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Analysis Of The Development Of Electronic Prescribing (E-Prescribing) In Improving The Quality Of Pharmaceutical Services At Kuala Pembuang Regional Hospital, Seruyan Regency In 2023

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ABSTRACT
The development of electronic prescriptions is necessary because medication errors in reading prescriptions can be prevented and can improve the quality of pharmaceutical services. The aim of the research is to analyze the development of electronic prescribing (e-prescribing) in improving the quality of pharmaceutical services at Kuala Pembuang Regional Hospital, Seruyan Regency, Central Kalimantan Province in 2023. This research is a qualitative research with a descriptive approach. The primary data sources for this research are the head of the pharmacy unit, head of hospital information and technology, pharmacists and doctors. The results of the research showed that the development was carried out by adding the latest features which are useful for validating patient prescriptions, including notification information if double validation of a prescription occurs and validation of medication taking has been carried out by photographing the patient or the patient's family taking the medication. Apart from that, patient satisfaction increased between before and after the development of electronic prescribing (e-prescribing). It is hoped that Kuala Pembuang District Hospital, Seruyan Regency, will continue to develop electronic prescribing (e-prescribing) to improve the quality of pharmaceutical services, such as providing emergency stock notifications when medicines/medical equipment have reached limitations, notifications when medicines are approaching their expiry date.

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INTRODUCTION

Pharmaceutical service is a direct and responsible service to patients related to pharmaceutical preparations with the aim of achieving definite results to improve the patient's quality of life. A prescription is a written request from a doctor or dentist to a pharmacist, either in paper or electronic form, to provide and deliver medicine to the patient in accordance with applicable regulations. Pharmaceutical services in hospitals are an inseparable part of the hospital health service system which is oriented towards patient service, providing quality

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and affordable pharmaceutical preparations, medical devices and consumable medical materials for all levels of society, including clinical pharmacy services.(1)

The above developments can be an opportunity as well as a challenge for pharmacists to advance to improve their competence so that they can provide comprehensive and simultaneous pharmaceutical services, both managerial and clinical pharmacy. The optimization strategy must be enforced by making maximum use of the Hospital Information System in the pharmaceutical management function, so that it is hoped that with this model there will be energy and time efficiency. The efficiency obtained is then used to carry out intensive clinical pharmacy service functions. Computerized physician order entry systems and clinical decision support systems are electronic prescribing strategies that are increasingly being used to improve patient safety.(2)

The results of research conducted at the Bitung Regional Hospital Interna Polyclinic and at three pharmacies in Manado City on prescriptions showed that these prescriptions had the potential to cause medication errors. Medication errors do not only occur in Indonesia, the USA Institute of Medicine estimates that up to 7,000 deaths per year in the USA are caused by medication errors. In Indonesia, electronic prescriptions have been widely implemented and are highly recommended for prescribing by doctors in hospitals because they can reduce medication errors compared to manual prescriptions. However, not all health services that implement electronic prescriptions achieve meaningful results.(3)

The e-Prescription system is a key component and enabler of digital health. They can improve patient safety, and are gaining popularity in healthcare systems around the world.(4)An electronic prescribing system (e-prescribing) is a prescribing system using software designed to facilitate drug prescribing services starting from the prescribing stage (writing a prescription), the transcribing stage (reading the prescription for the dispensing process), the dispensing stage (preparing to handing over the prescription by officers), administration stage (drug use) and monitoring process. E-prescribing plays a role in preventing medication errors, namely errors in drug prescribing services and failures in the treatment process that lead to or have the potential to result in losses that can endanger patients.(5)

According to the Regulation of the Minister of Health of the Republic of Indonesia No. 72 of 2016 concerning Pharmaceutical Service Standards in Hospitals, including: (a) Management of pharmaceutical preparations, medical devices and consumable medical materials, (b) Clinical pharmacy services. Minimum Service Standards for Hospital Pharmacy include: waiting time for service (finished medicine ≤ 30 minutes, concoction ≤ 60 minutes, no medication errors 100%, customer satisfaction ≥ 80%, writing prescriptions according to the formulary 100%.(6)E-prescribing has the potential to increase access to prescription medications and is convenient for patients. With the help of electronic prescriptions (e-prescribing), prescriptions that are transmitted using electronic media will simplify the administration process and can find out the history of drug use by patients so that it will support decisions and provide accurate data for drugs in controlling rational drug prescribing.

