



A Review of the Implementation of an Online Registration System to Support Waiting Time Efficiency at RSUD Bandung Kiwari

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ABSTRACT

A Hospital is an institution that organizes health services in full including outpatient services. This study aims to review the implementation of an online registration system to overcome the problem of waiting time for outpatients at Bandung Kiwari Hospital. The research method used was descriptive quantitative analysis with 22 respondents aged 20-45 years. Primary data was collected through questionnaires, while secondary data was obtained from direct observation. The results showed that 85.2% of respondents agreed with online registration as part of the digitalization of hospital services. Observation revealed an average service time of 3,590 minutes, equivalent to 2 hours and 4 minutes. The main problems found were patients who had made online reservations did not come as scheduled and the lack of patient understanding of the online registration flow. In addition, management elements also play a role in patient service. It can be concluded that the implementation of the online registration system is quite effective in overcoming the problem of waiting time, but requires improvement in socialization and coordination with patients.

INTRODUCTION

Patient waiting time is one of the indicators of hospital quality. Long waiting times can cause crowds and the risk of increasing patient complaints. (Sukatin et al., 2022) Waiting too long can cause discomfort, disturb patients, and even affect patients' decisions to seek other medical help. Hospitals are healthcare institutions that organize comprehensive individual health services that provide inpatient, outpatient, and emergency services. (Bustani et al., 2015). To overcome these problems, the implementation of online appointment systems has become a major focus to improve polyclinic efficiency and patient experience. Patient registration is one of the hospital services that must always be featured so that the service process to patients runs better and optimally. This, of course, must also be supported by a management system that can facilitate these activities. (Wahyudin et al., 2019). Factors that affect medical service time can be found through the 5M element, the researcher chose the 5M element because he thought this method of completion was most appropriate for his research theme. The 5M elements are (Man, Money, Methods, Materials, Machine) (Zein & Mujizah, 2024). With an online booking system, patients can register and make appointments independently through a digital platform commonly known as Mobile JKN or the hospital's website, allowing for better queue management and customization of service schedules as needed. The public's habit of registering for services manually makes the existence of an online registration system less significant. This can be seen by the large number of queues at patient registration counters. Whereas an outpatient online registration system can facilitate the continuity of health activities in hospitals. Some people are still reluctant to switch to online services because manual registration has become a habit. (Afdoli & Malau, 2019). From the results of observations, it is known that the service time, namely when the patient fingerprints until the service is provided by the doctor, is on average ≥ 90 minutes, while the waiting time obtained by the patient is on average ≤ 60 minutes calculated when the patient fingerprints until the assessment by the nurse is complete. The categories of the distance between check waiting times that are estimated to be satisfying or less satisfying to patients include when the patient comes to register at the queue counter and waits for the general poly call to be anamnesis and examined by a doctor, nurse more than 90 minutes (long category), 30-60 minutes (medium category). (Nurfadillah & Setiatin, 2021). Factors that affect waiting time: In the Man factor, there is a problem that the number of outpatient registration officers is limited to only 4 people, and there is only 1 distribution officer. This causes the registration officer to wait when the file is about to be used, which has an impact on the duration of waiting for service. Furthermore, in the Methods factor, some patients do not understand the flow of online outpatient registration. In the Materials factor, there is often a shortage of BPJS patient file requirements and also the medical record folder is not found. Meanwhile, in the Machines factor, the long SIMRS computer work process sometimes errors greatly hamper the work of officers, because SIMRS is the central link of the entire service system. Regarding Money, there was no specific information provided during this research.

The implementation of an online scheduling system has great potential to significantly reduce patient waiting time. By utilizing information and communication technology, an online scheduling system can help optimize resource utilization, reduce patient waiting time, improve medical staff efficiency, and reduce patient complaints. The online appointment system includes registration, patient data collection, patient identity entry, patient data processing, and patient data storage.

The code for taking online registration at Bandung Kiwari Hospital is C, while the manual queue-taking code is B. The queue code for new patients who have never

been to Bandung Kiwari Hospital is A, but the process is the same, all patients will be directed by a security guard to retrieve the queue number (access queue) on the platform machine (visit queue). It was stated in 2019 by the World Health Organization (WHO) that good hospital service quality with increased work productivity, speed, accuracy, security integration, and efficiency, can only be realized if the SIMRS is of high quality. (Sakit et al., 2024). SIMRS itself is used by hospitals to manage various operational and administrative aspects, including patient registration, medical records, scheduling, administration, and resource management. Efficiency in hospitals can be interpreted as a balance between the services provided (output) and the resources used (input).

