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**ANALYSIS OF WAITING TIME FOR PATIENT SERVICE USING
LEAN CONCEPT IN OUTPATIENT CARE INSTALLATIONS OF
STELLA MARIS HOSPITAL, MAKASSAR CITY**

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ABSTRACT:

To carry out the functions and duties of the hospital, the hospital provides outpatient services which is one of the services that is the main concern of hospitals throughout the world, because the number of outpatients is much larger than inpatients so that outpatients are a source of market share. which is predicted to offset the income from inpatients in the future which can increase the hospital's finances. This study aims to analyze the waiting time for patient care using the lean concept in the outpatient installation of Stella Maris Hospital Makassar. The type of research carried out is a mix method by measuring the waiting time for patient services as many as 100 patients and using interview guidelines for 8 informants, namely the head of the outpatient installation (1 person), admission officer (3 people), hospital director (1 person), and nurses (3 people) . The results of the interviews were analyzed through data reduction, data presentation, and drawing conclusions. To test the quality of the data, it is done by describing the patient service process in the form of a flowchart. The results of observations showed that there were problems with waiting times, doctors who arrived late, queues for picking up queues that often had problems, rs had not

implemented an rs sim. Therefore, hospitals need to interconnect SIMRS in all parts of the hospital, intervene in improvements and continuously evaluate so that the results are more measurable to be used as information in decision making.

INTRODUCTION:

Outpatient services carried out by outpatient installations are one of the hospital health services that must meet the Minimum Service Standards (SPM), one of the quality indicators is the waiting time for patient services with a minimum standard set of 60 minutes (Decree of the Minister of Health no.129 of 2008 concerning Minimum Service Standards for Hospitals, 1992). Outpatient services, which is one of the services that are of major concern to hospitals throughout the world, because the number of outpatients is much larger than inpatients so that outpatients are a source of large market share which is predicted to offset income from inpatients in Indonesia. Future that can increase hospital finances (Law No. 44 of 2009).

Outpatient perceptions of health services are an important indicator to assess the quality of health services (Sofaer & Firminger, 2005; Kapp et al., 2017; Tille et al., 2019; Fadli & Amirah, 2020). Problems that commonly occur in outpatient services in hospitals are the length of waiting time, administrative processes, availability of information, and others. Waiting time for health services felt by outpatients is one indicator of patient satisfaction that affects the quality of health services (Maxwell et al., 1984; Susanti et al., 2020).

From the research results of Torry et al (2016) with the research title Factors Affecting Waiting Time for Health Services in relation to Outpatient Patient Satisfaction in Internal Medicine Clinic Dr. Iskak Tulungagung in 2016 showed that the results of multiple regression analysis showed that patient satisfaction was influenced by the actual waiting time felt by the patient, and the speed of service received by the patient ($P < 0.05$). In conclusion, the main factor that prolongs service waiting times and reduces patient satisfaction is the less than optimal schedule of doctors on duty.

In the results of research by Kurnia Widyaningrum et al (2015), with the title Factors Affecting the Optimization of the Outpatient Unit at Hospital X. The results showed that there was a gap between space utility and staff optimization. Room utility is only 22.4% while the optimization of each doctor is very optimal, namely 141.6%, 172.9% and 68.75%. By using a fishbone diagram, it was found that the main factors that were less than optimal in the outpatient unit were the lack of human resources and an uncomfortable environment. The 5 why's analysis found that the monitoring and evaluation (monev) system was not running optimally as the root of the problem. The agreed solution to increase optimization in this outpatient unit is to reactivate the monev team by providing training on monev.

An MBA student in a Lean Supply Chain Management class applies lessons learned to a project at Help Hospital in Vijayawada, India. The project reduced outpatient waiting time from over an hour to 15 minutes and increased workforce productivity by 114%. This example shows that with the right tools, even someone with limited exposure to lean principles can produce significant results (Miller & Chalapati, 2015).