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Medication errors in misreading prescriptions can be prevented by developing electronic prescribing.(7)

The electronic prescribing system uses the CodeIgniter framework because of its fast performance and uses the MVC (Model View Controller) pattern, so that the code structure becomes more structured and standardized. The development of an electronic prescribing system uses the waterfall model software development theory with stages, namely requirements analysis, system design, writing program code, program testing, and program implementation and maintenance. The e-prescription system can be integrated with a dedicated Electronic Health Record solution to gain an in-depth understanding of each patient's medication history and health features without needing to double-check them for allergies or possible drug intolerances. Thanks to the rapid development of web and mobile applications, e-prescribing has become an efficient component of modern telemedicine.(8)

Kuala Pembuang Regional Hospital, since October 2019, electronic prescribing has been carried out in outpatient and inpatient settings. With the implementation of electronic prescribing, it is hoped that it can minimize medication errors, the stock of medicines presented is valid so that every request there is no shortage of medicines, the supply will be automatically updated with implementing electronic prescribing, and it is also hoped that it can save the budget in using paper, where previously manual prescriptions used a lot of paper and electronic prescriptions did not use paper. In line with the 6 Pillars of Health Transformation where the development of electronic prescribing is included in the 6 Pillars of Health Transformation, namely Health Technology Transformation, in line with this goal electronic prescribing can overcome problems in health facilities, especially in terms of prescribing and drug supplies at Kuala Pembuang Regional Hospital.

The results of a preliminary study conducted by researchers obtained information that there were many errors in reading prescriptions (human error) in reading prescriptions so that errors often occurred in administering medicines, in addition, in the prescription of medicines at the Kuala Pembuang Regional Hospital, the medicines that came out to serve prescriptions were often not documented. well and in pharmaceutical services the waiting time for service is very long, causing long queues, drug prescribing is often not in accordance with the hospital formulary, a very common problem that often occurs in the Kuala Pembuang Hospital's pharmaceutical installation, which is very vulnerable to human error. as well as errors in writing and administering drug prescriptions as well as inaccurate stock of drugs in pharmacy installations, in 2018-2019 data was obtained at Kuala Pembuang Regional Hospital, completeness of prescriptions did not meet the standard 1080 prescription sheets, reading doctor's prescriptions were too difficult 89 prescription sheets, errors in reading 12 prescriptions sheets, the waiting time for the service for concocted prescriptions is 22 minutes and for non-concocted recipes 15 minutes, there are 987 prescription sheets that do not meet the standards, there are 67 prescriptions that are too difficult to read, the waiting time for the service for concocted prescriptions is 20 minutes and non-concocted 15 minutes. Therefore, electronic prescriptions still need to be developed for the support system or human resources (HR) involved for medication security and patient safety. Based on existing problems, the

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research objective is to analyze the development of electronic prescribing (e-prescribing) in improving the quality of pharmaceutical services at Kuala Pembuang Regional Hospital, Seruyan Regency, Central Kalimantan Province in 2023.

METHOD

This research is qualitative research with a descriptive approach. Qualitative descriptive research aims to describe, depict, explain, explain and answer in more detail the problems to be studied by studying as closely as possible an individual, a group or an event.(9)The data sources in this research are: primary data is a data source that directly provides data to data collectors.(9)The primary data sources for this research are the head of the pharmacy unit, head of hospital information and technology, pharmacists and doctors. Secondary data is a source that does not directly provide data to data collectors.(9)Data is said to be valid if there is consistency or suitability between the information provided by one informant and another informant.(10)This triangulation method is used by researchers to obtain data from different sources with the same technique, namely by conducting interviews.

Data acquisition techniques in this research used observation, interview, documentation, and triangulation or combined techniques. Observations were carried out by directly observing electronic prescribing (e-prescribing) in improving the quality of pharmaceutical services at Kuala Pembuang Regional Hospital, Seruyan Regency. The interview method used by the researcher was an unstructured interview, namely a free interview where the researcher did not use an interview guide that had been arranged systematically and completely for data collection. In this interview, the informants who will be the object of the researcher's interview are the head of the pharmaceutical unit, the head of hospital information and technology, pharmacists and doctors. The reason the researcher chose the informants above is because these parties are relevant parties and are involved in electronic prescribing (e-prescribing) in improving the quality of pharmaceutical services at Kuala Pembuang Regional Hospital, Seruyan Regency. The documentation carried out in this research is by taking pictures in the form of photos, videos and writing. This documentation technique was used by researchers to search for electronic prescribing data (e-prescribing) from the Kuala Pembuang Regional Hospital, Seruyan Regency.

