

Transforming Patient Complaints: Strategic Layout and Operational Processes Enhancements at Pharmacy Unit

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Abstract

Hospital, as a healthcare provider, consists of various interrelated service units. Pharmaceutical services for outpatient, inpatient, and operating room are provided by the pharmacy units and they need good operational management to maintain the speed of service. However, with the increasing number of patients, there has been a drastic decline in pharmacy service speed, leading to a rise in patient complaints and a decrease in patient satisfaction index, which, if unaddressed, may result in patient loss. This study measured the impact of changes in room layout, workflow improvements, pharmacy unit manpower productivity, and alteration of drug packaging on complaint numbers and satisfaction index of the patients at Primaya Hospital Semarang. A Likert scale questionnaire was to assess patient satisfaction and record complaints received via WhatsApp, Google Reviews, email, Instagram, or directly to the customer service unit. The measurements were taken before the intervention and after implementation of the changes. The implementation of these four operational interventions decreased significantly the complaint numbers over time accompanied by an increase in patient satisfaction index.

Keywords: complaint, layout, management, satisfaction, pharmacy.

INTRODUCTION

Hospital as a national health subsystem must supports government programmes in improving public health levels. (Pemerintah Republik Indonesia, 2021). Private hospital also need to get the opportunity to gain the trust of the public, especially in the face of increasingly fierce competition affected by global circumstances and faced with situations like this, the hospital must not only be able to gain confidence but also to survive in the competition for survival and progress in the future. (Hammad & Ramie, 2022)

The pharmacy unit, as one of the units in the hospital, has a vital role to play in the patient's service for a fast, accurate, and complete medical service becomes a hope for the patient considering that usually taking medication is the last route of the patient's journey to the hospital before the patient discharged (Peraturan Menteri Kesehatan Republik Indonesia Nomor 72 Tahun 2016 Tentang Standar Pelayanan Kefarmasian Di Rumah Sakit, 2016).

Based from Primaya Hospital Semarang internal data, increasing number of patients from 2022 versus 2023, in addition to having a positive impact in terms of revenue, has a negative impact due to creating a long queue that leads to increasing complaint number in the pharmacy unit. Long queue in pharmacy became a major complain for the patient and reduce patient satisfaction index if it's continued. In the era of social media easily gone viral, a lot of complaints will lead to lost of trust from patient to get the hospital service and they will go to another hospital, giving a big impact on reduction of patient volume and also hospital revenue. (Ariadi, 2019; Irene Waine et al., 2022)

The primary objective of this research is to analyzed hospital management intervention based on an urgency of the problems found in pharmacy unit that must be resolved immediately with proper operational management intervention including layout of pharmacy unit, manpower problem, workflow problem, and drug packaging so that complaints do not continue and patient satisfaction can re-increase before the hospital loses patients and revenue.

LITERATURE REVIEW

A. Healthcare Facility and Manpower

Hospitals as per WHO are intended to supplement and enhance the performance of many other aspects of the health-care system, ensuring continual provision of services for acute and complex diseases so they should focus scarce resources within well-planned referral

networks in order to respond effectively to community health demands as they are a crucial component of Universal Health Coverage (UHC) and will be critical in achieving the Sustainable Development Goal (SDG). People care about hospitals, and they frequently play an important role in their lives including in health-care coordination and integration so they frequently serve as a learning environment for doctors, nurses, and other health-care workers, as well as a fundamental foundation for clinical research. (WHO, n.d.)

Hospitals are institutions of health care that provide full-fledged individual health services that provide outpatient care, inpatient care, and emergency services include: Medical services and medical support; Nursing and maternity services; Ancillary services; and Pharmaceutical services including: Management of medical devices, pharmaceutical supplies, and medical supplies carried out by a one-door system pharmacy installation; and Clinical pharmacy services (Pemerintah Republik Indonesia, 2021)

Hospital Pharmacy Service includes two activities, namely managerial activities such as management of pharmaceutical supplies, medical equipment, medical supplies, and clinical pharmacy services that should be supported by human resources as manpower, resources, and equipment with the responsibility of pharmacist is for the management of the pharmacy, medical devices, and medical supplies in the hospital that guarantees the entire range of activities of drug supply, health equipment, and medical supplies in accordance with the applicable provisions and ensures their quality, benefits, and safety. (Peraturan Menteri Kesehatan Republik Indonesia Nomor 72 Tahun 2016 Tentang Standar Pelayanan Kefarmasian Di Rumah Sakit, 2016)

