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## Analysis Of Acceleration Affecting Factors during Waiting Time for Outpatient Services at Regional General Hospital (RSUD) Dr. Dradjat Prawiranegara, Serang Regency

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Waiting time is the time used by patients to get health services from the registration point to entering the specialist doctor's examination room. Ideally, the waiting time for an outpatient installation from registration to a doctor's examination is based on the Minimum Service Standard, which is 60 minutes. This study aims to analyse the effect of the length of provision of medical records, Competency of Human Resources, infrastructure and outpatient flow on the acceleration of waiting time for outpatient services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara, Serang Regency. The research method is quantitative method with individual research type. Sampling In this study, a non-probability sampling design was used as sampling method. The determination of the respondents who were used as samples was carried out using a purposive sampling method, including of 100 outpatient BPJS patients in 2021. The cross section and primary data were used as the research time and the data source, respectively. For the data analysis using multiple linear regression. The results of this study found the value of F-count (4.631) > F-table (2.46) and sig 0.05 (0.002 0.05) while  $H_0$  is rejected and  $H_1$  is accepted. It means that there is a significant influence between the provision of medical records, competence of human resources, infrastructure and outpatient flow on the Acceleration of Waiting Time for Outpatient Services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara, Serang Regency. On the other hand, the results of the study also found no effect on the Acceleration of Waiting Time for Outpatient Services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency, namely the provision of medical records and outpatient flow. The findings in this study indicate that the competence of human resources and infrastructure is the most dominant variable and influences the acceleration of waiting time for outpatient services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency

**Keywords:** Provision of Medical Records, Competence of Human Resources, Infrastructure, Number of Patients and Acceleration of Outpatient Waiting Times.

### 1. INTRODUCTION

Waiting time is the time used by patients to get health services starting from the registration point to entering the specialist doctor's examination room. The length of patient waiting time reflects how the hospital manages the service components which are tailored to the patient's situation and expectations. Long waiting times often occur in outpatient installations, because outpatient installations are one of the main doors for hospital services to people who need health workers. Waiting time in Indonesia is determined by the Ministry of Health through Minimum Service Standards. Each hospital must follow the Minimum Service Standards regarding waiting

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time. Minimum outpatient service standards based on the letter of Ministry of Health Number 129 / Menkes / SK / II / 2008 are less or equal to 60 minutes. In connection with the waiting time for outpatient services, many problems occur in outpatient installations, namely the provision of medical records, competence in human resources, facilities and infrastructure as well as the number of patients at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara. At the time of taking the registration number, the patient or patient's family must be early in the morning and some even queue before dawn to pick up the registration queue number at the registration counter which opens at 06.00 WIB in the morning. if people arrive late then it is feared that they

will not get a registration queue number, so you can get a small number and get a doctor's examination quota. After queuing for the registration number, it turned out that the intended doctor was sometimes not practicing at the RSUD dr. Dradjat Prawiranegara due to activities outside the hospital or being training without prior notification.

Competence in human resources is still found, such as officers who are less friendly to patients, officers lacking control of registration machines, officers who are not fluent in operating computers and lack of control over medical devices so that they become obstacles and slow down the waiting time for outpatient installations for patients at RSUD dr. Dradjat Prawiranegara. In addition the lack of discipline of doctors on duty at the polyclinic because they first visited inpatients, causing the waiting time for outpatient services to be longer and there was a buildup of patient queues to be examined at the outpatient installation. For infrastructure in the registration room and at the outpatient installation of the RSUD dr. Dradjat Prawiranegara, Serang Regency is still inadequate, seen from the lack of space, the limited seating of the patient, crowded and chaotic. The number of medical devices in outpatient installations is still limited, resulting in queues of patients and make waiting time become more longer .

