

## Conference Paper

# Logistic Service Efficiency Using Value Stream Mapping Approach in the Pharmacy of Class-I Prison Clinic, Malang

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**Abstract**

A clinic is a healthcare facility providing basic services for individual health, a pharmacy is one of the installations of a clinic. The task of a pharmacy as a unit of a clinic is to organize, coordinate, manage and supervise all pharmacy-related services. The logistics management activities at the Class-I Prison Clinic of Malang include planning, requesting, receiving, storing, distributing, controlling, recording and reporting, as well as monitoring and evaluation. The current research was conducted on the four activities of requesting, receiving, storing and distributing. This study utilized the Value Stream Mapping (VSM) theory as an effort to reduce waste. The study used a quantitative descriptive method with a cross-sectional design. A total of 97 samples including workers involved in logistics management activities and patients seeking treatment were chosen using an accidental sampling method with the Taro Yamene formula. Data were collected through documents, interviews and observations. The results obtained in the distribution process considered all four activities, however, there was still some waste during the process. The calculated value added ratio (VAR) was 61.46%, which means that the clinic implements a lean management.

**Keywords:** logistic management, distribution, value stream mapping, drugs

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## 1. Introduction

A clinic is a first-level health facility provided to serve basic or specialized services for individual health [1]. One of the installations in the clinic is a pharmacy. Pharmacy is one of the units in a clinic that aims to organize, coordinate, manage, and supervise all pharmacy services and conduct pharmaceutical technical guidance in the clinic [2]. The activity in pharmacy is called clinical pharmacy services which consists of two

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activities: managerial and pharmacy services. Managerial activity is in charge of managing pharmaceutical supplies and disposables [2]. The management of pharmaceutical supplies and disposables is related to logistics management. Logistics management is all available resources in which the process of mobilization and utilization can be efficient and effective. Logistics management aims to ensure that the logistics can meet the demands, both in quantity, type, and quality efficiently and effectively. Planning, budgeting, implementing, storing, distributing, and evaluating are the activities included in logistics management [3].

According to the data obtained from the correctional database system in October 2019, there are 3,080 assisted residents both prisoners and convicts who inhabit the prison. The normal capacity of Class I Prison in Malang is 936 assisted residents (prisoners and convicts). Looking at the normal capacity of the prison, it is clear that Class I Prison in Malang is experiencing overcapacity by 229% [4]. Overcapacity can cause many problems inside the prison, including health problems. Based on the Government Regulation Number 32 Year 1999 concerning The Requirements and Procedures of the Implementation of the Rights of Assisted Residents, Clause 14 paragraph (1) stated that "Every Prisoner and Correctional Children have the right to get proper health services. In every correctional institution, a polyclinic and its facilities are provided and at least a doctor and one health personnel are provided" [5].

One of the health facility units that can be used by WBP (Warga Binaan Pemasarakatan or Correctional Assisted Residents) to solve their health problems is Class I Prison Clinic Malang. Managerial pharmacy service is one of the services provided in Class I Prison Clinic Malang. This activity is intended to meet the needs of pharmaceutical supplies. Without good and sufficient pharmaceutical supplies, the services carried out in pharmaceutical installations can be hampered. The activity in pharmacy service, besides sufficient pharmaceutical supplies, must also be supported by human resources as well as good facilities and infrastructure.

A research done by Maula (2019) stated that there are many waste problems in the service of Class I Prison Clinic Lowokwaru. It is stated that 27 waste activities occur during the service. One of the waste occurs in pharmacy service. The previous study stated that the waste happened in the waiting process of the drug prescription distribution in the pharmacy service. The required time before drug service is 43.59 seconds and during drug service is 43.24 seconds. The recapitulation of the frequency calculation regarding the impact on the process shows that there is a time waste by 6.17% which makes the waiting process of the drugs prescription distribution included

in the three processes with the highest score from all activities in the Class I Prison Clinic Malang [6].

From the above statement, an alternative and solution are needed to solve the problem. Value Stream Mapping (VSM) approach can be used to reduce waste in pharmacy, especially in the distribution activity. VSM aims to give a real picture using a technique by identifying non-valuable added activities in the company [7].