Healthcare facility layout and design is needed to design flexible and high performing healthcare facilities that will not only support operational efficiencies, and reduce cost but also improve patient and staff experiences so there is a connection between healthcare facility

layout and improvement of manpower productivity and workflow. (Halawa et al., 2020). The importance of facility planning also give impact on the productivity and efficiency of industrial system to allow them get more efficient performance, reducing cost, and minimum health/safety risks in the workplace (Pérez-Gosende et al., 2021). In addition to being prompt, efficient, and collaborative, health care should be safe and effective by the built environment so at the very least, the facility's architectural design has an indirect impact on efficacy and safety but a direct impact on patient-centeredness, timeliness, and efficiency. (McClure & Dunston, 2016)

Enhancing the effectiveness and efficiency of healthcare professionals is essential for the nation's health service delivery system concluding that effective workload management is crucial for any nation or organization to provide high-quality services, retain employees, and lower employee turnover (Joarder et al., 2020). Lack of manpower will result in excessive workload and decreased quality of service characterized by failure to meet the Minimum Service Standard indicators as well as increased number of medication errors that lead to customer dissatisfaction and complaint so WHO creates The Workload Indicators of Staffing Need (WISN) method as a method that shows the amount of energy needed on healthcare facilities based on the actual workload of healthcare personnel, so location/relocation will be more rational and also this method can be applied to all manpower categories, both medical and non-medical. (WHO, 2023) The Workload Indicators of Staffing Need (WISN) methodology is believed to be dynamic and useful in supporting managers and decision makers to improve the quality of Human Resources. (Yulaika, 2018)

B. Complaints And Patient Satisfaction

Dissatisfaction from the patient could impact on patient loyalty and trust with the hospital and if it happened for many times, the patient will move to another hospital so as

conclusion is one of the reasons why customers are transferred from one service provider to another is because customers are not satisfied with the solution of the problem they receive. (Haryanto & Dewi, 2018). Complain management is a strategy used by the company in dealing with consumer complaints because by using effective complaint handling processes the company will obtain information that comes from customers as input in improving and developing agency service activities which mean that a complaint is a form of dissatisfaction with information or service received that needed to be resolved in hospital service to improve hospital quality (Irene Waive et al., 2022). Improving the standard of medical care accommodations has emerged as a top priority for patients and as a result, hospitals are placing an increased emphasis on service quality to better accommodate patients in an effort to satisfy and keep patients with the target that customer satisfaction will demonstrates a long-term relationship with the service provider, which raises compliance and improves health results. (Rehaman & Husnain, 2018)

Service quality according to Parasuraman has five indicators, namely the reliability dimension (reliability) as the ability to provide services that are accurate and reliable, the dimension of certainty (assurance) as dimension of service quality related to the knowledge of officers or products precisely and friendliness of officers and their ability to build trust and confidence, the dimension of empathy (empathy) is the willingness of officers to care and give attention to customers/service users and pay attention to customers/service users, the responsiveness dimension (responsive) is the desire of employees or staff to help all patients, and tangible dimension (tangible) as well as the willingness and carrying out the provision of services (Ayu Rai Saputri et al., 2021). A study from Trivedi and Jagani (2018) resulted that one of the most important departments in every healthcare facility is pharmacy, and numerous studies have demonstrated the significance of drug supply in the efficient use of medical

services. Also in the same study notice about patients always anticipate that medications for a variety of illnesses would be available right away, and pharmacists are kind enough to explain how to use prescriptions and distribute medication in accordance with them and in terms of gender, it was discovered that for both male and female inpatients, critical elements such encounter with doctor, nurse, hospital administration, and hospital pharmacy have a major influence on their happiness (Trivedi & Jagani, 2018).

