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Application of LEAN Management on the Waiting Time Efficiency of Outpatient Services at Jember Hospital Clinic

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ABSTRACT

Background: Services to patients in hospitals often experience problems of dissatisfaction due to waiting time. There were complaints submitted by outpatients regarding the long waiting time for polyclinic services. This study aims to analyze the application of the lean method in the problem of waiting time efficiency at Jember Klinik Hospital.
Subjects and Method: This was a qualitative study conducted at Jember Clinic Hospital. Research informants are leaders, medical staff in the registration and service department. This research does not use variables but focuses on place, actor, activity, value stream mapping (VSM). Data collection techniques using in-depth interviews, observation and documentation. Methods of data analysis using interpretive thematic analysis.
Results: 1) the outpatient service process at the Jember Klinik Hospital is carried out starting from the registration counter until the patient enters the examination room. Lead time at the outpatient registration area (6 patients) was 261 minutes, lead time at the filing room (6 patients) was 125 minutes, lead time at the polyclinic (6 patients) was 663 minutes; 2) Flowchart of outpatient services (outpatient waiting time) starting from the patient registering at the Outpatient Registration Center (TPPRJ) until the patient is examined by a specialist starting with the registrar calling the patient, the registration officer validating the completeness of the requirements, input SIMRS data and v -claims, search and distribution of BRM to polyclinics, and examination by DPJP and 3) VSM starts from TPPRJ to polyclinic. The process required for the registration process is 43.50 minutes.
Conclusion: The application of the lean method in the problem of waiting time efficiency at the Jember Klinik Hospital is still not optimal with the mapping of waste at the Jember Klinik Hospital explained Lead time, Flowchart of outpatient services and VSM starting from TPPRJ to the polyclinic.

Keywords: efficiency, lean management, service, waiting time

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BACKGROUND

The quality of health services shows the ability of the hospital to provide services according to established standards and acceptable to patients (Aditama, 2013). Improving the quality of health services is

based on awareness of patient demands for health services so that the dimension of health services is waiting time. (Bustani et al., 2015).

Service waiting time is a problem in patient satisfaction and is often a cause of dissatisfaction. Patients pay attention to aspects of waiting time to obtain health services. Waiting time is important in providing health services. Long waiting times often occur in outpatient services because in terms of quantity, the number of outpatients is more than inpatients and there are more complaints regarding waiting time for outpatients than inpatients (Dewi et al., 2020).

Long waiting times are a factor of patient dissatisfaction with hospitals in many countries (Kharismawati, 2016; Pualamsyah and Sudiro, 2017), Indonesia is no exception, such as Indramayu District Hospital (Laeliyah and Subekti, 2017), Blambangan Banyuwangi Hospital (Purwanto et al., 2015) and the North Sulawesi Province Public Eye Health Center (Bustani et al., 2015). One of the problems faced by hospitals regarding waiting times is the Jember Klinik Hospital.

Jember Klinik Hospital is a private hospital that provides emergency, outpatient and inpatient services. Jember Clinic Hospital is an advanced health facility that also provides services to general patients and BPJS Health patients. Based on preliminary study data at the Jember Klinik Hospital, it shows that from 2015 to 2020 there has been an increase in the number of outpatient visits. Over the past 5 years, Jember Clinic Hospital has experienced rapid development. This is evident from the number of patients visiting the hospital has increased every year. The results of the preliminary study obtained data on visits from 2015-2020 respectively in 2015 amounting to 68,415, in 2016 amounting to 72,993, year 2017 amounting to 88,279, year 2018 amounting to 106,909, year 2019 amounting to 128,566, and year 2020 amounting to 82,133. This is supported by visiting trend data, in 2015-2019 it has increased even though in 2020 it has decreased due to Covid19.

The results of initial observations in February 2020 found complaints from outpatients regarding the long waiting time for polyclinic services. The patient said that the waiting time was long because the doctor did not come so that the patient felt bored because he wanted to seek treatment quickly. The patient also explained that the patient and the patient's family must be willing to leave housework and children, feel tired because they wait too long, at approximately 07.00 at the Jember Clinic Hospital immediately take a queue number then register and complete administration at the registration counter, then the patient must also waiting in the waiting room of the intended polyclinic for 30-120 minutes to be called to get a blood pressure check, asked for complaints (anamnesa) by the nurse/midwife. After that, the patient also has to wait for a specialist to carry out an examination and explain the course of the disease and its therapy.