Departing from the problem stated before, the researchers wanted to research the logistics management activities in the pharmacy service of the Prison Clinic. The researchers used VSM approach as an effort to reduce waste in the distribution activity in the Unit of Pharmacy Class I Prison Clinic Lowokwaru Malang. The purpose of this research is to identify and analyse the logistics management activities in the Unit of Pharmacy Class I Prison Clinic Lowokwaru Malang.

## 2. Material and Method

The research was conducted using a quantitative descriptive method that aims to describe the process of drug distribution in Class I Prison Clinic Malang by using Value Stream Mapping (VSM) as the approach. The researcher used a cross-sectional study design or a one-time observation to collect the data. The respondents in this research are the workers involved in logistics management activities and pharmacy installations as well as the patients that involved in drug distribution activities in the Class I Prison Clinic Malang. A total sample of 97 people was taken using accidental sampling method using the Taro Yamene formula. The data was collected by conducting an interview and observation, as well as finding related documents to support the data. Interview guidelines refer to the Minister of Health Regulations Number 74 Year 2016 concerning the Standard of Pharmaceutical Services at Puskesmas was used as the instrument of the research.

## 3. Results

### 3.1. General description of the research location

Class I Prison Malang is located in Asahan Street Number 7, Bunulrejo, Blimbing, Malang City, East Java. Class I Prison Malang consists of a land area of about 50,110 square meters and a building area of 14,679 square meters. Class I Prison Malang has a normal capacity of 936 prisoners and convicts. However, the total of prisoners and convicts

that inhabit the Class I Prison Malang is 3,186 people. Class I Prison Malang is divided into 22 blocks with a total of 211 rooms. The clinic of Class I Prison Malang is located in Block 2 which is included in the Treatment Section.

Class I Prison Clinic Malang has a vision that says, “The realization of Class I Malang Correctional Facility that PASTI (Professional, Accountable, Synergic, Transparent, and Innovative)”. The missions of Class I Prison Clinic Malang are:

- a. Carrying out security with PASTI
- b. Carrying out guidance with PASTI
- c. Carrying out service with PASTI
- d. Carrying out household management and administration with PASTI

The human resources or workers involved at the Class I Prison Clinic Malang consist of 10 medical personnel (general practitioner and dentist) and nurse with details 2 general practitioners, 1 dentist, 6 nurses, and 1 psychologist. 1 person for health management data personnel and 2 people for logistics management in which consists of 1 general practitioner and 1 health management data personnel.

Class I Prison Clinic Malang offers several type of services. The services are:

- a. Outpatient service (Medical Ward and Dentistry Clinic)
- b. Inpatient service
- c. Psychological consultation
- d. Special service (for patient with TBC and HIV)

### 3.2. Drug distribution

According to the collected data from the interview, the drug distribution must follow several processes:

- a. The drug distribution activity begins from waiting for the prescription distribution which consists of a list of prescribed drugs written by the doctor based on the patient's illness.
- b. The prescription will be given to the health personnel to help fetch the prescribed drugs from the storage.
- c. The prescribed drugs are given to the patient.

The system of drug distribution in the service unit is by individual prescription. Individual prescription is a drug distribution which is done based on each person's prescription, both for outpatient and inpatient. The problem sometimes faced in the drug distribution activity is when there is a drug out of stock. When that problem occurs,

the prescription will be given to the patient. Then, the prescription will later be given to the patient's family during their visit, in which it becomes the patient's family duty to get the prescribed drugs.

### 3.3. Value stream mapping drug distribution

The research findings after conducting interview and observation are:

#### 3.3.1. Value stream mapping design

Current state value stream mapping aims to identify every activity, duration, and resources used in each process of drug distribution in the Class I Prison Clinic Malang. There are four activities in the process of drug distribution in the Class I Prison Clinic Malang. (see Appendix: Figure 1)

Based on Figure 1 (see Appendix), there are 4 steps in drug distribution. The steps are waiting for prescription distribution, distribution of the prescription, drug preparation, and delivering and KIE the drugs. The first step is when the patients wait for prescription distribution. The duration of waiting for prescription distribution is 44.30 seconds, with VA 42.53 seconds and NVA 1.77 seconds. Prior to this step, the patients are required to wait for the service for 42.68 seconds.