The long outpatient flow at the RSUD dr. Dradjat Prawiranegara, Serang Regency makes the queue of patients visiting the outpatient installation is longer. It will result in congestion in the registration room and the outpatient polyclinic room so that it can cause the waiting time for the outpatient installation to be longer than the time specified in the SPM, namely  $\leq 60$  minutes. The aims and contributions of the research are " to know and analyze of Factors Affecting the Acceleration of Waiting Time for Outpatient Services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency "

## 2. METHODOLOGY

Waiting time for services is a representation of the initial interaction between consumers and service providers [1]. Time is seen as a resource which one must be careful in using it. The more valuable a consumer's time is, the more negative the perception will be if it is wasted [2]. The factors for the length of time waiting for patients are common in developing countries, namely: Insufficient equipment, long registration procedures , The large number of patients, and insufficient human resources [3]. Here, the definition of a medical record as a compendium which contains information about the patient's condition during treatment or during the maintenance of his health [4]. Medical records are facts related to the patient's condition, medical history and past and current medications written by the health profession that provides services to these patients [5]. The indicators used are

Patients coming, Registration, Interview and Polyclinic. Thus, the competence is the knowledge, skills, and abilities that a person has, which is a part of himself, so that he can carry out the appearance of certain cognitions, affections, and psychomotor behaviors [6]. The indicators used are knowledge, skills, attitude and abilities. Here, a hospital facility that the completeness of hospital facilities also determines patients in choosing health services [7]. Hospitals need to pay attention to hospital facilities in formulating strategies to attract consumers. Means are all physical objects that can be visualized by the eye or felt by the five senses and are easily recognized by the patient and are generally part of a building or the building itself. Thus, the factors that affect hospital facilities and infrastructure are changes in the nature of the disease, introduction of technology, increasing public and political expectations, creation, and new financial mechanisms [8]. Here, flow is a story that contains a sequence of events, but each event is only connected causally, one event which is caused or causes to occur is all information, clues, references relating to time, space, and the atmosphere of the event in an activity [9]. Thus, in this study we proposed five hypotheses to analyze waiting time acceleration (see Figure 1).

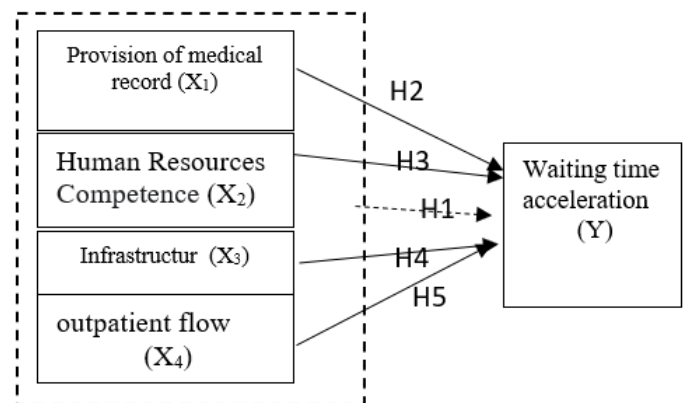


Figure 1. Hypotheses framework study

Figure 1 was described the relationship between variables and research hypotheses as follows:

- H<sub>1</sub>:** *There is an influence between the provision of medical records, competence of human resources, infrastructure and outpatient flow on the acceleration of waiting time for outpatient services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency*
- H<sub>2</sub>:** *There is an influence between the provision of medical records on the acceleration of the waiting time for outpatient services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency.*
- H<sub>3</sub>:** *There is an influence between the competence of human resources on the acceleration of waiting time for outpatient services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency.*

**H4: There is an influence between infrastructure on the acceleration of the waiting time for outpatient services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency.**

**H5: There is an influence between the flow of outpatients to the acceleration of the waiting time for outpatient services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency**

In this study, we use quantitative research methods with the data observation taken from February to April 2021. The population in this study were selected of outpatients at the RSUD dr. Dradjat Prawiranegara around 130,325 patients' observation. Determination of the respondents which used as the sample in this study was carried out by using purposive sampling method. The validity test uses Pearson Product Moment Correlation, it is said to be valid if the calculated  $r$  value  $>$   $r$  table. Data from 100 respondents were taken for validity testing. Invalid questionnaire items were not included in further analysis. The reliability test used the Cronbach Alpha ( $\alpha$ ) test  $>$  0.6, it was found that all the variables of this study were reliable. All variables tested for reliability were found to be eligible. Multiple Linear Regression Analysis is an analysis used to determine the relationship and influence of several independent variables on the dependent variable using SPSS 19 software.

**3. RESULTS AND DISCUSSION**

**A. Description of Respondent**

In this study we divided the data sampling with four criteria (see Table I).