The results of research conducted by Noviani (2018) show that 90% of service time is a non-value added activity and only 10% of activities are value added. After conducting future state analysis with proposed improvements using the lean method in a simulative manner, namely 5S, Kanban Inventory, visual management, the non-value added activities became 78.30% and value added activities became 21.70%.

One way to eliminate waste or non-value added activities and improve patient safety is to implement sustainable Lean hospital concepts and principles (Poksinska, 2010). Several

countries such as the United States, United Kingdom, Australia have shown success in implementing this method (Li et al., 2017; Rotter et al., 2017; Kinsman et al., 2017).

Stella Maris Hospital Makassar is a class B private hospital, based on data on the quality of outpatient installations for the last three years, namely in 2017 which obtained a waiting time of 100 minutes, 2018 as many as 120 minutes, 2019 by 99 minutes, This of course causes a lot of complaints patients or patients' families who feel that the waiting time for patient care in the Outpatient Installation of Stella Maris Hospital Makassar is still too long.

METHODS:

Research location and design:

This research was conducted at the Outpatient Installation of Stella Maris Hospital Makassar April 2021. This study used a mix method using interview guidelines and observation guidelines.

Informant:

This study used 8 informants, namely hospital director, head of outpatient installation, admission officer, nurse.

Data collection:

The instrument used in data collection is an observation sheet to record the waiting time for patient care using a stopwatch and interview guidelines.

Data analysis:

Data reduction was carried out for sorting, destroying, simplifying, abstracting, and transforming coarse data found in the field, selecting and grouping data and discarding unnecessary data. Presentation of data is done in the form of brief descriptions, charts, and relationships between categories.

RESULTS:

Table 1 shows the distribution of informants to employees in the outpatient installation of the Stella Maris Hospital, Makassar. The researcher divides each patient service process in the form of a flow chart based on the process of taking the patient queue number until the patient's entry is examined by a doctor. At the service at the queue number taking counter, it is done by pressing the queue machine button. And the distance from the patient's entrance to the counter for taking the queue number must walk through the corridor and there are often problems with the queue number provided by the hospital.

No	activity	Types of Activities	Average time (minutes)	Highest time (minutes)	Lowest time (minutes)
1	Patients come	VA	0,1	1	0
2	Patients walk through a long corridor leading to the queue number retrieval machine	NVA	1	2	0,2
3	Patients queuing to pick up queue numbers	NVA	0,2	1	0,5

No	activity	Types of Activities	Average time (minutes)	Highest time (minutes)	Lowest time (minutes)
4	Patient takes queue number	VA	0,6	2	0,3
5	Patient to front registration counter to wait for queue turn	NVA	5	30	1

"When the patient comes from the entrance to the hospital, the patient is directed to the officer/security officer who is standing in the hospital lobby for the queue machine counter to the poly" (I.1)

"...the queue machine for taking the queue number here often has problems, sometimes we admission officers are overwhelmed when the queue number is problematic because it disturbs us who are serving (I.2)

Table 2 At the service at the patient registration counter, after the patient takes the patient queue waiting for their turn to register the patient in order to input patient data to make the patient's medical record file as data for the hospital and confirm to the patient to go to the police what he wants to go to.

No	activity	Types of Activities	Average time (minutes)	Highest time (minutes)	Lowest time (minutes)
1	The patient sits in a chair to wait for his turn to be called according to his queue number	VA	18	60	1
2	Patient hands over queue paper to admissions officer	VA	0,1	10	1
3	The patient provides a referral file to the admissions officer	VA	0,1	3	1
4	Officers asked for the patient's ID card, kk, and bail card to match the data	VA	0,1	3	1
5	The officer inputs the patient data	VA	2	7	1
6	Officer makes SEP patient	VA	2	8	1
7	Officers awaiting confirmation at the centre of the bpjs	NVA	2	6	2
8	Officer prints patient's SEP	VA	2	3	1
9	Admissions officer	NVA	0,5	2	1