The second step is prescription distribution, in which the patients are given their prescriptions. In the second step, the patients spend 6.99 seconds, with VA 6.58 seconds and NVA 0.41 second. Before this step, the patients are required to wait for the service for 2.62 seconds.

The third step is drug preparation, in which the health personnel prepares the drugs based on the patients' prescriptions. In this step, the patients spend 32.81 seconds, with VA 30.62 seconds and NVA 2.19 seconds. Prior to this step, the patients are required to wait for the service for 3.71 seconds.

The last step is delivering and KIE the drugs, in which the patients will be given their prescribed drugs and the health personnel will give information regarding the drugs. In this step, the patients spend 13.13 seconds, with VA 12.27 seconds and NVA 0.86 seconds. Prior to this step, the patients are required to wait for the service for 3.71 seconds.

According to the Picture 1 (see Appendix) the calculation is described as follows:

a. Total CT with the formula  $CT = CT_1 + CT_2 + CT_3 + CT_4$

$$\begin{aligned} \text{CT total} &= 44.30' + 6.99' + 32.81' + 13.13' \\ &= 97.23' \end{aligned}$$

b. Total VA with the formula  $VA = VA1 + VA2 + VA3 + VA4$

$$\begin{aligned} \text{VA total} &= 42.53' + 6.58' + 30.62' + 12.27' \\ &= 92' \end{aligned}$$

c. Total WT with the formula  $WT = WT1 + WT2 + WT3 + WT4$

$$\begin{aligned} \text{WT total} &= 42.68' + 2.68' + 3.46' + 3.71' \\ &= 52.47' \end{aligned}$$

d. LT calculations with the formula  $LT = CT + WT$

$$\begin{aligned} \text{LT} &= \text{CT total} + \text{WT total} \\ &= 97.23' + 52.47' = 149.7' \end{aligned}$$

e. VAR calculations with the formula  $VAR = VA/LT$

$$\begin{aligned} \text{VAR} &= \text{VA total} / \text{LT} \\ &= 92 / 149.7 \times 100\% \\ &= 61.46\% \end{aligned}$$

Based on the calculations above, the result shows that the total of CT (cycle time) is 97.23 seconds, VA (value added time) is 92 seconds, WT (waiting time) is 52.47 seconds, and the total calculation of LT (lead time) is 149.7 seconds. So, the result obtained for the VAR (value added ration) calculation is 61.46%.

Provides information to run an improvement process. The information can be obtained from the waste classification in the drug distribution of Class I Prison Clinic Malang. The waste classification can be seen as follows:

1. Overproduction, producing more than what necessary for the next process. Overproduction type of waste in the process of drug distribution activities is when there are unnecessary drugs.
2. Waiting, the delayed time or waiting time. Waiting type of waste in the process of drug distribution is when the patient has to wait for the prescription distribution.
3. Material moving, unnecessary transportation or operation. Material moving type of waste is when workers have to take drug supplies from the warehouse because of running out supplies in the storage.
4. Excess production, unnecessary process or work procedures. Excess production type of waste is when in the drug distribution activities the workers put the same information in the patients' graphics.

5. Material waiting, producing, touching, and buying unnecessary supplies. Material waiting type of waste in the process of drug distribution is when there is an excessive stock of drugs until the expiration limit and the examination room is full of unnecessary things.
6. Excess motion, unnecessary treatment or steps. Excess motion type of waste in the process of drug distribution happens when the workers are looking for a pen, pencil, or other writing tools.
7. Defect, redoing the same tasks, fixing errors and equipment problems. Defect type of waste happens in the process of drug distribution activity when doctors make changes in the prescription because the drug is not available.

### 3.3.2. Process improvement

Process improvement is finding inefficient processes and opportunities to improve. This study used fishbone to analyse the cause of problem in the drug distribution process in the Class I Prison Clinic Malang (see Appendix: Picture 2). According to the fishbone analysis, several problems can cause waste in drug distribution to the patients. The causes of waste are:

#### a. Man

The problems can be caused by insufficient human resources in the services of the Prison Clinic. The Prison Clinic only has 2 general practitioners who also act as a logistics data manager. The drug distribution is also often done by the doctors with the help of the nurses. This problem occurs because there are no pharmacist assistants to help in distributing the drugs to the patients. Another cause is from the health personnel that has no prior education regarding pharmacy. The health personnel who distribute the drugs are doctors and nurses. The educational background of the doctors is bachelor's in medical education while the nurses are Certified-Mid Level or Diploma in nursing. The placement of the health personnel that does not fit their competence is also another problem caused by human resources. The reason for the wrong placement is because of the lack of human resources. Health personnel is often placed in the understaffed division although it does not fit their skills or competences.