METHODS

This case study observes and compare the impact of operational management interventions on the number of employees based on workload analysis, workflow, room layout, and drug packaging on the complaints of the Primaya Hospital Semarang pharmacy unit since June to August before the intervention and September-December after the interventions,

External measurements were carried out from 313 respondents using a 9 points Google form questionnaire with a Likert scale (starting from 1 as not satisfied, 2 as less satisfied, 3 as satisfied, and 4 as really satisfied) distributed to patients undergoing treatment to measure the patient's satisfaction index based on the scale of the assessment. The questions are procedure of service, waiting time, results of service, staff competencies, staff attitude, response to complaint, facility, administration process, and pricing. Reliability and validity of the questionnaire results analysed with SPSS version 26 with Cronbach Alpha and Pearson correlation. For the type of complaint that comes in, collected from various media: complaints directly to the customer service unit, via WhatsApp to customer service number, via Instagram, Email, as well as google review.

Based on the data, calculations were made with the following formula to obtain the value of the patient's satisfaction index

$$\frac{\text{Total Sum Of Perception From All Respondend}}{\text{Total Element Filled From All Respondend}} \times 25\% \quad (1)$$

Internal measurement of the preparation time of ready to take drugs using the Electronic Medical Record system that can retrieve data from preparation to delivery. The intervention began in September by making gradual changes to the four aspects above and measuring the results of the change.

RESULTS AND DISCUSSION

Result

There are additional manpower at the end of August consisting 2 pharmacists and 2 pharmacist assistants so total manpower in September are 19 people. There also changes in pharmacy unit layout at drug preparation area, medicine preparing area, and drug placement on the drug shelves. Changes in the service flow is from one to two front officer. The last changes is drug packaging from paper to plastic clips. Based on the intervention, measurements carried out in January-August compared with September-December 2023, internally obtained data as follows:

Table 1 Waiting Time Performance under 8 Minutes for Ready-To-Take Drugs Jan-Dec 2023

Month	Numerator	Denominator	%
January	1.969	2.611	75%
February	1.719	2.347	73%
March	1.425	1.980	72%
April	961	1.362	71%
May	754	1.092	69%
June	1.322	1.871	71%
July	2.351	3.361	70%
August	2.628	3.602	73%
September	2.055	2.542	81%
October	2.610	2.650	98%
November	2.024	2.179	93%
December	2.180	2.597	84%

From the table above, it appears that in September until November there was an increase in the achievement of shorter waiting times for the process of medication preparation to the patient. In December there was a slightly decrease in preparation time due to management new regulation of locking drug code so the pharmacy unit need to get adapted, but it still faster than before September 2023. Based on external measurements using the following questionnaire results obtained from the customer service unit:

Table 2 Complaint Number and Patient Satisfaction Index

Month	Respondent	Number of Complaint	Complaint Ratio	Satisfaction Index
June	26	8	31%	91.35%
July	35	15	43%	91.22%
August	39	13	33%	86.45%
September	18	7	39%	93.25%
October	33	3	9%	93.72%
November	77	7	9%	94.43%
December	85	4	5%	94.54%

Reliability test (Cronbach Alpha) result of the questionnaire processed with SPSS Statistics Version 26 is .955 and validity test with Pearson Bivariate correlation for 313 total respondents from June-December 2023 is > 0.1109 (df-2 with significance level of 0.05) for all questionnaire point.

Measurements using the questionnaire showed a rise in the patient satisfaction index starting September that still an adaptation month with the new four factors intervention until December. Based on the number of complaints ratio, there were significant decrease in the months of October until December compared to the previous months before operational interventions.

Discussion

With the drastic increase in the number of patients, it must be offset by improvements in both the workflow, manpower, inventory, and layout of the unit.

Table 3 Patient Volume 2022 and 2023

Period	Inpatient Days	Outpatient Visit
Q1 2022	782	2.088
Q2 2022	900	2.787
Q3 2022	1.905	6.132
Q4 2022	3.418	13.410
Total 2022	7.005	24.417
Q1 2023	3.902	17.235
Q2 2023	4.434	22.585
Q3 2023	5.529	24.822
Q4 2023	6.560	25.285
Total 2023	20.425	89.927

The table above shows a very significant increase of patient volume to more than 300% between 2022 and 2023. The increase in the number of patients, in addition to having a positive impact in terms of revenue, has a negative impact due to the increased workload, so there is a

long queue in the pharmacy unit. This long queue leads to increase in complaints number taken from patient opinions as follows.