Table I. Data sampling observation

No	Respondent of characteristics	Sum	Presentation
1	<b>Gender</b>		
	Man	40	40%
	Woman	60	60%
	<b>Total</b>	<b>100</b>	<b>100%</b>
2	<b>Age</b>		
	< 20 age	5	5%
	20 – 30 ages	24	24%
	31 – 40 ages	31	31%
	41 – 50 ages	25	25%
	> 50 age	15	15%
	<b>Total</b>	<b>100</b>	<b>100%</b>
3	<b>Last educations</b>		
	Primary school	-	0
	Junior high school	17	17%
	Senior high school	43	43%
	D3/S1 or equivalent	30	30%
	Other	10	10%
	<b>Total</b>	<b>100</b>	<b>100%</b>
4	<b>Livelihood</b>		
	Student	5	5%
	Government employees	36	36%
	Private employees	30	30%
	Entrepreneur	25	25%
	Tireted	4	4%
	<b>Total</b>	<b>100</b>	<b>100%</b>

Based on the Table I, it shows that 60% of respondents were female and remaining 40% were male. It indicates that the female respondents are more filled out of the questionnaire. About 31%, 25%, 24%, 15% and 5% of respondents who answered the questionnaire, most of

whom filled out the questionnaire were patients aged 31-40 years, 41-50 years, 20-30 years, above 50 years, and less than 20 years, respectively. Furthermore, about 43% of respondents who answered the questionnaire mostly answered the questionnaire with high school education, 30% had D3/S1 education, 17% had junior high school education, while the smallest 10% had other education. As many as 36% of respondents who answered the questionnaire mostly worked as civil servants, 30% as private employees, 25% as entrepreneurs, 5% as students and the smallest 4% as pensioners. Thus, the reason why the researcher took the characteristics of the respondents based on gender, age, last education and occupation, this will affect the respondents' answers.

**B. Description of Research Variables**

In this study we divided the respondent response matrix data sampling with four criteria (see Table II).

Table II. Respondents Response Matrix

No	Variable	Respondents response position			
		Low	Medium	High	behavior
1	Provisions medical record			v	understand
2	competence of human resources			v	competent
3	Infrastructure			v	Adequate
4	Outpatients flow			v	Already meet SPM

From the Table II, the respondents' responses to the provision of medical records, human resource competence, infrastructure, outpatient flow and waiting time acceleration at RSUD dr. Dradjat Prawiranegara Serang Regency is considered the patient has understood the registration procedure, the competence of human resources officers is competent in the field of Outpatient Installation, with the facilities and infrastructure of dr. Adequate Dradjat Prawiranegara Serang Regency provides a sense of comfort to patients, patients understand the outpatient flow because the process to get a queue number is very easy and does not take a long time, this is because the waiting time at the outpatient installation is in accordance with Minimum Service Standards (SPM) .

**C. Classic assumption test**

The regression model classic assumption test aims to determine whether the data used has met the regression assumptions or vice versa. The results of data processing to test the classic assumptions of the regression model of researchers using IBM SPSS 19.

**D. Normality test**

The results of the normality test for the provision of medical records, competence of human resources, infrastructure and outpatient flow to the Acceleration of

Outpatient Service Waiting Time can be seen in the following graph (see Figure 2).

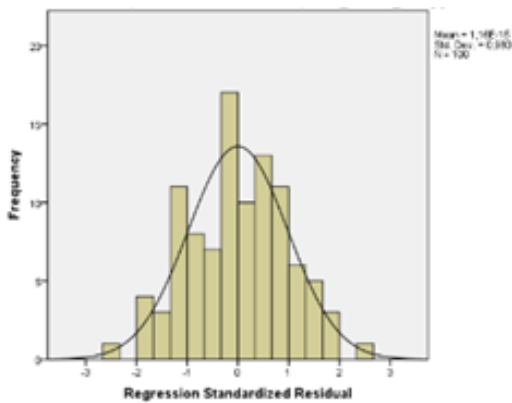


Figure 2. Normality Testing Graph analysis (Histogram)

By looking at the Figure 2, it can be concluded that the regression model fulfills the normality assumption, it can be seen that the curve on the histogram graph forms a bell pattern (see Figure 3).