The implementation of development steps is adjusted to the needs of researchers. The steps for developing electronic prescribing (e-prescribing) for pharmaceutical services at Kuala Pembuang Regional Hospital, Seruyan Regency were carried out as follows: First, research and data collection were carried out to determine the problems and shortcomings of electronic prescribing (e-prescribing) for pharmaceutical services at Kuala Pembuang Regional Hospital Seruyan Regency which has been running,he explained it into 6 weaknesses analysis focuses, namely Performance, Information, Economy, Control, Efficiency and Service. Second, planning, conducting literature studies and benchmarks for developing features in the electronic prescribing application system (e-prescribing) for pharmaceutical services at Kuala Pembuang Hospital, Seruyan Regency. Third, developing features in the electronic prescribing application (e-prescribing) for pharmaceutical services at Kuala

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Pembuang Regional Hospital, Seruyan Regency, so that the system can run according to current and future needs. Fourth, validating and reviewing the electronic prescribing application (e-prescribing) for pharmaceutical services at Kuala Pembuang Regional Hospital, Seruyan Regency which has been developed, as well as system testing to show that the system structure and design results can be implemented well. Fifth, improvement of the electronic prescribing application (e-prescribing) for pharmaceutical services at Kuala Pembuang Regional Hospital, Seruyan Regency, as a result of validation and review. If there are input or suggestions for improving the application that has been developed, then researchers will make improvements to perfect the application. Sixth, socialization and implementation, the electronic prescribing application (e-prescribing) for pharmaceutical services at Kuala Pembuang Regional Hospital, Seruyan Regency has been perfected, so the application is socialized to parties involved in operating the application system and implemented.

Activities in data analysis, namely data reduction, data display, and verification. Reducing data means summarizing, selecting the main things, focusing on the important things, looking for themes and patterns. After the data has been reduced, the next step is to present the data. Through the presentation of this data, the data is organized, arranged in a relationship pattern so that it is easier to understand. Thus, what is most often used to present data in qualitative research is narrative text. The third step in qualitative data analysis, according to Miles and Huberman, is drawing conclusions and verifying. The initial conclusions put forward are still temporary, and will change if strong supporting evidence is not found at the next stage of data collection. However, if the conclusions put forward at the initial stage are supported by valid and consistent evidence when the researcher returns to the field to collect data, then the conclusions put forward are credible conclusions.(11)

RESULTS

The following are the results of the evaluation of the electronic prescribing application system (e-prescribing) for pharmaceutical services that has been used so far, as follows.

The function of the electronic prescribing application (e-prescribing) for pharmaceutical services supports everything required by stakeholders.

If the system runs smoothly, it supports it (I1, Head of Pharmacy Installation)

This function requires additional validation information (I2, Pharmacist)

It's better, ma'am (I3, Doctor)

The biggest impact is if the electronic prescribing application (e-prescribing) for pharmaceutical services experiences an error

Yes data is not saved (I1)

.... system failure in storing recipes .... (I2)

If there are any problems, it's manual (I3)

Differences in the standards set by hospitals and the work functions of electronic prescribing applications (e-prescribing) for pharmaceutical services.

That's appropriate.. it has to be in accordance (I1)

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.... same no difference, ... (I2)

The presentation, storage and security of reports or output produced in electronic prescribing applications (e-prescribing) for pharmaceutical services are consistent.

So far it has been consistent.... (I1)

.... currently it can be said to be consistent.... (I2)

So far, the performance of the electronic prescribing application system (e-prescribing) for pharmaceutical services has supported everything required by stakeholders, the standards set by the hospital are in accordance with the work function of the system, and the presentation, storage and security of reports or output produced in the application Electronic prescribing (e-prescribing) for pharmaceutical services is consistent. It's just necessary to add prescription validation information so that it doesn't happen again to other pharmacists, so it's clear which prescriptions haven't been validated and which haven't.

The electronic prescribing application (e-prescribing) for pharmaceutical services provides all the information needed for all stakeholders.

