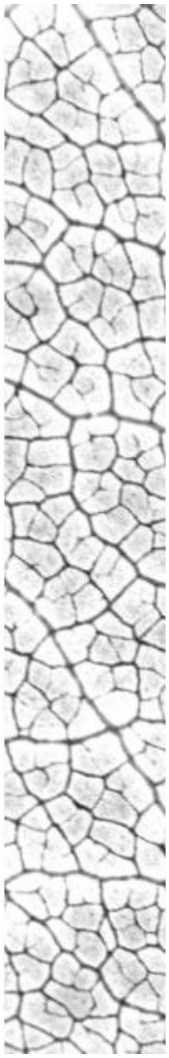

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Implementation of lean management to reduce waiting time for drugs in Islamic Hospital, Surabaya

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Abstract

Introduction: Outpatient pharmacy services in Islamic Hospital, Surabaya, still have problems regarding the length of waiting time. This study aimed to reduce the length of waiting time for outpatient pharmacy services by implementing lean management.
Methods: A quantitative study was carried out in the outpatient pharmacy service unit at Islamic Hospital of Surabaya from January to March 2018.
Results: This study showed that the average time at each stage of the process for non-concoction drugs, for the process of the insurance debtor was 56.86 minutes, followed by the (National Health Insurance Board) BPJS debtor with the time was 54.50 minutes and the cash debtor with time a total of 50.67 minutes. It showed non-concoction drugs with working time before the intervention with an average of 60.546 minutes to 33.474 minutes.
Conclusion: The implementation of lean management can reduce the length of waiting times for pharmacy services in outpatient units from non-concoction and concoction drugs.

Keywords: waiting time, lean management, waste

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INTRODUCTION

Pharmacy services must be carried out with due regard to the quality of high-quality pharmacy services, through well pharmacy services too (Curtiss, et al.2004; Downing, 2015). Pharmacy services include the supply and distribution of all pharmacy supplies, clinical pharmacy services, making information, and guaranteeing the quality of drug services (Gray, et al. 2005). Good pharmacy service is one of the benchmarks of service quality in a hospital. One important aspect of pharmacy service is the management of the length of time for drug services (Afolabi & Erhun, 2003; Hakim & Irbantoro, 2015; Kumari, et al. 2012). Service quality approach originally has five dimensions, including tangibility, empathy, responsiveness, reliability, and assurance (Lubis, et al. 2017). Employee commitment and customer satisfaction are reciprocally related to internal and external attributes (Yusuf, et al. 2019). The service quality determinants are measuring, controlling, and improving customer service quality (Tuami, et al. 2018). Pharmaceutical care has become an important subject to optimize patient care (Nasution, et al. 2014). The pharmacist role is not only responsible for product-oriented but also to identify, manage and prevent the patient's drug-related problems (Tanjung & Nasution, 2017).

Pharmacy services in Islamic Hospital, Surabaya, become one of the service units having an important role in hospital operations. The performance of pharmacy services leading to the emergence of revenue for hospitals dominates the proportion of overall hospital revenue. The performance of pharmacy services in achieving production based on the number of recipes served in 2014 and 2015 showed that the number of recipes served by this pharmacy unit has grown from 212.810 recipes to 251.271 recipes or 18% from 2014 to 2015. This growth gives an overview that in the future, the number of recipes served will continue to increase which must be balanced with the quality of service in various aspects. Specifically for service quality, in terms of pharmacy services in outpatient pharmacy, Islamic Hospital in Surabaya has a problem that needs to be immediately followed up; this is the length time for pharmacy services in outpatient pharmacy services. This waiting time is the time from the patient takes the drug in the queue until the drug is received by the officer to the patient. Patients have to go through several consecutive stages in pharmaceutical service to get a

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pack of complete medication (Pertiwi & Rochmah, 2019).

The waiting time for pharmacy services in outpatient pharmacy has been evaluated in the routine activities of the Quality and Risk Management (QRM) unit, which conducts regular customer satisfaction surveys for all units, including the pharmacy unit. The customer satisfaction survey is conducted once every six months, with respondents being both inpatients and outpatients according to the units surveyed (Kembe, et al. 2012; Sharma & Chowhan, 2013).

The customer satisfaction survey in Islamic Hospital of Surabaya provides information about the types of complaints occurring in customer satisfaction surveys for pharmacy services. The highest number of complaintsfor each period is the dimension of responsiveness; that is the length time for drug services. The percentage of complaints about waiting times ranges from 16.9% to 62.3%. This customer satisfaction survey must be continuously evaluated to find solutions to reduce the length of waiting time. The newest aspect in this method is by using lean hospital that the hospital can meet the needs of patients optimally, can provide maximum health care to patients by reducing waste which will ultimately create added value for the hospital (Usman & Ardiyana, 2017). Therefore, researchers conducted research to analyze the length of waiting time for pharmacy services in outpatient pharmacy services at the Islamic Hospital of Surabaya.