The existence of problems related to waiting time can be explained that these problems must be carried out by planned quality improvements and clear patient flow in order to optimize and improve service efficiency (Michael et al., 2013).

Dewi et al., (2020) explained that medical record officers needed time to search for and retrieve other medical records and there were no special officers who distributed medical records to each polyclinic. Bustani et al., (2015) found that the internet hindered services. Noviani et al., (2017) found doctors who were undisciplined also saved service time.

Another phenomenon that occurs is that patients complain of the long waiting time at the polyclinic because the doctor does not come and is bored because of the long wait (Torry et al., 2016). Nursanti et al., (2018) also explained that in X Hospital there were complaints regarding the long waiting time caused by patients having to fill out a registration form which required a lot of time, job descriptions for registration officers who were still mixed with customer service, and unclear Standard Operating Procedures (SPO) in the registration section.

Methods with lean concepts in hospital services are important to apply to hospitals (Tapani, 2016). The lean concept is a continuous effort to eliminate waste and increase the added value of goods or services in order to provide value to customers or customer value (Graban, 2016). Forms of waste are errors, inventory buildup, process steps that are not really needed, unnecessary movement of materials from one place to another, and all goods and services that are inappropriate in the eyes of consumers (Fitria et al., 2019). The purpose of this study aims to analyze the problem of waiting time that occurs in outpatient services with the lean management method at Jember Klinik Hospital.

SUBJECTS AND METHOD

1. Study Design

This was a qualitative study with a phenomenological approach. The study was conducted at Jember Clinic Hospital, between October and November 2021.

2. Informants

The key informant in this study is the Deputy Director of Medical Services as a policy maker on the problem at hand. Main informants were head of medical records, registrar, storage clerk, outpatient medical record distribution, outpatient coordinator, doctor at internal polyclinic, doctor at pediatric polyclinic, doctor at cardiac polyclinic, nurse at internal polyclinic, nurse at pediatric polyclinic, nurse at cardiac polyclinic and 3 polyclinic admins and additional informants are the patient's family who have taken 3 to 4 times from internal polyclinic, children's polyclinic, and cardiac polyclinic because they are the ones who accompany patients.

3. Study Variables

This research was not defined based on research variables, but the overall social situation studied included aspects of place, actors and activities that interact synergistically. The focus of research is directed at registration and polyclinics because the waiting time referred to in the Regulation of the Minister of Health of the Republic of Indonesia of 2008 states that the waiting time starts when the patient registers until the patient is examined, focusing on creating a scheme with Value Stream Mapping (VSM) in the patient registration section and polyclinic.

4. Operational definition of variables

Place: a place in a hospital that serves patients with a large number of patients, such as patients registering until patients are examined

Actor: actor who carries out services to patients.

Activity: activities that interact synergistically from service recipients and actors.

Value Stream Mapping (VSM): a lean management method that consists of studying the current state as well as designing the future state of events that occur from the initial launch of a product or service to reaching the customer.

5. Instrument

The research instrument consists of:

a. Observation sheet

This observation sheet was developed to find out directly about patients taking

queue numbers, the process of patient registration, patient examination, stock of office stationery, waiting time for patients at registration, waiting time at polyclinics, and distribution of medical records.

b. Interview guideline

The interview guide used during the interview process was in the form of questions to be asked of research subjects, namely outpatient registration coordinator, head of medical records, registration officer, outpatient medical record storage and distribution officer, several heads of rooms, doctors, midwives, nurses, and patients.

6. Data Analysis

Data analysis using interpretative thematic analysis is defined as a method by identifying, analyzing and reporting themes or patterns contained in the data. Data analysis in this study focuses on interview data that has been obtained through in-depth interviews.