Efficiency can be seen as an indicator that can increase waiting time for services at Bandung Kiwari Hospital, such as during the registration process, therefore pay attention to how long it takes for patients to register with an online registration system, if the process is fast and efficient, it can help reduce patient waiting time and can help reduce hospital operating costs. Through an online registration system, the cost of using paper, personal costs, etc. can be reduced. In addition, the quality of service provided by the hospital can also be used as an indicator of efficiency. With an online registration system, patients can obtain information about treatment schedules and procedures more accurately and quickly. In terms of hospital management, efficiency can also refer to improving the quality of medical services through the utilization of the latest information technology, such as hospital management information systems (SIMRS). SIMRS can help improve the efficiency of hospital management by speeding up the distribution of information and tasks so that hospital medical and non-medical services can run faster. Therefore, hospital efficiency is an important aspect in maintaining the quality of health services, especially through the use of information technology and measuring the level of efficiency of health services. The process of implementing a system in its journey requires evaluation, as is the case with the evaluation of the implementation of the Hospital Information System is very important to improve system performance through identifying the shortcomings and strengths of the system.(Saputra Mokoagow et al., 2024).

METHODOLOGY

For the results of this study, I used quantitative descriptive analysis techniques. The method of data collection is by involving 22 respondents with a majority of 20 - 45 years, for primary data collection through a questionnaire with a Likert scale guide and calculating the final results according to the criteria and then interviewing 1 medical record officer. Secondary data through direct observation conducted in April 2024 - May 2024 at Bandung Kiwari Hospital. The use of research instruments includes; interview guidelines with supporting tools for cell phones as a means of recording interview results and for collecting data in the form of photos and copies of data.

RESEARCH RESULT

1. Registration counter activities include accepting online and manual patient registrations

Based on the results of direct research, the process of admitting outpatients at Bandung Kiwari Hospital is carried out by giving medical record numbers to patients using a unit numbering system, so that each patient has 1 medical record number which is used for all types of services received by both general patients and BPJS patients.

2. Resptime waiting time that patients get

Table 1. Observation Results of Average Service Waiting Time

| |
|--|
| Waiting time (minutes) |
| Total waiting time = 3,590 minutes |
| Number of data = 22 |
| Average waiting time = $3,590 / 22 = 163.18$ minutes |
| $163.18 / 60 = 2.72$ hours |
| = 163.18 = 2 hours 4 minutes |

3. Factors that affect the waiting time of outpatient registration services based on the Man, Money, Method, Materials, and Machine factors.

A. Man Factor

Based on the analysis results of Table 1. Of the 22 data examined, the average waiting time was 3,590 minutes or equivalent to 163.18 minutes per data. If converted, 163.18 minutes is equivalent to 2 hours 43 minutes from this data, it can be seen that the most prominent waiting time occurs when the patient is assessed by the nurse until completion, before entering the room to be examined by the doctor. So that the waiting time is categorized as long.

Table 2. Scale range of approval for online registration

| |
|--|
| Final Results |
| = Total score / Y x 100 |
| = $426 / 500 \times 100$ |
| = 85.2%, in the category of "strongly agree/good/like" |

Based on Table 2. it can be concluded that as many as (85.2%) of respondents agree that online registration is part of digitization and the system was developed by the internal IT team based on observations and patient needs to obtain significant certainty of outpatient services and help in improving hospital efficiency.

B. Money Factor

Based on the results of the study, budget availability also affects the waiting time for outpatient registration services. It is known that the hospital has provided funds to meet the operational needs of the registration counter such as: providing paper to print the SEP and providing office stationery.

C. Method Factor

The implementation of outpatient registration services, with the existing SOP. However, there was one case where the registration service officer made a mistake in the service flow when inputting the patient's identity. This caused the officer to contact the IT team to correct the error.

D. Material Factor

Overall, the outpatient registration unit at Bandung Kiwari Hospital has been equipped with adequate facilities to support the registration process such as computer equipment, recording media, administrative equipment, and communication facilities, however, there is no information regarding the existence of "trackers" in the documents provided.

E. Machine Factor

The findings of the SEP printing machine by the availability of the number of computers sometimes when accessing SIMRS there have been problems. Once the computer died or had an error it had to be restarted first so that it could return to normal.

DISCUSSIONS

1. Registration counter activities include accepting online and manual patient registrations

The questionnaire results show that many patients have used the online registration system before they came to the hospital. This allows patients or patients' families to take a queue number through the platform machine when they arrive at the hospital so that after getting a queue number, patients can immediately register themselves at the registration department, and the online registration system for BPJS patients at Bandung Kiwari Hospital already uses the fingerprint feature. This feature ensures that patients carry their identity cards when registering. The medical record numbering system uses serial unit numbering for 1 patient in all services.