METHODS

This was quantitative research. The first measurement was done when the initial data were taken by calculating outpatient pharmacy time. After the lean cultural intervention was performed, the second waiting time was measured based on the waiting time of outpatients in the form of action research by conducting case studies in the unit of analysis. The research activity was carried out in the outpatient pharmacy service unit at Islamic Hospital of Surabaya. The study was conducted on January to March 2018. The unit of analysis of this study was the pharmacy service unit of Islamic Hospital of Surabaya, specifically the outpatient pharmacy service, which served concoction and non-concoction drugs. The information was obtained from several sources of information, unit managers, responsible parties, supervisors, and pharmacists. Meanwhile, the information on the waiting time was obtained from the IT application for 30 days with the average patients every visit each day. Collecting information was conducted from officers through interviews, and Focus Group Discussion (FGD).

RESULTS

The analysis of the time required in the process of drug treatment in outpatient pharmacy was done by taking data from IT applications, in the form of data on the length of the waiting time from the time of taking the queue number to the delivery of the drug. The waiting time data were compared from the three insurance, BPJS, and cash debtors. The data were taken through a sample with a period of one month of May 2017. This sample was the data before the implementation of lean management. The presentation of data was divided into two, non-concoction drugs and concoction drugs with debtors divided into three: (1) Insurance, (2) BPJS, and (3) Cash. The analysis of the time required in the process of drug treatment in outpatient pharmacy consisting of non-concoction and concoction drugs are presented in **Table 1.**

Table 1. The Recapitulation of Waiting Time for Non-Concoction Drug Services

The order of data collection day	Average Daily Waiting Time Per Patient for Non-concoction Drugs Services (minutes)		
	Before	After	Decrease
1	57.64	37.78	19.86
2	60.2	38.08	22.12
3	62.1	37.94	24.16
4	57.64	35.46	22.18
5	48.23	23.67	24.56
6	58.64	32.02	26.62
7	59.13	35.71	23.42
8	62.16	40.84	21.32
9	64.23	41.81	22.42
10	61.66	39.1	22.56
11	62.12	38.92	23.2
12	45.12	19.36	25.76
13	59.12	36.5	22.62
14	58.64	36.32	22.32
15	54.21	29.69	24.52
16	54.32	32.16	22.16
17	57.12	37.26	19.86
18	55.64	35.88	19.76
19	52.12	31.56	20.56
20	58.64	36.3	22.34
21	57.22	37.36	19.86
22	58.64	36.21	22.43
23	49.92	30.06	19.86
24	57.23	35.11	22.12
25	58.64	33.97	24.67
26	42.15	18.5	23.65
27	57.27	36.11	21.16
28	53.24	31.62	21.62
29	61.46	39.32	22.14
30	61.23	38.69	22.54
Average Daily Waiting Time (minutes)	56.856	34.4437	22.43

Table 1 presents the average time at each stage of the process for non-concoction drugs. The process of the insurance debtor required the most time of 56.86 minutes, followed by the BPJS debtor with the time of the whole process stage of 54.50 minutes and the cash debtor with time a total of 50.67 minutes. This amount of time is in accordance with the large number of sub-processes owned by each debtor, where the sequence of the most process is insurance, followed by BPJS and cash.

DISCUSSION

This study shows that the implementation of lean management can reduce the length of waiting times for

pharmacy services in outpatient units from non-concoction and concoction drugs. The mean decrease was an improvement of 22.43 minutes for non-concoction drugs and 31.62 minutes for concoction drugs. The lean management policy applied at Surabaya Islamic Hospital has been implemented for a long time, but the evaluation process needs to be improved to run optimally. The implementation of lean management in the pharmacy unit of A Yani Islamic Hospital, Surabaya starts from the planning, procurement and purchasing, storage, preparation and distribution, return stages. The planning stage can provide efficiencies in reducing the purchase of cito drugs.

The implementation of lean management at the procurement and purchasing stages can provide efficiencies in reducing incidents of inaccurate drug delivery with orders and drug vacancies. The storage stage can provide efficiencies in reducing the incidence of drug stocks without labels and overflowing stock (Dammand, et al. 2014; Kim, et al. 2006). Implementation of lean management at the preparation stage can provide efficiencies in reducing waiting times for finished drugs. The distribution and return stages are expected to provide efficiency in reducing drug returns from space (Graban, 2009; Green, et al. 2015; Kovacevic, JMacuzic, 2016).

The implementation of lean management may not be easy, but it is worth to try it at any company. This section presents some of the benefits than can result from implementing lean to a company or an organization (Alwan, 2012). Improving the employees' competence is another benefit of lean implementation. More expertise and knowledge lead to faster work, improve the customer satisfaction, and reduce the cost for the organization. The limitation of this study is we only conducted this research in one specific hospital which can have their its organization characteristics. In addition, we also only used self-reported questionnaire. The number of our samples is also limited.

CONCLUSION

The waiting time analysis based on the process shows the identical conditions to the number of sub-processes in the service chain. The the longest average waiting time is service to insurance debtors, followed by BPJS and cash. This study shows that the implementation of lean management can reduce the length of waiting times for pharmacy services in outpatient units from non-concoction and concoction drugs. There is an influence between lean interventions on non-concoction drugs and concoction drugs.

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