The first step involves transcribing the interviews. To ensure data validity, the study employs source triangulation and technique triangulation. The research focuses on registration and polyclinics due to the Ministry of Health Regulation of 2008, which defines waiting time from registration to examination. The analysis identifies and reports themes or patterns in the interview data, emphasizing in-depth interviews as the primary source of data for this study.

The initial step in this process is to transcribe the interview. Test the validity of the data using source triangulation and technique triangulation. The focus of research is directed at registration and polyclinics because the waiting time referred to in the Regulation of the Minister of Health of the Republic of Indonesia of 2008 states that the waiting time starts when the patient registers until the patient is examined.

7. Research Ethics

Research ethics aims to determine a research that is ethically feasible and can be applied in research locations with Indicator 7 standard values for ethical worthiness in this study Number 1247/UN25.8/KEPK/-DL/2021.

RESULTS

1. Characteristics of Informants

Table 1 explains that the informants consisted of 22 people from both the hospital and the patient's family. The first informant, namely the deputy director of medical services, works as a doctor and is a policy maker. The second informant is the head of medical records as a policy maker at the Jember Clinic Hospital Medical Records Installation with 11 years of service. The third informant is a registration officer consisting of 3 people with educational backgrounds ranging from high school, D3, and S1 with a working period of 5-7 years. The fourth informant is a medical record storage and medical record distribution officer with a high school education background and 6 years of service. The fifth informant is an outpatient coordinator with an educational background of D-4 Medical Records and a working period of 7 years, the sixth informant is a patient's family of 6 people with varying backgrounds starting from SMP-D3. The seventh informant is a specialist from 3 polys (children, internal medicine, heart) with a working period of 5-15 years. The eighth informant is a nurse from 3 poly (children, internal, cardiac) with 5-15 years of service. The ninth informant is the room admin from each child poly, internal poly, and cardiac poly with a high school educational background.

Table 1. Characteristics of Informants

Informant	Total	Educational Level	Period of working (Year)
Deputy Director of Medical Services	1	S2	21
Head of medical records	1	S1	11
Registration officer	3	Senior High School, Diploma III, College	5-7
Medical record storage and distribution officer	1	Senior High School	6
Outpatient coordinator	1	Diploma IV-medical record	7
Patient's family	6	Junior high school – Diploma III	
Medical specialist	3	Magister	5-15
Nurse	3	Diploma III	5-15
Room admin	3	Senior high school	6-20

Source: processed data

Results of Analysis of Problems Occurring in the Current State Stage (Lead Time, Outpatient Service Flow, Current State Value Stream Mapping)

The description at the Current State stage begins with gathering information on outpatient services through interviews, observation, and documentation. Data obtained from interviews included outpatient service procedures, applicable policies, planned budget, human resources, SIMRS involvement, and related inventory in the form of stationary. The data obtained from the observations included waiting time at registration, filing and at the polyclinic, the time it took officers to carry out work, the application of SOPs in each room, the availability of facilities and infrastructure, coordination between officers, and others. Documented data are SOPs, policies, photos of service processes, hospital plans, photos of infrastructure facilities, and outpatient service flow. All data will be described in the form of flowcharts and value stream mapping.

Lead time is the total time required from the process of outpatient service activities. Observations were made to six patients randomly in the internal polyclinic, pediatric polyclinic, and cardiac polyclinic.

Table 2. Results of patient observations without supporting examinations

Description of activity	Patient 1 (minute)	Patient 2 (minute)	Patient 3 (minute)	Patient 4 (minute)	Patient 5 (minute)	Patient 6 (minute)	Total (minute)
Waiting at registration (NVA)	28	40	15	39	47	36	205
Registration (VA)	10	7	5	12	5	17	56
Lead Time	38	47	20	51	52	53	261
Create BRM/search BRM (VA)	3	40	2	3	4	3	20
Distribution of BRM (VA)	10	12	3	4	8	10	43

Description of activity	Patient 1 (minute)	Patient 2 (minute)	Patient 3 (minute)	Patient 4 (minute)	Patient 5 (minute)	Patient 6 (minute)	Total (minute)
Finding the position of a misfile BRM (NVA)	3	40	2	4	4	3	62
Lead Time	13	27	7	51	12	15	125
Waiting at the polyclinic (NVA)	65	145	85	102	70	43	510
Patient history (VA)	8	5	5	7	8	7	40
Doctor Examination and Consultation (VA)	25	12	15	26	20	17	113
Total Activity Time	147	301	132	201	163	136	