No	activity	Types of Activities	Average time (minutes)	Highest time (minutes)	Lowest time (minutes)
	gives patient files to medical records officer				
10	Medical records officer records patient's medical record file	VA	1	5	1
11	Medical records officer seeks patient's medical records	NVA	2	3	1
12	Admissions officer confirms doctor's schedule to poly nurse	NVA	3	2	1
13	The admissions officer informed the patient about the doctor on duty at this hour.	VA	0,1	2	1
14	Admissions officer gives paper queue to patient to go to poly	VA	1	2	1
15	The patient is directed to go to the poly	VA	0,3	2	1

As one informant said in an interview:

“What makes it take a long time for patients to be processed for registration at the BPJS center is the presence of network disturbances from the center so that the process takes a long time (I.3)

"Usually when I serve a patient, there are several patients who ask so I give direction to the patient (I.4)

Based on information on the length of patient waiting time regarding service time, it is known that the implementation of outpatient services begins when the patient is called to the registration counter with the patient number according to the queue number. The obstacles that occur during this process include when the patient is called to the registration counter and the patient is a BPJS participant, there are often obstacles in making SEP due to internet connection problems, printer errors, and patient medical record file storage errors (human error).

“The obstacle faced at the patient registration counter is that sometimes at 11.00 WITA the network from the BPJS center is disrupted and the printer available at the registration counter is only available 1 and also sometimes patients come to ask questions if they don't understand. So when serving patients I am overwhelmed to overcome it (I.5)

Table 3 In the process of waiting for the patient to be called into the doctor's examination room, the medical record file must first come before the patient is called in to be examined by the doctor, but usually the doctor is sometimes slow to come so the patient has to wait for some time to be examined by the doctor. After the patient goes through the

process of taking the queue number, registering the number, the patient will be called his number or name for inspection.

No	activity	Types of Activities	Average time (minutes)	Highest time (minutes)	Lowest time (minutes)
1	Medical records officer brings patient's medical records to nurse	NVA	4	18	2
2	Nurses standing at nurse's post check patient's medical records	VA	1	3	0,5
3	Nurse takes patient's rm file into doctor's room	NVA	0,7	0,3	1
4	Patient handed out paper queue patient post nurse	NVA	1	1	0,4
5	Nurses take the patient's queue paper and are taken into the doctor's room	NVA	3	8	1
6	Nurses standing at the nurse's post direct patients to perform initial checks such as measuring weight, blood pressure and asking patient complaints	VA	1	0,3	0,1
7	The patient waits for the doctor to arrive and is called in for an examination	NVA	72	134	13

As one informant said in an interview:

"Sometimes the medical record file brought by the medical record officer from the registration counter is usually slow to arrive and the doctor always arrives late according to the schedule set by the hospital, but before that I as a nurse first contacted the doctor to ask what time he came. This is what causes the waiting room for outpatient polyclinics to be full due to doctors who have not yet arrived" (I.6)

"The obstacle faced is that the doctor is slow to come so that the patient comes to ask questions about it" (I.7)

Value Stream Mapping is a structured diagram or a method used in mapping related to flow in a complete picture covering all processes of a system. The purpose of lean is to make the system or process flow more effective and efficient by eliminating waste that

does not provide added value. Researchers conducted direct observations in the field to map the value stream of patient service activities as one of the tools to determine the composition of value added and non value added activities.

Based on (figure 4.1), with VSM on Outpatient Patient Service, it can be seen that the cycle time in the queue taking process is 2.1 minutes which consists of an average time of 2 minutes and the transfer process in the next process is 0.1 minutes, with the highest time reached 6 minutes and the lowest time was 1 minute. In this section the average waiting process is 5 minutes, the longest waiting time is 30 minutes and the lowest is 5 minutes.

The process at the registration counter for the patient queue number has a cycle time of 16.1 minutes, consisting of an average time of 16 minutes and the transfer process to the next process 0.1 minutes. In the waiting time process, the average waiting time is 18 minutes, the waiting time is too long for 60 minutes and the lowest time is 1 minute.