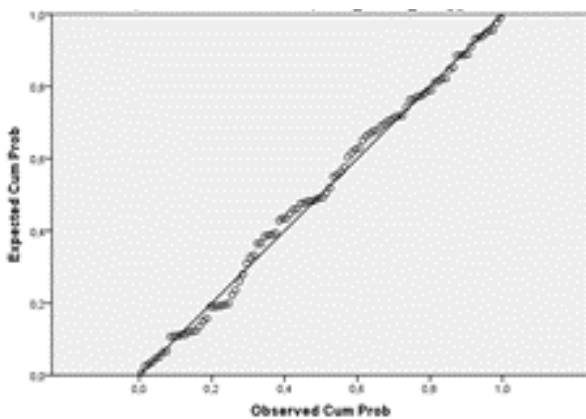


Figure 3. P-Plot Normality Test Curve

Based on the graphic display above, it appears that the dots spread around the diagonal line and the distribution follows the direction of the diagonal line so that this regression model fulfills the normal assumptions.

*E. Hypothesis test*

Multiple regression analysis is a regression in which a dependent variable namely Acceleration of Outpatient Service Waiting Time (Y) is associated with two or more independent variables, namely the provision of medical records (X1), Human Resources Competence (X2), Infrastructure (X3), and flow outpatient (X4). Table III shows the calculation from regression analysis to obtain std error value and correction factor.

Table III. Multiple Regression Coefficients

Model	Unstandardized Coefficients	
	B	Std. Error
1 (Constant)	13,390	1,842
Provisions medical record	,154	,096
competence of human resources	,185	,090
Infrastructure	,173	,079
Outpatients flow	,079	,114

a. Dependent Variable: the acceleration of waiting time

Based on the table above, the regression formula can be obtained as follows:

$$Y = a + b1X1 + b2X2 + b3X3 + b4X4 \tag{1}$$

$$Y = 13.390 + 0.154X1 + 0.185X2 + 0.173X3 + 0.079X4 \tag{2}$$

The interpretation of the above regressions is as follows:

- If the constant is 13,390; means that if the provision of medical records (X1), competence of human resources (X2), infrastructure (X3), and outpatient flow (X4), the value is 0, then the Acceleration of Outpatient Service Waiting Time (Y) the value is 13,390.
- If the regression coefficient of the medical record provisioning variable (X1) is 0.154. The coefficient is positive, meaning that there is a positive relationship between the provision of medical records and the acceleration of waiting time for outpatient services, the increasing the provision of medical records, the more the increase in waiting time for outpatient services.
- If the regression coefficient of the human resource competency variable (X2) is 0.185. The coefficient is positive, meaning that there is a positive relationship between the competence of human resources and the acceleration of waiting time for outpatient services, the more the increase in waiting time for outpatient services.
- If the infrastructure and infrastructure variable regression coefficient (X3) is 0.173. The coefficient is positive, meaning that there is a positive relationship between the infrastructure and the acceleration of waiting time for outpatient services, the more the infrastructure, the more the increase in the waiting time for outpatient services.
- If the regression coefficient of the outpatient flow variable (X4) is 0.79. The coefficient is positive, meaning that there is a positive relationship between the flow of outpatients and the acceleration of waiting time for outpatient services, the more the flow of outpatients the more the increase in the waiting time for outpatient services.

F. Simultan Test

In this study, the simultan test were assessed to obtain four correction value (see Table IV).

Table IV. Simultan Test from Hypothesis Result using ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	45,140	4	11,285	4,631	,002 <sup>a</sup>
Residual	231,500	95	2,437		
Total	276,640	99			

a. Predictors: (Constant), outpatient flow, provisions medical record, competence human resource, infrastructure  
 b. Dependent Variable: the acceleration of waiting time

The value of F-count (4.631) > F-table (2.46) and sig < 0.05 (0.002 < 0.05), then H0 is rejected and H1 is accepted. it indicates is a significant influence between the provision of medical records, the competence of human resources, infrastructure and outpatient flow on the Acceleration of Waiting Time for Outpatient Services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara, Serang Regency.

G. Partial test

In this study the hypothesis was tested using the t test which aim to see whether there is a significant influence between each of the independent variables. The following are the results of the analysis of these variables (see Table V).