Source: Primary Data (2021)
Notes:
Patient 1: pediatric polyclinic, new visit.
Patient 2: pediatric polyclinic, long visit.
Patient 3: internal polyclinic, long visit.
Patient 4: internal polyclinic, long visit.
Patient 5: cardiac polyclinic, new visit.
Patient 6: cardiac polyclinic, long visit.

Observations were made on 6 patients in 3 polyclinics with 2 people in each polyclinic and information was given that these activities had added value (value added) and no added value (non-value added). Patients without supporting examinations are patients who are not given an introduction to supporting examinations when receiving services at the polyclinic. The median or median value of patient waiting at registration to be called after taking a queue number is 37.5 minutes, while the median for staff activities carrying out patient registration activities is 8.5 minutes. It can be seen that waiting activities are longer than activities in carrying out activities that have use value.

Value Stream Mapping Outpatient Services at Jember Clinic Hospital

Value stream mapping of outpatient services starts from registration to entering the polyclinic. Waste mapping in the registration section will be mentioned in Table 2.

Table 2. Waste mapping in the registration section

Waste Category	Waste	Standard
Defect	SOPs are not optimal 100% (there are SOPs that have not been implemented such as the naming system and numbering system in case of duplication of medical record numbers).	There are 6 SOPs in the outpatient registration section
Over Production	Educating patient administrative requirements if the patient/patient's family does not understand	Patients must bring their KTP/KK/Birth Certificate, JKN/Askes card, valid referral (3 months)
Waiting	The total patient waiting time at registration is 34.17 minutes	SPMRS Standard No. 129 of 2008 the registration time is ≤ 10 minutes
Non Utilized	There are 3 officers with other educational	Minimum educational

Talent	backgrounds	background DIII/DIV/S1 in the field of health
Transportation	There is no pneumatic tube yet so BRM goes directly to the intended polyclinic so it takes a long time to provide it because the polyclinic is quite far away	The maximum time for providing medical records is 10 minutes
Inventory	a. Sometimes ATK supplies are lacking such as pens and paper b. The BRM folder was still a paper folder, making it difficult to stand up and causing difficulties in searching for BRM	ATK is always fulfilled
Motion	Officers carry out other activities when registering patients such as searching for ballpoint pens, joking, taking calls to ask for grocery orders, checking social media to see social media stories	Outpatient service hours are 07.00-14.00 with the duties and functions of registering patients, maintaining administrative order, and others.
Extra processing	a. SIMRS has not been integrated with all outpatient services b. SIMRS has not bridging with dukcapil and BPJS Kesehatan c. Not optimal online registration d. There is no standalone queue platform system yet	SIMRS must be integrated with the entire hospital process flow (Permenkes No. 82 of 2013 concerning SIMRS) as well as SNARS which requires online registration

Table 2 explains that the implementation of the SOP is not 100% optimal because there has not been socialization regarding the SOP in the registration section

Mapping Waste with Value Stream Mapping in the Outpatient Filing Section of Jember Clinic Hospital

The medical record is a part of medical support services whose existence is very important because it contains all the history of the patient's illness which can also be used as evidence in lawsuits. The benefits of medical records are also stated in the RI Minister of Health No. 269 of 2008, namely as administrative completeness, law enforcement evidence, financial matters, education, research, and documentation. The total time that was wasted was 4 minutes, but the total time to carry out activities was 24.03 minutes. Table 3 maps out the time-wasting activities that occur in the medical record department.