Table 4 Complaint Number and Patient Satisfaction Index

Month	Respondent	Number of Complaint	Complaint Ratio	Satisfaction Index
June	26	8	31%	91.35%
July	35	15	43%	91.22%
August	39	13	33%	86.45%

Some problems found by hospital management to be resolved are as follows:

A. Workload and Productivity Analysis

The pharmacy manpower in early 2023 with the composition of 3 pharmacists, 1 coordinator, and 11 pharmacist assistants with the same workflow since 2022 was unable to offset the burden of increasing the number of patients so the complaints number increased over time with the value of the satisfaction index is decreasing

Analysis of the workload of each staff with the amount of time required to perform the task, needs to be consideration as the material for counting of the need to add manpower or not. Workload analysis of Primaya Hospital Semarang Pharmacy Unit using WISN method is at follows:

Table 5 Manpower Based on WISN Method

Job Title	Total Hour in 1 Year	Effective Working Hour Per Employee	Current Manpower	Additional Manpower Needed
Pharmacy Coordinator	2.023	2.016	1	-
Pharmacist	8.017	2.016	3	1
Pharmacist Assistant	36.270	2.016	11	7

Based on the workload analysis made, the need for a pharmacy unit is 23 people, consisting of 1 coordinator, 4 pharmacists, and 18 pharmacist assistants. Based on current situation, there are still 8 manpower needed.

B. Workplace layout

The pharmacy unit is one of the units that has the most inventory storage in the hospital, so the arrangement of the pharmacy room will be very important in the effectiveness of the work process and the speed at which a prescription can be prepared and given to the patient. The following is a layout of the Primaya Hospital Semarang pharmacy room:

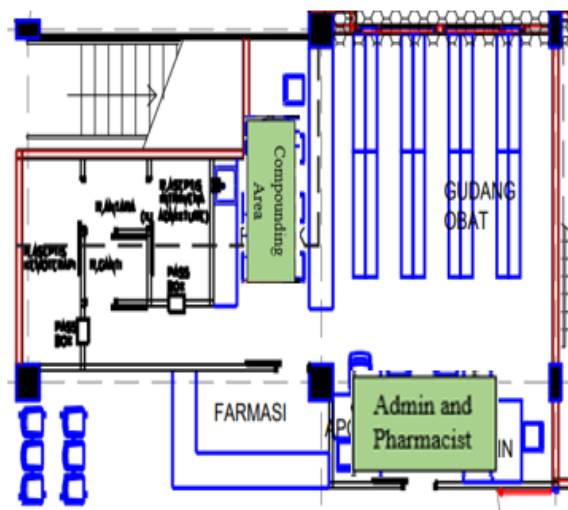


Fig.1 Pharmacy Unit Layout

From the layout, it appears that there is a distance between the compounding room and the medicine warehouse, so that drug retrieval must go through a considerable distance.

C. Workflow

The workflow that must be passed until the drug is delivered starts from the doctor prescribing the drug through the system, then the pharmacy officer at the front counter will review the incoming prescription and complete the drug administration information, then the patient who has received confirmation from the guarantor will bring the receipt to be submitted to the pharmacy to be received also by the officer at the front counter, The drug that has been

reviewed will go to the pharmacy officer inside to be prepared/formed into puffers/capsules, then check the correctness of the drug, followed by etiquette installation, packaging, and handing back to the pharmacy officer outside, the officer will call the patient whose drug is ready, the officer conducts education on the use of the drug, the patient signs the drug receipt form, and the drug is handed over.

This process in reality takes more than 30 minutes per prescription, because with the number of employees available, there is only 1 person at the front and 2-3 people inside. The time required for the front staff from prescription review to education and submission takes a long time and results in a queue of patients. Sometimes the medicine is left behind by the patient to be picked up later or sent home.

D. Drug Packaging

Considering the high accuracy in pharmacy for proper drug administration, it includes seven steps of correct drugs, correct patient, correct time, correct dose, correct method, correct information, correct documentation. After the medicine is given from the officer inside to the officer outside, when the officer outside will hand over the medicine, the officer will check again by opening the packaging while explaining to the patient, automatically this will take time too.

Of the four factors observed, there are many gaps that cause complaints and performance continues to decline.