.... so far it has been said that it is enough (I1)

.... there must be information about the patient taking the medicine (I2)

That's enough ma'am, because it's easier than manual (I3)

The electronic prescribing application (e-prescribing) for pharmaceutical services is easy to understand.

It's easy, it's been socialized in both print and electronic media, so there's a video of everything (I1)

Stakeholders understand (I2)

I understand enough ma'am, and there is also a video (I3)

The information held by pharmaceutical installations is the same as the database in the electronic prescribing application (e-prescribing) for pharmaceutical services.

Same, as I said earlier.. (I1)

The information is the same, only sometimes there is repeated validation (I2)

The data I input reaches the pharmacy installation (I3)

The results of the electronic prescribing application (e-prescribing) for pharmaceutical services can be verified or proven correct in the information system itself.

That's possible... (I1)

What I said earlier, double.... (I2)

The electronic prescribing application (e-prescribing) for pharmaceutical services already stores hospital data correctly.

Yes, it's saved, there's a server (I1)

Yes, so.... integrated with each other.... (I2)

Double recording can occur due to data not being stored properly by the system. How does the system react if there is human error when there is an input error.

So far not, because the key is in the RM number (I1)

There isn't any... (I2)

Until now I have never (I3)

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So far, the information from the electronic prescribing application (e-prescribing) for pharmaceutical services has provided all the information needed for all stakeholders, the electronic prescribing application (e-prescribing) for pharmaceutical services is easy to understand, has stored hospital data correctly, and there have been no incidents. double recording due to data not being stored properly by the system. It only needs validation from who is taking the patient's medicine so that the information becomes clearer regarding the medicine that has been taken.

By using an electronic prescribing application (e-prescribing), this pharmaceutical service can minimize organizational expenses.

.... the service is faster, can reduce the queue for taking medicine... (I1)

.... during this time improving services for patients (I2)

.... it's better because you don't have to queue for a long time (I3)

The electronic prescribing application (e-prescribing) for pharmaceutical services has been effective between existing time resources and existing human resources.

Yes, it is more effective (I1)

Effective (I2)

In maintaining and controlling electronic prescribing applications (e-prescribing) for pharmaceutical services, there are costs or resources required.

Yes, server capacity is increased as the number of patients increases (I1)

... usually electronics play with storage capacity (I2)

So far, electronic prescribing applications (e-prescribing) for pharmaceutical services have been said to be effective and improve service quality. Applications for electronic prescribing (e-prescribing) for pharmaceutical services must be done online. When the system suddenly goes offline, existing data will be lost.

No, what has been input is not lost (I1)

Usually we confirm again with the doctor.... (I2)

If I suddenly go offline, I have to do it manually (I3)

There is the potential that the data contained in the electronic prescribing application (e-prescribing) for pharmaceutical services can be accessed by other people who do not have authorized interests.

For legal purposes, yes... that's all... (I1)

Potential exists from outside and inside.... (I2)

*Error*caused by human error or failure in the electronic prescribing application (e-prescribing) for pharmaceutical services has occurred. If this happens, here are the anticipatory steps.

Thank God not yet (I1)

The current system failure error has not occurred ..... (I2)

Yes, if there is an error, you have to enter the recipe again.... (I3)

There may be different data in one existing database.

It's impossible, sis (I1)

Different data in the existing database may not occur.... (I2)

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In the hospital's steps to exercise organizational control, process data can be accessed.

We are given a special account (I1)

Can be taken from IT (I2)

Hospital data and secrets, especially in electronic prescribing applications (e-prescribing) for pharmaceutical services, can be accessed by people outside the organization.

No (I1)

No (I2)

So far, the control of electronic prescribing applications (e-prescribing) for pharmaceutical services has used a data replication system, so when there is a system failure, the data can automatically take over, system failure errors have not yet occurred, the anticipation is to restore the existing system when a failure occurs. in terms of server software and server hardware.

When the electronic prescribing application (e-prescribing) for pharmaceutical services is implemented, wasting time arises when pharmacists and doctors as end users feel that there is a mismatch between what is being prescribed and the existing information system.

Yes definitely (I1)

Wasting time (I2)

Yes, if the signal is difficult (I3)

In the electronic prescribing application (e-prescribing) for pharmaceutical services there is double recording.