## b. Method

The drugs are often stored not according to the recommendation stated on the drug packaging. This problem is caused by the lack of storage room in the Class I Prison Clinic Malang that only has 1 storage cabinet for keeping the drugs and 1 other cabinet located in the examination room to make it easy for drug distribution activity. Moreover, if there is not enough room to store the drugs in the cabinet, the drugs will be placed under and on top of the health personnel's desks. There is also no SOP (Standard Operating Procedures) which can lead to waste in drug distribution.

## c. Environment

Looking from the environment, the cause of waste in drug distribution is from the lack of room for the services. Class I Prison Clinic Malang only has a medical ward, dental treatment room, inpatient room, and health worker room. For patients who want to get general services will also be taken to the medical ward. This causes a lack of mobility for the health personnel which can result in waste when doing drug distribution.

## d. Material

There are two reasons caused by material that led to waste in distribution. The first cause is the lack of a storage cabinet for drug supplies. There is only a one-door storage cabinet which makes it hard to organize the drugs. The second reason is the lack of decent facilities and infrastructure. The lack of decent facilities and infrastructure makes it hard for the health personnel to find what they need. This problem can result in a longer waiting time for the patients and a waste in drug distribution.

### 3.3.3. Standardization

Standardization is an activity of recording the standard time of each process that has been improved and make the standardization of work so that the new duration for the process can be implemented properly in the future (future state value stream mapping). Based on the collected data, the result is stated as follows:

As it can be seen in Table 1, the standard time according to Basic Health Care Service Standards in Prison, Rutan, Bapas, LPKA and LPAS 2016 is a maximum of 300 seconds and the time needed for drug distribution activities in the Class I Prison Clinic Malang



TABLE 1: Comparison of the Time Standardization of Drug Distribution Activities in the Class-I Prison Clinic in Malang with the Basic Health Care Service Standards in Prison, Rutan, Bapas, LPKA and LPAS 2016.

No.	Type of service	Standard time	Prison service time
1	Waiting for prescription distribution	300 sec	42.53 sec
2	Prescription distribution		6.99 sec
3	Drugs preparation		32.81 sec
4	Delivering and KIE the drugs		13.13 sec
	<b>Total</b>		92 sec

Source: Author's own work.

is 92 seconds. The result shows that there is a difference by 208 seconds between the two services which means the process in Class I Prison Clinic in Malang is faster than the standard time.

## 4. Discussion

### 4.1. General description of the research location

The total of prisoners and convicts inhabit the Class I Prison Clinic Malang is 3,186 people, with 119 prisoners and 2,550 convicts. According to the correctional database system in October 2019, there are 3,186 assisted residents (prisoners and convicts) who inhabit the prison. The Class I Prison Malang is experiencing overcapacity by 229%, because in the correctional database system the capacity of assisted residents in the Class I Prison Malang should be 936 people, for both prisoners and convicts [4].

A previous study done by Balitbangkumham (2018) stated that an overcapacity that does not equivalent with the building area will result in very fast disease transmission between the prisoners and convicts. Bad sanitation can cause an unhealthy environment. In line with that, the monitoring and evaluation done by Correctional Facilities and State Detention Centers in the Ranks of the Ministry of Law and Human Rights Republic of Indonesia, Banten Regional Office stated that an overcapacity can give several negative impacts. The negative impacts are the morbidity rate for several infectious diseases increased, limited facilities and infrastructure can lead to not optimal disease control, not optimal services and fulfilment of rights, increasing conflicts caused by psychosocial problems, and unsettled feelings caused by security problems [8].