Table V. Partial -Test- Hypothesis Result

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Result obtained
	B	Std. Error	Beta			
1 (Constant)	13,390	1,842		7,269	,	
Provisions medical record	,154	,096	,193	1,609	,111	H2 (Reject)
competence of human resources	,185	,090	,215	2,057	,042	H3 (be accepted)
Infrastructure	,173	,079	,274	2,199	,030	H4 (Reject)
Outpatients flow	,079	,114	,070	,697	,488	H5 (be accepted)

a. Dependent Variable: the acceleration of waiting time

While the coefficient of determination was calculated on Table VI as follows

Table VI. Coefficient of Determination Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,404 <sup>a</sup>	,163	,128	1,56104

a. Predictors: (Constant), outpatient flow, provisions medical record, competence human resource, infrastructure  
 b. Dependent Variable: the acceleration of waiting time

In the table above shows the adjusted R2 is 0.128, this means that the effect of providing medical records (X1), Human Resources Competence (X2), Infrastructure (X3), and Outpatient Flow (X4) on the variable Waiting Time Acceleration Outpatient services (Y) amounted to 12.8%, while the remaining 87.2% was influenced by other factors outside the discussion such as leadership, strategic planning, and management.

H. Effect of provision of medical records, competence of human resources, infrastructure and flow of outpatients affect the acceleration of waiting time for outpatient services.

There is a significant influence between the provision of medical records, competence of human resources, infrastructure and outpatient flow on the Acceleration of Waiting Time for Outpatient Services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency. This means that the patient's understanding of the increasing acceleration of outpatient waiting time makes the patient loyal to come back for a visit. In line with the research of current study of waiting time are equipment, registration procedures (medical records), outpatient flow, and human resources [10]. Likewise with research waiting time include the absence of standard operating procedures; patients have to fill in the registration form, the registration officer job desk is still duplicate, limited space; incomplete patient file; limited number of personnel; no queuing machines; the printer sometimes has problems [11].

I. There is no influence between of provision of medical records on the Acceleration of Waiting Time for Outpatient Services

There is a significant influence between the competence of human resources on the Acceleration of Waiting Time for Outpatient Services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency. Due to the behavior of officers in carrying out their work has compliance at work so that it affects the acceleration of waiting times. In line with research that focused on using the EMR function were five times more likely to show an increase in EMR use compared to controls. Interventions that focused on data quality were five and a half times more likely to show improvement in EMR use compared with controls [12]. In this Research the challenges associated with managing medical records in organizations and how to handle and manage them with medical record management as a tool to mitigate risks [13]. Thus, the factors of waiting time are equipment, registration procedures (medical records), outpatient flow, and human resources.

### J. *The Effect of Human Resources Competence on Acceleration of Waiting Time for Outpatient Services*

There is a significant influence between the competence of human resources on the Acceleration of Waiting Time for Outpatient Services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency. It can be happened due to the behavior of officers in carrying out their work has compliance at work so that it affects the acceleration of waiting times. This is consistent with research of human resource management competencies have a significant effect on job satisfaction and job involvement [14]. Organizations should focus on establishing a promotion and training system that helps medical workers improve their quality and professional skills, as well as establishing a fair and fair performance appraisal and salary management system to increase job satisfaction and job engagement. Thus, the research with the emerging developments and transitions in the Health Care Industry, HRDs must adapt to the latest methods to compete and maintain a competitive health care sector [15]. The role of HRM also extends to monitoring the rules & regulations governing the health care system in relation to its employees. To provide quality health care, identify the root causes of errors, strategies to reduce the likelihood of further errors, gap analysis, combine available skills to close gaps, diversify work among available teams, apply quality improvement methodologies to form interdisciplinary teams for health care more patient-centered. Another research of disease is high, our review identifies a bit of overwhelming evidence about the relationship between HRM and patient outcomes. Moreover, the evidence presented often fails to provide contextual characteristics that are likely to induce variations in the performance effects of HRM interventions [16]. Likewise, research of waiting time is equipment, registration procedures (medical records), outpatient flow, and human resources [17].

### K. *The Effect of Infrastructure on the Acceleration of Waiting Time for Outpatient Services*

There is a significant effect of infrastructure on the Acceleration of Waiting Time for Outpatient Services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency. It occurs due to the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency provides comfort to patients by providing adequate facilities so that it affects the acceleration of waiting times. It related with MMA-Sofia development opportunities are also related to investment in modern technical device, improvements to build infrastructure, development of activities, related to further treatment, rehabilitation and care for the sick [18]. The elderly as well as the creation and maintenance of a Single Information Center to assist patients, and the

hospital's medical and administrative staff. Likewise, research of waiting time is equipment, registration procedures (medical records), outpatient flow, and human resources [19].