There aren't any, sis (I1)

Double recording cannot occur because the input will be checked again whether the recipe is appropriate or not (I2)

The input effort made by patients as end users is proportional to the information or output results.

Comparable (I1)

Yes, comparable (I2)

Equally comparable (I3)

So far, the efficiency of electronic prescribing applications (e-prescribing) for pharmaceutical services has been efficient, sometimes wasting time arises when pharmacists or doctors as end users feel that there is a mismatch between what is prescribed and the existing information system, there is no double recording, and input effort is required. carried out by doctors as end users in proportion to the results of the information or output in the application.

There is an update to the electronic prescribing application (e-prescribing) for pharmaceutical services which is being socialized.

There are from IT (I1)

Update (I2)

Yes, if there is something new, the application will update itself (I3)

*End users*study the electronic prescribing application (e-prescribing) for pharmaceutical services that has just been updated or replaced.

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Taught him directly (I1)
Yes socialization (I2)
That's all it needs to be updated (I3)

The information produced is timely, accurate and relevant. Or even hospitals receive a lot of complaint information from the pharmaceutical service's electronic prescribing (e-prescribing) application.

For now this is enough, ... (I1)
The information currently produced is correct, ... (I2)
From the doctor's point of view, it's accurate, ... (I3)

So far, updates to the electronic prescribing application (e-prescribing) for pharmaceutical services have been socialized and the information produced is timely, accurate and relevant in providing pharmaceutical services.

Based on the results of research and data collection, which was carried out to determine the problems and shortcomings of electronic prescribing (e-prescribing) of pharmaceutical services at Kuala Pembuang Regional Hospital, Seruyan Regency, which has been running indescription of performance, information, economy, control, efficiency and service Problems were found, including repeated validation of prescriptions and no validation of information related to taking medication by patients. Therefore, development has been carried out by adding the latest features that are useful for validating patient prescriptions, including notification information if double validation of a prescription occurs and validation of medication taking has been carried out by photographing the patient or patient's family who are taking the medication.

The next research result was that the Information and Technology team at Kuala Pembuang Regional Hospital, Seruyan Regency, validated and reviewed the electronic prescribing application (e-prescribing) for pharmaceutical services at Kuala Pembuang Regional Hospital, Seruyan Regency that had been developed, as well as testing the system to show that the system structure and design results could be achieved. implemented well. The following results were obtained.

Table 1. Results of Application System Review and Testing Assessments

No.	Evaluation	Score	No.	Evaluation	Score
1	Testing on each feature is appropriate	3	14	Integrated with electronic medical records	4
2	Users have access rights to doctors and pharmacy staff	4	15	Users can find out which stock of medicines and medical equipment have run out	4
3	Users can create a list of recipes	4	16	Displays the queue number for taking medicine	3
4	Grouping of concoction and non-concoction recipes	4	17	Use natural language that is easily understood by the general public	4

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No.	Evaluation	Score	No.	Evaluation	Score
5	Users can review the list of recipes	4	18	There is a feature for canceling prescriptions, but a confirmation box has been provided before prescribing	4
6	Users can enter a list of medicines and medical equipment after procurement	4	19	There is a standardization of color use for normal text, link text, titles, main buttons and secondary buttons	4
7	Users can verify the list of recipes that are ready to be made	4	20	Each input uses an input type adjustment, and there is a check before the process to the database is carried out	4
8	Grouping the list of prescriptions for available and unavailable medicines	3	21	Basic icons and menu icons have been adapted to their function. For example delete, cancel, close, report	4
9	Users can print a list of recipes	4	22	There is a history of prescriptions for quick access to services that have been used	3
10	Record explanations of drug delivery to patients	4	23	Using a white base color with a green main color. and the use of white space for each element	4
11	Users can record/photograph patients/families of patients who take medicine	3	24	The system will display a pop up notification to provide suggestions to the user	3
12	Users can change the recipes that have been entered	4	25	There is a help menu in system settings	4
13	Users can validate the recipe list on a single user basis	4		**Total**	**3.76**

Application development assessmentelectronic prescribing (e-prescribing) for pharmaceutical servicesThis obtained an average value of 3.76 with a classification value of B (Good). So the average score from the assessors gets a B, hence the application developmentelectronic prescribing (e-prescribing) for pharmaceutical servicesthis was declared feasible.