Human resources and workers involved in the Class I Prison Clinic Malang consist of 10 medical personnel (general practitioners and dentists) and nurses, with details 2 general practitioners, 1 dentist, 6 nurses, and 1 psychologist. 1 person for health

management data personnel and 2 people for logistics management in which consists of 1 general practitioner and 1 health management data personnel.

The one in charge of the logistics management process is one of the general practitioners because no pharmacy assistant or health personnel has educational background regarding pharmacy. However, the general practitioner has been managing the logistics in the Prison Clinic for years which makes the general practitioner really experienced and skilled in doing the tasks. According to Hasibuan cited by Dadang (2020), a good performance can be achieved as the result of working and carrying out tasks based on skill, seriousness, experience, and time [9].

Supporting that, a previous study done by Mandang, Lumanauw, and Walangitan (2017) stated that the level of education does not correlate with the performance of workers. Human resources or workers in a certain position in the institution do not always match or even have the required skills for that position. This condition can happen because the workers are accepted in the position they are in right now not because of their skills but because of the availability of the position itself [10].

Based on the collected data, the type of services in the Class I Prison Clinic Malang are outpatient services in which consists of medical ward and dentistry clinic, inpatient services, psychological consultation, and special services (for patients with TBC and HIV). According to the Decree of Correctional General Director Ministry of Law and Human Rights Republic of Indonesia Number PAS-32.PK.01.07.01 Year 2016 concerning Basic Health Care Service Standards in Prison, Rutan, Bapas, LPKA and LPAS, stated that the type of health services in the Class I Prison Clinic Malang is already suitable with the pre-determined law [11].

## 4.2. Drug distribution

Drug distribution is a series of activities that aim to distribute or deliver drugs from the storage room to the services unit or patients by keeping the quality, stability, quantity, and punctuality. The purpose of drug distribution is to meet the needs of the service subunit in the right type, quality, quantity, and punctuality. There are several distribution systems that can be used in the service unit. The distribution systems are floor stock, individual prescription, unit dosing, and combination system [12].

Based on the collected data from the interview, the process of drug distribution in the Class I Prison Clinic Malang begins from waiting for the prescription distribution which consists of a list of prescribed drugs written by the doctor based on the patient's illness. Then, the prescription will be given to the health personnel to help fetch the prescribed

drugs from the storage. After that, the prescribed drugs are given to the patient. The system of drug distribution in the services unit is by individual prescription. Individual prescription is a drug distribution that is done based on each person's prescription, both for outpatient and inpatient.

In individual prescription system, the drug will be distributed according to the patient's prescription from the doctor. Health personnel has to give information on how to use the prescribed drugs because the patients will be using the drugs without supervision from the health personnel (Muhammad Fais Satrianegara & Bujawati, 2018). There are several advantages in implementing individual prescription system in drug distribution. The advantages are: (1) Pharmacist can screen all individual prescriptions or orders; (2) Pharmacist, doctors, nurses, and patients can get the chance to professionally interact with each other; (3) Controlling pharmaceutical supplies can be carried out more closely; and (4) Easier in the process of administration [13].

The problem sometimes faced in drug distribution is when there is drug out of stock. When that problem occurs, the prescription will be given to the patient. Then, the prescription will later be given to the patient's family during their visit, in which it becomes the patient's family duty to get the prescribed drugs.

### 4.3. Value stream mapping drug distribution

Value stream mapping is a mapping method in planning, producing, and delivering products or services to customers, including the information flow and material [14]. The purpose of VSM is to identify non-valuable added activities and eliminate a process in the activities [15]. Several benefits in implementing value stream are stated as follows [16]:

- a. Inherent quality
- b. Create true flexibility
- c. Create higher productivity
- d. Clear up workspace
- e. Increase work safety
- f. Increase morale
- g. Reduce inventory costs

After conducting current state value stream mapping, the calculation results are obtained. Based on the calculation, the total CT (cycle time) is 97.23 seconds, total VA (value added time) is 92 seconds, total WT (waiting time) is 52.47 seconds, and total

LT (lead time) is 144.18 seconds. So, the result obtained for the calculation of VAR (value added ratio) is 61.46%.