Table 3. Mapping of Waste in the Filing Section of the Jember Klinik Hospital

Waste Category	Waste	Standard
Defect	SOPs have not been implemented optimally such as retention systems and destruction systems	Permenkes No. 269 of 2008 concerning medical records
Over Production	There isn't any	There isn't any
Waiting	Misplaced medical record search	Decree of the Minister of Health No. 129 of 2008 concerning minimum service standards (10 minutes of providing medical records)
Non-Utilized Talent	Lack of human resources in filing and distribution	The standard for medical record officers based on WISN calculations (annual planning at Jember Klinik Hospital) is 4 people
Transportation	There are no tools to deliver	There is no standard tool but it will

Waste Category	Waste	Standard
	medical records to each polyclinic such as a pneumatic tube	result in a long patient waiting time
Inventory	1. The place for medical records is less extensive 2. Medical record shelves are lacking 3. Map is not a thick material	1. The standard number of medical record racks based on planning is 40 racks every 3 years 2. The design map must be made of thick material
Motion	There isn't any	There isn't any
Extra Processing	Placement of medical record files that are not in the right place because there is no outguide	Permenkes No. 269 of 2008

Table 3 explains that SOPs have not been implemented 100% optimally such as the naming system, retention system and destruction system. This is certainly not in accordance with the Regulation of the Minister of Health Number 269 of 2008 concerning medical records which states that writing names does not use titles and a retention system is carried out if the patient does not return for treatment for at least 5 years.

Mapping Waste with Value Stream Mapping at the Outpatient Polyclinic at Jember Clinic Hospital

The polyclinic is a place of service whose duty is to examine patients by looking at indications or symptoms suffered by patients and polyclinic officers (nurses/ midwives/doctors) will examine them according to complaints. There are 12 polyclinics in Jember Hospital, namely internal medicine polyclinic, eye polyclinic, children's polyclinic, neuro polyclinic, pulmonary polyclinic, heart and vascular polyclinic, urology polyclinic, ENT polyclinic, orthopedic polyclinic, digestive surgery polyclinic, neurosurgery polyclinic, obstetrics polyclinic. However, the focus of the research will be carried out in 3 polyclinics, i.e. internal polyclinic, children's polyclinic, and heart polyclinic because these three polyclinics have the highest number of visits at Jember Klinik Hospital. The number of health workers on duty at the polyclinic is 2-3 people. Table 4 maps the time-wasting activities that occur in the medical record department.

Table 4. Waste mapping in the Jember Clinic Hospital Polyclinic section

Waste Category	Waste	Standard
Defect	1. SOP is not optimal, such as readability of doctor's writing, prescription writing, doctor's presence 2. Doctor delay 40% 3. Incomplete medical record filling (SOAP)	SNARS Edition I of 2008
Over Production	-	Physician late limit of 15%
Waiting	1. Waiting for the doctor to come 2. The patient was not summoned because the medical record had not arrived	Decree of the Minister of Health No. 129 of 2008 concerning SPMRS (100% mandatory completion)
Non Utilized Talent	-	-
Transportation	Not optimal use of SIMRS	Determination of the doctor's

Waste Category	Waste	Standard
		time of attendance
Inventory	Lack of waiting chairs, especially the polyclinic which has the highest visits	Decree of the Minister of Health No. 129 of 2008 concerning SPMRS (maximum preparation time of 10 minutes)
Motion	-	-
Extra Processing	1. Ask for personal data that has been asked in the registration section 2. Officers must write in the medical record and must input it on the computer (double job)	SNARS Edition I Year 2008 (SIMRS must be integrated)

Table 4. Map of waste in the Jember Clinic Hospital polyclinic in 8 categories. The first category deals with defects which discuss Standard Operating Procedures that have not been implemented optimally. The SOPs that have not run optimally are the writing and legibility of the writing, the doctor's presence, and the completeness of the medical record. The doctor's writing that is difficult to read will make it difficult for the medical record officer to provide a diagnosis code. The doctor's delay was caused by several reasons, such as the doctor visiting another hospital, the doctor still visiting the inpatient room, and others. As is known, doctors do not only work in one place with different hours of service.

Analyzing Problems that Occur in Lean Management (Identification of Causes of Problems with Fishbone and Why To Why)

The results of the problem analysis in this study include Man, Money, Material, Method, and Machine. Human resources are the human components that work in the Jember Klinik Hospital in an outpatient installation. The cause of the long waiting time from the money factor is that there is no budget for bridging SIMRS, there is no budget for pneumatic tube tools, and there is no budget for independent registration.