Based on the results of direct field observations, it was found that there are still patients who have not applied for online registration so they have to wait to take an offline queue at the hospital the problem of polyclinic visit quotas that often run out because many patients have implemented an online registration system so that patients who are one site often do not get a quota for examination on the same day. Online registration reservations have been made before service hours begin. This is evident from the observation that as early as 6 am, many patients or their families have been coming to the queue machine to re-register. The waiting room at the polyclinic was also filled with patients and families whose queue numbers were close to the opening time of service hours. The registration service opens at 7:30 am, which is later than taking the offline queue number at 6:30 am, causing the waiting time to reach 1 hour. Patients who make online reservations sometimes do not comply with the estimated service time, thus extending the waiting time and lack of patient understanding regarding the rules and flow of online registration. Many patients come to the hospital accompanied by their families, some even accompanied by 2 or 3 people, causing crowds in the patient waiting room. The concept of this online registration system is a computerized concept, where patients can register themselves online on a web-based online registration system that is already available to get a queue number, then the patient only needs to come to validate the queue number at the patient registration area, without the need to queue to be registered by the patient registration officer (Ariani et al., 2022).

2. Resptime waiting time that patients get

Based on the results of the study, the patient's waiting time starts when the patient is assessed by the nurse entering and finishing, namely ≤ 60 minutes, while the service time in which there is a waiting time starts when the patient fingerprints until the service is provided by the doctor with an average of 163.18 minutes = 2 hours 4 minutes so that it is categorized as long. The thing that affects the response to be long is that it returns to the patient whose reservation does not come by the provisions that have been given.

3. Factors that affect the waiting time of outpatient registration services based on the Man, Money, Method, Materials, and Machine factors.

A. Man Factor

Qualified human resources are human resources who are skilled, professional, productive, and able to independently compete healthily in the world of work. (Uyyun, 2021). During field observations regarding service waiting times, it was seen that human resources (HR) had a significant influence. There is an imbalance between the number of HR and the number of patient visits even though the majority of officers have relevant educational backgrounds. When old patients register, the registration officer must contact the distribution officer to deliver the medical record files, sometimes the registration officer needs to record or accommodate 4 - 5 medical record files requested. This is due to the lack of distribution officers (only 1 person) and the distance between the registration floor and the different medical record file rooms. Sometimes it is also difficult to find certain medical record files so it takes additional time to create new medical record files and these conditions affect the patient's waiting time to be long. Article 15 The distribution of Electronic Medical Record data as referred to in Article 13 paragraph (1) letter b is an activity of sending Electronic Medical Record data from one service unit to another service unit in a Health Service Facility (Minister of Health, 2022).

B. Money Factor

Based on the observation results, there is nothing specific about financial factors or "money" that affects services in the registration section. It can be concluded that there are no problems related to the registration section focusing on problems related to human resources and operational processes.

C. Method Factor

A standard operating procedure (SOP) is a set of instructions/steps carried out for certain routine work processes. Standard operating procedures (SOP) provide the biggest and best steps based on mutual consensus to carry out various activities and service functions made by healthcare facilities (Ulfa, 1930). Registration officers have followed the procedures as expected by patients when providing services, but sometimes some patients are still confused about the flow of registration, causing patient registration services to be hampered.

D. Material Factor

The material factor that causes delays in the provision of medical records is that there are medical records that are not properly stored in the yellow folder which should be because the folder cannot be found. This resulted in damage to the medical record papers, hindering the process of providing medical records for outpatients. So far, Bandung Kiwari Hospital has been equipped with adequate facilities to support the registration process such as computer devices, recording media, administrative equipment, and communication facilities, however, there is no information regarding the presence of "trackers" in the documents provided. According to the International Federation of Health Information Management Associations (IFHIMA) Tracer is a substitute for medical record documents that will be removed from the storage rack for any purpose. (Zein & Mujizah, 2024).

E. Machine Factor

Based on the information obtained during the research, the machine factor is related to the tools used as support in service provider activities, especially related to the use of SIMRS (Hospital Management Information System) infrastructure facilities that can hinder patient services in registration are network and computer systems and also fingerprint devices are often not detected.

CONCLUSIONS AND RECOMMENDATION

Based on the information provided, it can be concluded that online and manual registration service activities for outpatients at Bandung Kiwari Hospital include registration, patient data collection, patient identity entry, patient data management, and patient data storage. Conditions that affect service waiting times are that not a few patients do not understand the flow of online registration so reservations made do not match the estimated service time and extend the waiting time so that the average waiting time obtained is 163.18 minutes or the equivalent of 2 hours 42 minutes. The factor that greatly affects the waiting time for outpatient services is the number of officers, where only 3 registration officers and 1 distribution officer are available with the location of medical records far apart.

There seem to be several areas in the hospital's service flow that need improvement to optimize the process. One of the main problems is the accumulation of patients in the waiting room and the long time in the clinic which may be due to the lack of human resources at the registration counter. To overcome this problem, the suggestion that can be given is to increase the number of officers at the registration counter. By increasing the capacity of the patient registration process, it is expected that queues and waiting times can be significantly reduced. In addition, a thorough evaluation of the process flow in each polyclinic also needs to be done by balancing the workload, adding medical personnel, or improving inter-staff coordination. By implementing measurable and planned improvement measures, hospitals can increase the efficiency of service flow and provide a better experience for patients.

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