The results of VSM will provide an overall rating about an organization or company. According to Gasperz (2007) if the value to waste or Value Added Ratio (VAR) reached  $\geq 30\%$  then it can be concluded that the organization or company is successful in implementing lean management. The VAR result of the Prison Clinic shows that it reached  $\geq 30\%$  which means the Prison Clinic is successful in implementing lean management [17].

A previous study done by Wulandari (2020) stated that the lead time for a concocted prescription is 100.4 seconds with VAR for a concocted prescription is 67%, while the lead time for a non-concocted prescription is 45.2 seconds with VAR for a non-concocted prescription is 48%. The result above means that the service for a drug prescription in outpatient pharmacy installations of RSUD (Regional General Hospital) Awahab Sjahranie Samarinda included in the lean category [18]. Lean management is an effort done systematically and continuously with the available resources for enhancement and improvement by focusing on customer evaluation and eliminating waste [19]. According to Radnor (2012) cited by Firman (2017), several factors are determining the success in the implementation of lean management are: (1) Organizational culture, (2) Leadership and management commitment, (3) The resources availability, (4) Communication strategy, and (5) Organizational support.

Based on the problem analysis using the fishbone diagram, the researchers created a design improvement proposal. Design improvement proposal means to help the institution in solving the existing problems. It consists of short-term, medium-term, and long-term design improvements. The design improvement proposals are stated as follows:

1. Short-term design improvement proposal is an improvement that can be done in 3 to 6 months and does not require large costs so that it can be done immediately and does not take too long to finish [20]. The short-term design improvement proposals are stated as follows:

a. Prepare the writing tools needed prior to the work time to avoid looking for writing tools when the service starts.

b. Arrange the room using the concept of 5S (Seire, Seiton, Seiso, Seiketsu, Shitsuke) system or 5R (Ringkas, Rapi, Resik, Rawat, Rajin) in Indonesian which means order, proper, cleanliness, purity, and commitment. 5S/5R designed to reduce waste and focus on positive attitude in the organization [21].

2. Medium-term design improvement proposal is an improvement that can be done in 6 to 12 months with certain costs and additional facilities with minimum costs [20]. The medium-term design improvement proposals are stated as follows:

- a. Implement 5S system to enhance positive attitudes in workers.
- b. Recruit more workers to help in drug distribution services so that there is no heap of prescription because only one worker is carrying out the duty.
- c. Give training to the workers, especially the workers in drug logistics management to make the service more efficient.
- d. Separate the examination and drug distribution room, so that the patient does not have to queue up for check-up and distribution services.

3. Long-term design improvement proposal is an improvement that can be done in more than 12 months and require big costs so that it needs Directors' decisions in the implementation [20]. The long-term design improvement proposals are stated as follows:

- a. Provide more room for drug supplies and medical tools, so that the storage can be adjusted according to the rules.
- b. Provide more room for drug distribution, so that there will be separated room for examination and drug distribution and the patient does not have to queue up for too long.
- c. Get more human resources that can support the services, especially pharmacists, to make the drug distribution service more efficient.

According to Basic Health Care Service Standards in Prison, Rutan, Bapas, LPKA and LPAS 2016 as stated in Table 1, the standard time for drug distribution services is a maximum of 300 seconds. However, the time needed in drug distribution at the Class 1 Prison Clinic Malang is 92 seconds. The total time difference between the standard and Class1 Prison Clinic Malang is 208 seconds which means the process in the Class1 Prison Clinic Malang is a lot faster than the standard time [11].

The waiting time for prescription in the Prison Clinic is in line with a previous study that stated the waiting time for a complete prescription is less than 13 minutes [22]. The study explained that the waiting time for perception is included as one of the variables of Responsiveness. Outpatient satisfaction rates will decrease if prescription completion takes too long.

The statement above is supported by a study done by Hayaza (2012) that explained the lowest score for the Responsiveness dimension is -0.56 and -0.87 for the time it takes during the drug service in which really affecting patient's satisfaction rates [23].

According to a research done by Kastella & Ayu (2019), the obtained statistical data shows that  $H_0$  is rejected which means the waiting time for pharmacy service will affect patient satisfaction rates. Service satisfaction has a role in increasing the loyalty of the Health Service [24].