There are 2 causes for the long waiting time at outpatient services from material factors, namely there is no special cabinet needed for ATK or medical devices and there is no thick and rigid folder. The cause of the long waiting time at outpatient services from material factors is that the policies and SOPs that apply at the Jember Klinik Hospital have not been maximized, including general outpatient service policies and Standard Operating Procedures (SOPs) for each unit. There are three reasons for the long waiting time at outpatient services from machine factors, namely not yet bridging between SIMRS and v-claims, there is no pneumatic tube, and there is no independent queue.

Analyzing at the Future State Stage (Future State Outpatient Flow, Describing Kanban)

Predetermined waste of time and determining the causes based on the results of interviews, observations and documentation, several improvements will be made to eliminate/minimize the waste that exists with the policy makers at the Jember Klinik Hospital. The complete repair plan will be mapped using the Hospital Failure Mode and Effect Analysis (HFMEA) method in determining repair solutions that have the potential to reduce or even eliminate this waste.

DISCUSSION

Determination of Outpatient Service Lead Time at Jember Clinic Hospital

Based on the results of data analysis, the waiting time in providing services from obtaining a registration card to obtaining the health services they need, and arranging medical record documents. Based on the standard for providing medical record documents, outpatient services are a maximum of 10 minutes (DepKes RI, 2008). Patient waiting the longest at registration occurred in Patient 5 because the patient took the queue number at 06.50 while the patient started being called was in queue number 26 and Patient 5 was a patient who had never been to the Jember Clinic Hospital so the KIE process for patients took longer (forgot to bring reference letter). In terms of the registration officer, the registration officer carried out the activity the longest on Patient 6 (BPJS patient) because when they were about to print the SEP, the SEP was in error so the registration officer made the SEP manually and wrote it down in the outpatient register book. This is in line with Bustani's research (2015) which stated that the cause of the length of registration was due to obstacles in making SEPs due to internet connection disruptions. The fastest activity of registration officers was Patient 3 for 5 minutes because he was a general patient and there were no special requirements for data verification, enough with an identity card. Patient 3's waiting time is also faster because he gets queue number 5 for general patients.

The next activity is making/searching for BRM carried out by filing officers, the median or midpoint of the activity of making Medical Record Files (BRM) for new patients or searching for BRM for old patients is 8.5 minutes, the median of BRM distribution activities is 3 minutes, and the median of BRM search activities for old patients due to misfiles is 9 minutes.

The longest time was in Patient 2 because the patient's BRM was not found due to a misfile. Misfiles can mean that the BRM has been misplaced, the BRM has been lost, or the BRM is not yet in the polyclinic and has not been returned to the filing room. Another consequence of the misfile of medical record files is that registration officers create new medical records for patients so that patient information is not sustainable (Karlina, et al., 2016). The fastest time for making/looking for BRM was in Patient 3 because patient 3 was an old patient so the data had been previously recorded and the location of the BRM was where it should have been. The next activity is the distribution of BRM, the fastest distribution of BRM in Patient 3 because the location of the deep poly is close to the filing room while the distribution of BRM takes the longest time in Patient 2 because the location of the farthest poly is the children's poly.

The results of calculating the average length of waiting time starting from registration until the patient gets an examination by a doctor is 131.125 minutes or 2 hours 13 minutes 5 seconds. This time is definitely far from the Minimum Hospital Service Standard of 60 minutes which starts from the registration counter until the patient enters the polyclinic to get an examination (Ministry of Health, 2008)

Flow of Outpatient Services at Jember Klinik Hospital

Outpatient service flow (outpatient waiting time) starts from the patient registering at the Outpatient Registration Center (TPPRJ) until the patient is examined by a specialist

Value Stream Mapping Outpatient Services at Jember Clinic Hospital

Value Stream Mapping collects all information on each process cycle time, resource

utilization, timing, work in progress, workforce requirements, and information flow. This information also includes work that has added value (value adding activities) as well as work that is not value added (non value adding activities) (Syahri et al., 2017).