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The electronic prescribing application (e-prescribing) for pharmaceutical services at Kuala Pembuang Regional Hospital, Seruyan Regency has been perfected, so the application will be socialized to parties involved in operating the application system and implemented.

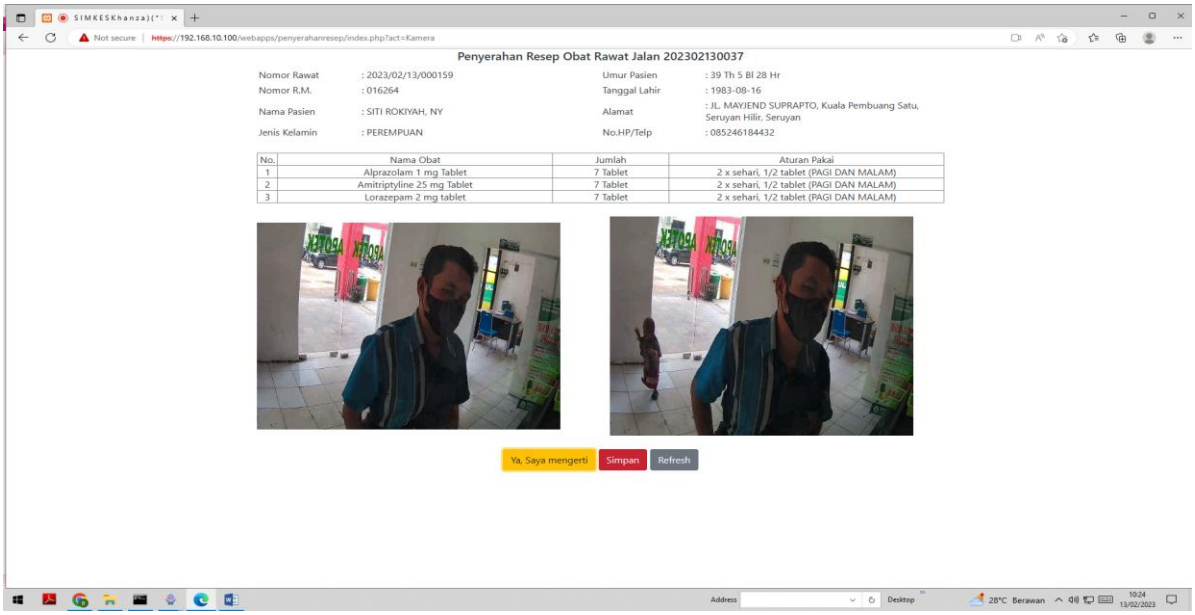

Figure 1. Application Development Implementation

The following are the results of the pharmacy service satisfaction survey between before and after it was carried outapplication developmentelectronic prescribing (e-prescribing) for pharmaceutical services.

Table 2. Results of the Pharmaceutical Service Satisfaction Survey

Assessment Aspects	Mean Assessment	
	Before	After
Reliability	3,2	3.3
Guarantee	3,2	3.3
Physical Evidence	3,2	3.3
Empathy	3.3	3,4
Responsiveness	3.3	3.5

Based on table 2, the results of the satisfaction survey with pharmaceutical services were obtained between before and after it was carried outapplication developmentelectronic prescribing (e-prescribing), there was an increase in patient satisfaction in the responsiveness aspect by 0.2, while in the reliability, guarantee, physical evidence and empathy aspects there was an increase of 0.1.

Discussion

So far, the performance of the electronic prescribing application system (e-prescribing) for pharmaceutical services has supported everything required by stakeholders, the standards set by the hospital are in accordance with the work function of the system, and the

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presentation, storage and security of reports or output produced in the application Electronic prescribing (e-prescribing) for pharmaceutical services is consistent. It's just necessary to add prescription validation information so that it doesn't happen again to other pharmacists, so it's clear which prescriptions haven't been validated and which haven't. So far, the information from the electronic prescribing application (e-prescribing) for pharmaceutical services has provided all the information needed for all stakeholders, the electronic prescribing application (e-prescribing) for pharmaceutical services is easy to understand, has stored hospital data correctly, and there have been no incidents. double recording due to data not being stored properly by the system. It only needs validation from who is taking the patient's medicine so that the information becomes clearer regarding the medicine that has been taken.