## 5. Conclusion

Drug distribution is carried out by using an individual prescription system in which patient will get drugs according to the prescription written by the doctors. Drug distribution service has 4 activities: waiting for prescription distribution, prescription distribution, drug preparation, and delivering and KIE the drugs to the patient. After calculating the data, it is found that the total CT (cycle time) is 97.23 seconds, total VA (value added time) is 92 seconds, total WT (waiting time) is 52.47 seconds, and total LT (lead time) is 149.7 seconds which makes the total calculation of VAR (value added ratio) is 61.46%. The result shows that the Prison Clinic is successful in implementing lean management.

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## Conflict of Interest

The authors declare that there is no conflict of interest.

## Appendix

Information:

1. CT (cycle time), is the time needed to complete one task or activity.
2. VA (value added time), is the time spent in every process.
3. NVA (non-value added time), is the time difference between CT and VA.
4. WT (waiting time), is the delayed time to complete one of the tasks and the beginning of another cycle of the task.

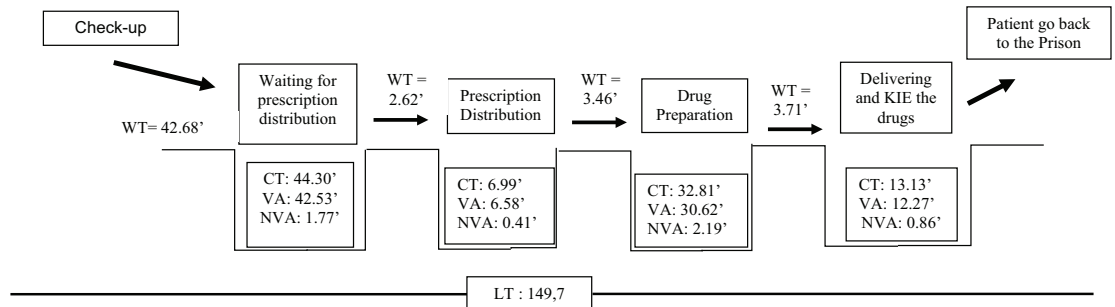


Figure 1: Current Value Stream Mapping Drug Distribution in the Class I Prison Clinic Malang

5. LT (lead time), is the time spent by the patient from the beginning until the end of the services.

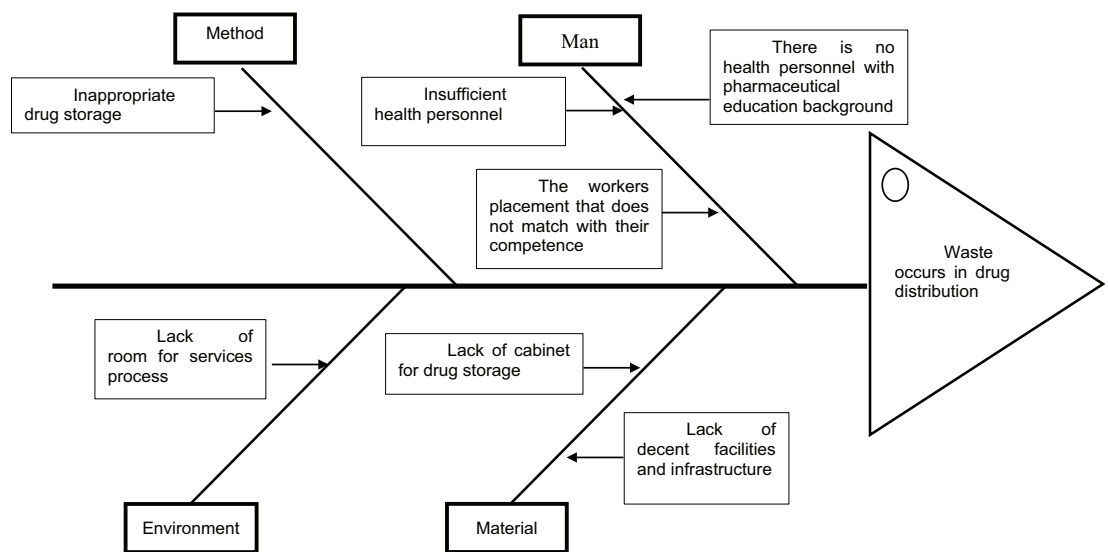


Figure 2: Fishbone Analysis

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