Value stream mapping of outpatient services starts from registration to entering the polyclinic. The registration process carried out by the registration officer is registering patients and verifying data. If the patient is JKN, the SEP will be printed on the v-claim website. The process required for the registration process is 43.50 minutes with details of the patient waiting time at registration 34.17 minutes while the process of the registration officer's activities is 9.33 minutes. The next process is making/searching for medical records which is carried out by filing officers, namely making medical records for new patients by writing them on the medical record folder using a black ink marker while for old patients searching for medical records is carried out in the filing room with the polyclinic stamped. The total time required for making/searching for medical records was 10.50 minutes, with details of the time waiting for the files to arrive at the polyclinic was 10.33 while the activities for recording/searching for BRM took 20.80 minutes.

Patients then proceed to the designated polyclinic, which in this study included the internal, cardiac, and children's polyclinics. Key activities at the polyclinic involve staff (nurses/ midwives/ doctors) taking histories, conducting examinations, and providing education. The total time spent at the polyclinic averaged 142.67 minutes, with 117.33 minutes waiting and 25.34 minutes for medical activities. Overall, the total time from registration to examination was 196.67 minutes, far exceeding the Ministry of Health's standard of ≤60 minutes for outpatient services (Ministry of Health No. 129 of 2008).

Analyzing Problems that Occur in Lean Management (Identification of Causes of Problems with Fishbone and Why To Why)

Human resources at Jember Klinik Hospital play a significant role in outpatient service delays. Key factors include: (1) staff engaging in non-essential activities such as searching for pens, using cell phones, and making calls between rooms; (2) doctors arriving late due to their busy schedules; and (3) repeated verification by staff.

The cause of the long waiting time at outpatient services based on the money factor is that there is no budget for bridging SIMRS, there is no budget for pneumatic tube devices, and there is no budget for independent registration. There is no budget yet for bdridging, pneumatic tubes and self-registration because the budget is prioritized for other services such as buying medical devices, medicines and consumables. In addition, not every month the budget increases but fluctuates, meaning that the budget fluctuates, so the budget needs to be planned in such a way that Jember Klinik Hospital's finances are stable and can prosper all hospital employees.

The long waiting time at outpatient services is caused by two material factors: the lack of a special cabinet for stationery or medical devices and the absence of thick, rigid folders. This makes it difficult for officers to retrieve tools and stationery. Additionally, the method factor contributing to the long wait times is the current policies and SOPs at Jember Clinic Hospital, which include general outpatient service policies and specific SOPs for the Outpatient Patient Registration Center and each polyclinic.

There are three reasons for the long waiting time at outpatient services from

machine factors, namely not yet bridging between SIMRS and v-claims, there is no pneumatic tube, and there is no independent queue. The first cause is not bridging between SIMRS and v-claims because there is no budget planning for bridging between SIMRS and v-claims because the budget is prioritized for medical devices, equipment maintenance, medicines, and consumables. Second, the machine factor is that there is no pneumatic tube because there is no budget planning for pneumatic tube because the budget is prioritized for medical devices, tool maintenance, medicine, and consumables. The third of the machine factors is the absence of an independent queue.

Analyzing at the Future State Stage (Future State Outpatient Flow, Describing Kanban)

To identify the causes of predetermined waste of time, interviews, observations, and documentation were conducted. Based on the results, improvements will be made in collaboration with policymakers at Jember Klinik Hospital. The complete repair plan will be mapped using the Hospital Failure Mode and Effect Analysis (HFMEA) method to find solutions that can reduce or eliminate the waste.

The outpatient service flow begins when the patient arrives and continues until the patient is examined by the doctor. The proposed service flow remains similar to the previous one but includes modifications such as optimizing online registration. This online system integrates with the pharmacy and SIMRS to detect and inform patients of their waiting time. Online registration serves both new and returning patients via an application at Jember Clinic Hospital.

AUTHORS CONTRIBUTION

Nabella Arina Muna Hanesya as the main researcher who selects topics, collects data, analyzes data, and writes publication manuscripts. Candra Bumi and Dewi Prihatini as research members who assisted in preparing the publication manuscript.

CONFLICT OF INTEREST

There is no conflict of interest.

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