Table 6 Waiting Time Performance under 8 Minutes for Ready-To-Take Drugs Jan-August 2023

Month	Numerator	Denominator	%
January	1.969	2.611	75%
February	1.719	2.347	73%
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Based on the changes and interventions carried out by hospital management that began in September of the four aspects that trigger the complaint in the pharmacy unit are:

A. Additional Manpower According to Productivity

Seeing the gap between the manpower required with the conditions until July, at the end of August hospital management was recruiting and making the addition of 2 pharmacists and 2 pharmacist assistants so that the amount of manpower in September are 19 people. In addition to the increase of manpower, an adjustment was made by adjusting the schedule to start shift in the peak hours of service at 10am-5pm or 3pm-10pm, depending on the schedule of doctors who have a large number of patients on certain days so the workload will be more efficient and not cut in hours with low workload. The emerging implication of this intervention is that there is extra manpower to be able to increase the coverage of services following the increasing number of patients.

B. Changes In the Pharmacy Unit Layout

Seeing the narrow and how inefficient the drug preparation table with the distance to the shelf in the pharmacy warehouse, there is a change in the layout as follows:

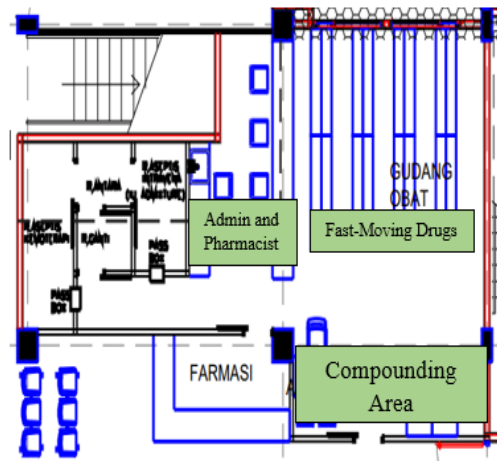


Fig.2 Changing in Pharmacy Unit Layout

Changing the layout of the drug preparation area by make it closer to the drug warehouse as well as make it wider to prepare several drugs at once. In addition to moving the medicine preparing area, the drug placement on the drug store shelves is also done so that drugs that have the character of fast-moving drugs are combined to accelerate drug preparing at the same time.

C. Changing the Service Flow

Changing from previously only one front officer to two front officers with additional of manpower so that the receiving officer and the prescribing officer are different, this will result in the staff being more focused on preparing the supply of medicines, while reducing human error due to rush. The recipe is better prepared and the “check seven is right” is also better.

D. Change of Drug Packaging

Using paper is on the one hand more environmentally friendly, at the same time can be a media promotion of the hospital. But this will add the time it takes to do the re-checking. So, the solution used is to replace the packaging of each type of medicine with plastic clips, then once ready to deliver it will be wrapped with 1 package of paper. This will make it easier

for the staff to see between the drug label and the drug because it will be visible from the outside without having to open the packaging.

Looking at both external and internal measurements for the moment, it can be assumed that operational management interventions in accordance with the theory in the book *Operations Management 12th Edition* by Jay Heizer, Barry Render, and Chuck Munson, (Heizer et al., 2015) from the perspective of productivity (human resources, job design, and work measurement), layout (layout strategy), flow and process strategy, and product design for drug packaging (product strategy), yielded positive results to the problems that occurred in the Primaya Hospital Semarang pharmacy unit as well as improved quality of service to patients.

CONCLUSION AND IMPLICATIONS

Conclusion

Various operational management interventions can be undertaken to improve quality and service for patients. This case study gave positive results and significant decrease of patient complaint ratio that arose in the Primaya Hospital Semarang pharmacy unit through both internal and external measurements after operational management interventions of adding manpower based from WISN method, changing in workplace layout in pharmacy unit, changing of workflow, and changing of drug packaging has been done.

Hospital services are complex and involve a wide range of professionals. In relationships between service units, there are a lot of friction, shortages, and problems that will inevitably affect patient satisfaction and the way patients view of a hospital. The pharmacy as the endpoint of the patient's journey to the hospital has become one of the indicators of the quality of service. How management's response to complaints that arise and the ability to see the problems that exist between and within the unit is a prerequisite for a good manager.

Recommendations

This study still has many weaknesses, among other things a short time so that the results are not fully settled, then only four interventions carried out within the pharmacy unit and has not touched the relationship of the pharmacy unit with another unit, with the supplier, or the comparison of the abilities of each pharmacy staff that can still be studied in depth. This case study opens up an opportunity to evaluate and measure more broad interventions in order to maximize the performance of the Primaya Hospital Semarang Pharmacy Unit..

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