Furthermore, in the examination process, the patient has a cycle time of 9 minutes, with the highest time being 30 minutes and the lowest time being 4 minutes. In this process the average waiting time is 72 minutes. The highest time was 134 minutes and the lowest time was 13 minutes.

The average time required for the patient service process is 122.2 minutes, with details of value added activities 27.2 minutes (22.3%) and non-valued activities (NVA) reaching 95 minutes (77.7 %).

DISCUSSION:

The focus of this research is the analysis of waiting time for patient services using the lean concept in the outpatient installation of the Stella Maris Hospital, Makassar. The patient service process discussed in this study includes all service activities starting from the process of taking patient queue numbers, the patient registration process at the registration counter and the patient's process when entering the doctor's examination room.

The application of the lean concept in general states that all forms of activities that do not bring customer value are waste and must be eliminated or minimized. Before solving problems through the application of lean management, identification is first done by looking at the general description of the problem in each process, analyzing the presence or absence of Non Value Added activities (NVA) and waste in the activities or processes that occur. The lean tools used to analyze are Value Stream Map (VSM), Visual Management, waste identification and root cause analysis (Lawal et al., 2014).

In lean bringing problems to the surface is very important. Problems that appear on the surface will be seen clearly and solutions are immediately sought. The strategy taken to bring up surface problems is to organize materials, processes and resources that flow continuously, every time a problem arises, the process will be stopped and solutions are sought for these problems (Agustianingsih, 2011).

Identifying problems to the surface is done by means of in-depth interviews, document review and direct observation to the field to map the value stream of patient service activities at the outpatient installation of the Stella Maris Hospital, Makassar as one of the tools to find out activities that have added value or value added and activities that have no added value or non-value added/waste.

The focus of Value Stream Mapping (VSM) analysis is carried out on patient services starting from the process of taking patient queue numbers, the patient registration process at

the registration counter and the patient's process when entering the doctor's examination room. These streams are interrelated with each other.

Through problem identification, the root cause of the problem can be found which is the largest contributor to non-value added or waste. With fish bone diagrams, it helps to visually display the sources of the causes of problems, making it easier for researchers to identify the root causes of problems. There are four (5) identified sources that cause problems in the pharmaceutical supply management process, namely in terms of man, material, method, environment and machine.

Based on the results of the root cause analysis, several proposed improvement designs were obtained, including physical improvements to outpatient pharmacies in the form of visual management, improvement of doctor's schedules, improvements to the queue number retrieval machine, SIMRS implementation, making patient flowcharts, in outpatient installations. Waiting time for patient service is the time from the time the patient arrives, takes the queue number until he enters the doctor's examination room (≤ 60 minutes). According to Sulistiyorini et al 2012 there are 4 other types of queue discipline: (1) First come first served (FCFS) or first in first out (FIFO) that is, first to come (to), first to be served (out). For example, the queue at the ticket counter for cinema tickets. (2) Last come first served (LCFS) or last in first out (LIFO) means the last to arrive first to leave. For example the queuing system in the elevator for the same floor. (3) Service in random order (SIRO) means that calls are based on random chance, it doesn't matter who arrives first. (4) Priority service (PS) means that service priority is given to customers who have a higher priority compared to customers who have a lower priority, even though the latter may have already arrived in the waiting line. Incidents like this may be caused by several things, for example someone who is in a serious illness is more severe than other people in a doctor's office.

In the outpatient installation of the Stella Maris Hospital, Makassar, based on observations made by researchers that the patient service process is based on the process of taking the queue number until the patient enters, the patient is examined by the doctor where the patient experiences a long waiting time due to the long doctor coming and at the patient registration counter experiencing interference. internet network and queue number retrieval machines that are often problematic.

CONCLUSION:

Based on the results of the study, the researchers formulated the following conclusions: improvements to the queue machine for taking queue numbers, implementing SIMRS and improving doctor's schedules.

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