### L. *There is no influence between the flow of outpatients and the acceleration of waiting time for outpatient services*

There is no significant effect between the flow of outpatients on the Acceleration of Waiting Time for Outpatient Services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency. It can be happened due to the patient's understanding of the outpatient flow so that the outpatient flow does not affect to the acceleration of waiting time. It related with the research that affected to waiting time including have not standard operating procedures; patients have to fill in the registration form, the registration officer job desk is still duplicate, limited space; incomplete patient file; limited number of personnel; no queuing machines; the printer sometimes has problems [20].

In this study, based on hypothesis testing, it was found that there was a significant effect between the provision of medical records, human resource competence, infrastructure and outpatient flow on the Acceleration of Waiting Time for Outpatient Services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency. The findings in this study indicate that the competence of human resources and infrastructure is the most dominant variable and influences the acceleration of waiting time for outpatient services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency. It supports by research which carried out by a factor for waiting time are the provision of medical records, human resource competencies, facilities and infrastructure, and outpatient flow [21].

This research is inseparable from limitations that can be a source for future research. The limitations found in this study are the study was conducted in outpatient installations only. Due to time constraints, other installations were not included in this study. There are still many other variables that have not been studied (eg leadership, strategic planning, and management), which can actually affect the Acceleration of Waiting Time for Outpatient Services in hospitals. The limitation in the number of research samples is only Indonesian Insurance and Social Security (BPJS) patients.

## 4. CONCLUSIONS

There is an influence between the provision of medical records, competence of human resources, infrastructure, and outpatient flow on the acceleration of waiting time for outpatient services. This means that if the provision of

medical records, the competence of human resources, infrastructure, and outpatient flows increases simultaneously, the acceleration of waiting time for outpatient services will increase.

Based on the results of the study, it was found that the provision of medical records, human resource competence, infrastructure and outpatient flow simultaneously and simultaneously gave a positive influence on the Acceleration of Waiting Time for Outpatient Services at the Regional General Hospital (RSUD) dr. Dradjat Prawiranegara Serang Regency. So, the hospital management should develop a strategy to improve the waiting time for outpatient services, namely as follows: To provide medical records by accelerating the Electronic Medical Record (EMR) system. For human resource competence, efforts to improve human resource competence are by compiling and submitting a budget for human resource training on a regular basis per year. For infrastructure facilities, namely by planning for infrastructure needs in outpatient installations and submitting a budget for the procurement of infrastructure according to needs. For the flow of outpatients, namely by optimizing online outpatient registration via mobile phones and completing polyclinic direction at outpatient installations.

Based on the research described above, the researcher proposes several suggestions that can be used by several parties as follows: Regional General Hospital Management (RSUD) dr. Dradjat Prawiranegara Serang Regency to anticipate the emergence of the problem of the length of Outpatient Waiting Time that is not yet appropriate in the Outpatient Installation. It is recommended that the management of the Board of Directors immediately socialize the Minimum Service Standards related to officers' insights about Outpatient Installations so as to speed up waiting times. Here, the make a meeting of the Management of the Board of Directors, the Head of the Medical Record Installation, all doctors and nurses to discuss the timeliness of providing outpatient medical record files by accelerating the Implementation of Electronic Medical Records (EMR) so that the provision of medical record files meets the standard that should be 10 minutes so that patients do not wait long because of the provision of medical record files according to the queue number.

The management of the Board of Directors delegates the Head of the General Section and the Head of the Personnel and Training Section to prepare a training program plan every year and carry out both internal and external training for human resources for doctors, nurses, officers in outpatient installations according to standards so that they are more agile and competent while the head of the Outpatient Installation along with the staff submits a budget to the management of the board of directors to complete the facilities and infrastructure needs in the

outpatient installation and routinely also reports the inventory of medical devices in the outpatient installation including their condition to the medical logistics unit and IPSRS and performs maintenance and calibration routine medical equipment and hospitals, especially in the Outpatient Installation. Here, hospital management conducts routine evaluations of compliance with Standard Operating Procedures (SOPs) for existing outpatient services in order to prevent patients from queuing and stacking by making signs for directions to the polyclinic in outpatient installations.

Suggestions for further researchers, Study more deeply about the four variables in this study with other research subjects (e.g., in inpatient installations or other installations) to be compared with the results of this study so that this research can be used as a basis in developing further research. Add other variables such as leadership, strategic planning and management in further research, considering that there are many other factors that also affect the Acceleration of Outpatient Waiting Time. For further research, it can be carried out in several hospitals, so that the results of the study will be more valid and the population wider.

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