So far, the control of electronic prescribing applications (e-prescribing) for pharmaceutical services has used a data replication system, so when there is a system failure, the data can automatically take over, system failure errors have not yet occurred, the anticipation is to restore the existing system when a failure occurs. in terms of server software and server hardware. So far, the efficiency of electronic prescribing applications (e-prescribing) for pharmaceutical services has been efficient, sometimes wasting time arises when pharmacists or doctors as end users feel that there is a mismatch between what is prescribed and the existing information system, there is no double recording, and input effort is required. carried out by doctors as end users in proportion to the results of the information or output in the application. So far, updates to the electronic prescribing application (e-prescribing) for pharmaceutical services have been socialized and the information produced is timely, accurate and relevant in providing pharmaceutical services.

The research results and findings obtained were developed by adding the latest features that are useful for validating patient prescriptions, including notification information if double validation of a prescription occurs and validation of medication taking has been carried out by photographing the patient or patient's family taking the medication. Apart from that, patient satisfaction increased between before and after the development of electronic prescribing (e-prescribing). Meanwhile, the results of the satisfaction survey with pharmaceutical services between before and after the development of the electronic prescribing application (e-prescribing), showed an increase in patient satisfaction in the responsiveness aspect by 0.2, while in the aspects of reliability, guarantee, physical evidence and empathy there was an increase of 0. 1.

The results of this research are in line with previous research that the electronic prescribing system can increase access to health services and improve the quality and effectiveness of services provided at the TNI-AU Jakarta Dental and Oral Hospital.(12)The development of an e-prescribing (electronic prescribing) system in making drug prescriptions makes drug redemption times more effective and efficient. The way this system works is that the doctor will input the medicines needed to restore the patient's condition on a web page, then the prescription that has been input by the doctor will be integrated with the pharmacist so that the pharmacist can immediately know what medicines need to be prepared without having to wait for the patient to submit the prescription. doctor first. With the e-prescribing

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system, it is hoped that patients will not have to wait too long in line to collect their medicine.(13)

Most of the applications available in overseas hospitals are designed for health operators and patient management such as creating online e-prescribing applications (76.6%); 12.8% of applications are focused on the organization and organization of hospital resources, and 10.6% of applications can help hospital administrators conduct self-evaluations of their structures, processes and results.(14)

One of the benefits of electronic prescriptions is that it simplifies the administration process and history of drug use by patients so that electronic prescriptions can increase patient satisfaction and the provision of health services.(15)The results of this study are in line with previous research which stated that electronic prescribing was preferred over paper prescribing and participants who used electronic prescribing were satisfied with the prescribing process. Apart from that, in electronic prescribing there are no errors in administering medication because all options for drug names, dosages and directions for use are provided in the prescription writing menu so as to prevent errors in administering medication.(16)

Other research shows that electronic prescribing can minimize risks in the prescribing phase reducing waiting times.(17)Electronic prescribing can increase pharmacy efficiency because it shortens the time it takes to read a prescription, allowing pharmacists to prepare the required medication more quickly.(18)The results of other research also show that the prescription completion time for outpatients which guarantees the most satisfaction is less than 13 minutes. This shows that the longer it takes to complete a prescription, the lower the level of outpatient satisfaction will be.(19)

According to the researchers' assumptions, the development of an electronic prescribing application (e-prescribing) for pharmaceutical services can be said to be successful, because based on the results of a satisfaction survey between before and after the development, there has been an increase in the responsiveness aspect. This includes pharmaceutical services that are responsive to patient problems, quickly providing prescription queue numbers if they are queuing, preparing medication immediately, immediately telling them how to use it and dosage, and providing a good explanation of the medication the patient needs.

CONCLUSION

Based on the results and findings of the research, the conclusion of this research is that development was carried out by adding the latest features that are useful for validating patient prescriptions, including notification information if double validation of a prescription occurs and validation of taking medication has been carried out by photographing the patient or patient's family who took it. drug. Apart from that, patient satisfaction increased between before and after the development of electronic prescribing (e-prescribing). It is hoped that Kuala Pembuang District Hospital, Seruyan Regency, will continue to develop electronic prescribing (e-prescribing) to improve the quality of pharmaceutical services, such as

providing emergency stock notifications when medicines/medical equipment have reached limitations, notifications when medicines are approaching their expiry date.

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