy as well as the fulfillment of human resources and infrastructure in the Hospital Pharmacy Installation in Sukoharjo, and provide benefits for hospitals in improving the quality of pharmaceutical services in accordance with pharmaceutical service standards in hospitals. The limitation of this study is that there has been no evaluation of the medication error indicator, which is one of the indicators in the minimum service standards for pharmacy in hospitals.

Table 7. Distribution of Facilities in Hospital Pharmacy Installations in Sukoharjo

No.	Facility	Outpatient	Inpatient	Emergency Room	ICU	More
A. Main Facilities						
1.	Office space	✓	-	-	-	
2.	Storage room for pharmaceutical preparations, medical devices, and consumable medical materials	✓	✓	-	-	
3.	Distribution room for pharmaceutical preparations, medical devices, and consumable medical materials	✓	-	-	-	
4.	Counseling room	✓	-	-	-	
5.	Drug information service room	✓	-	-	-	
6.	Production space that has met the criteria of production requirement	-	-	-	-	
7.	Aseptic dispensing room	-	-	-	-	Aseptic dispensing room
8.	There is a pharmacy laboratory	-	-	-	-	
9.	Non-sterile production room	-	-	-	-	
10.	Cytostatic preparation handling room	-	-	-	-	Handling Cytostatic
11.	Cytostatic preparation handling room	✓	-	-	-	
12.	Parenteral nutrition storage room	✓	✓	-	-	

Table 7. Continued

No.	Facility	Outpatient	Inpatient	Emergency Room	ICU	More
B. Supporting Facilities in Service Activities						
1.	Patient waiting room	✓	✓	✓	✓	
2.	Prescription document/archive storage room	✓	✓	✓	✓	
3.	Storage room for documents/archives of prescriptions, pharmaceutical preparations, medical devices, and consumable medical materials that have been damaged	✓	✓	✓	✓	
4.	Medicine storage room in the treatment room	-	✓	-	-	
5.	toilet facilities for pharmacy staff	-	-	-	-	

Table 8. Distribution of Infrastructure in Hospital Pharmacy Installations in Sukoharjo

No.	Infrastructure	Outpatient	Inpatient	Emergency Room	ICU	More
1.	Equipment for storage, compounding, and manufacturing of sterile, nonsterile, and aseptic drugs	✓	✓	✓	✓	
2.	Office equipment for administration and archiving	✓	✓	✓	✓	
3.	Adequate literature to carry out drug information services	✓	✓	✓	✓	
4.	Specialized storage cabinets for narcotics	✓	✓	✓	✓	
5.	Good lighting, water supply, ventilation, and waste disposal systems	✓	✓	✓	✓	
6.	Alarm	✓	✓	✓	✓	
7.	Office equipment	✓	✓	✓	✓	
8.	Computerized system equipment	✓	✓	✓	✓	
9.	Production equipment	-	-	-	-	
10.	Aseptic dispensing room	-	-	-	-	Aseptic dispensing room
11.	Storage equipment	✓	✓	✓	✓	
12.	Service equipment	✓	✓	✓	✓	
13.	Consultation equipment	✓	✓	✓	✓	
14.	Drug information room equipment	✓	✓	✓	✓	
15.	In-room archive equipment	✓	✓	✓	✓	

CONCLUSIONS

The results of this study indicate that the drug service dispensing time indicator does not meet the standard because dispensing time ≤ 60 minutes is 45.66% (less than standard of

80%). The indicator of prescription conformity with the formulary is 89.5% ($>80\%$), and the indicator of patient satisfaction with a value of 91.25% ($>76.61\%$). The results of the identification of human resources, based on the classification

of the number of pharmaceutical workers, the identification of facilities and have met the standards based on Menkes RI infrastructure have not met the standards number 56 of 2014, but based on the workload based on Menkes RI number 72 of 2016. classification of pharmacists and the results of

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