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Electronic Prescription Service Standards

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***Abstract**: Tele pharmacy services have been widely used by the public, one of which is the service of distributing drugs using electronic prescriptions (e-prescribing). Medication is an important part of treatment, so information, monitoring in taking drugs is important. The e-prescribing service provides opportunities not to meet between patients and patients, so that the waiter is not optimal. Some e-prescribing services in hospitals are different. The purpose of this study is to find electronic prescription service standards (E-Prescribing) This research method is a qualitative method by finding facts in the field which is then analyzed deductively. Primary data were taken by interviews with doctors, pharmacists and consumers. The result was that the e-prescribing system and services had not met the rules of pharmaceutical service standards. So there needs to be a system change in e-prescribing services.*

Keywords: standard; e-prescribing; effective; standard e-prescribing service

1. INTRODUCTION

Telemedicine is widely used as an alternative to overcome service access problems in the region, and is a useful alternative for those who have limited mobility, such as patients who cannot drive or need wheelchairs. One of the telemedicine activities that is currently popular with the public is tele pharmacy[1].

The Directorate of Pharmaceutical Services said that currently there are tele pharmacy services in the form of digital technology-based pharmaceutical services by presenting telecommunications between patients and related health services, in the form of health services such as drug review, counseling and therapeutic communication with patients, as well as online redemption of doctor's prescriptions in real time[2].

The latest pharmaceutical service today is the demand for drugs by doctors with electronic prescriptions or called e-prescribing. Electronic prescribing (e-prescribing) is a prescribing system using software designed to facilitate drug prescribing services starting from the prescribing stage (writing prescriptions), transcribing stage (reading prescriptions for the dispensing process), dispensing stage (preparation to submission of prescriptions by officers), administration stage (drug use process) and monitoring process[3].

The benefits of using electronic prescriptions are expressed by doctors because they reduce the risk of misreading, help in dosing the right drugs so that doctors are rarely contacted by pharmacies, prescriptions that come out a little, doctors are more compliant formularies, fast data input, paper efficient and practical. The disadvantage of the electronic prescribing system is that it cannot be used in the ER, is inferior to manual prescriptions and difficult to concoct drugs. The drawbacks to this electronic prescription are that allergy markers do not yet exist, alert systems do not yet exist, alerts for allergies are small and colorful, loading long during peak hours. Network peak hours, programs are not stable, servers and programs are not ready to launch, servers have been hit by viruses and there are still modules not finished, with this module can be known previous drug history[4]. The use of electronic prescriptions for pharmacies in hospitals is an increase in the number of prescriptions, because electronic prescriptions are addressed to hospital pharmacy installations. The implementation of electronic prescribing reduces the use of drugs outside the formulary because the choice of drugs in the system is the existing drug. Errors in reading prescriptions are also reduced, because with electronics there is no unclear doctor's writing[5]. Weaknesses are found in the flow of electronic prescriptions that are not yet practical, electronic prescription markers that enter do not exist, electronic prescriptions sent cannot be opened and sometimes patients have reached the pharmacy but the prescription transfer has not arrived. The speed of waiting time from prescription submission to drug receipt is a factor affecting patient satisfaction[4].

Some research results found that there are various kinds of e-prescribing implementations. Each hospital has a different e-prescribing system, different appearance, different e-prescribing service standards and there are no requirements for health facilities to use e-prescribing[6].
Based on these problems, researchers want to find e-prescribing service standards.

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2. METHODS

This research is qualitative research that wants to reveal facts in the field that will be used as a reference in the preparation of standard concepts. This study used subjects were 2 doctors, 2 pharmacists and 3 consumers. The data used are primary, secondary and tertiary data. Primary data were obtained from interviews with doctors, pharmacists and consumers. Secondary data in the form of regulations related to e-prescribing, namely Tertiary data obtained from the results of other people's research, either in the form of research reports or journals. The data collected by the

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researcher is used to make discussions and conclusions deductively.

3. RESULT

Telepharmacy supports work in improving the quality of work. Based on the results of an interview with the Chairman of the Indonesian Medical Organization at the Semarang City level

"Using an electronic system for prescribing will make prescriptions easier since there is a formulary. The system shows whether the drugs I need are available, including their prices. In addition, we can find out if the patient previously had an allergic history or not to the drug that I will give. From a doctor's point of view, e-prescribing helps make it faster. The doctor will find it easy to find the medicine for the patients. It is easy, especially for junior doctors. It is very helpful for those who may have few references to drug names."

From the interview, e-prescribing makes it easier for doctors, is faster and more effective, and avoids errors in giving drugs (medical errors).
This means that in building a system, the software developer must be able to adopt the needs of doctors in providing services, namely effective, efficient, and appropriate.
Meanwhile, the interview with pharmacist shows several errors during prescribing.

"*Sometimes, doctors do not write down the complete identity of the doctor, the patient's gender, weight, and height. It is important in administering medicine since some drugs are calculated based on body weight. When the doctor's writings are not clear, or the drugs are unavailable, we cannot reach him/her for confirmation. Finally, we ask the patient what the pain is, and we see what other drugs are given. By doing so, we know what the writing means. If there is a phone number we can reach, we will make a call."*

The flow of e-prescribing services in hospitals that have been running has not fulfilled the rules of patient rights. The following is an overview of the flow of e-prescribing services.

Figure 1. The system flow in e-prescribing services at Hospital

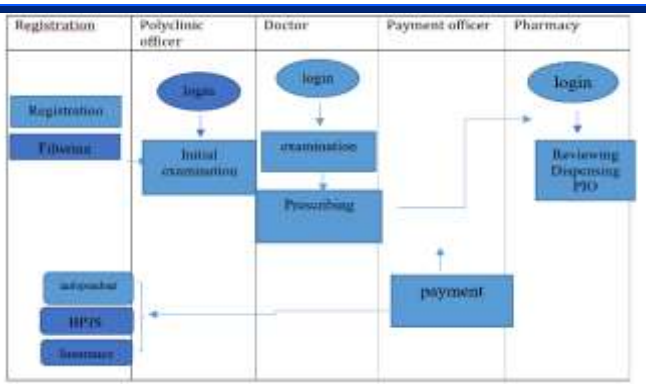

Figure 1 shows the flow of drug administration at Hospital starts when the patient arrives at the registration, which has been sorted based on the payment types: independent, BPJS, or Insurance. At the poly, patients get an initial examination by the nurse, then wait in the queue for the examination by the doctor. After being examined by either a doctor or another health worker, the patient is given an electronic prescription by the doctor. Electronic prescriptions are sent to the pharmacy for pharmacy services. Before taking the drug, the patient must pay in advance to the payment officer. Pharmaceutical Services include reviewing prescriptions, dispensing, and providing patient drug information.

Figure 2. The system flow in e-prescribing services on telehealth

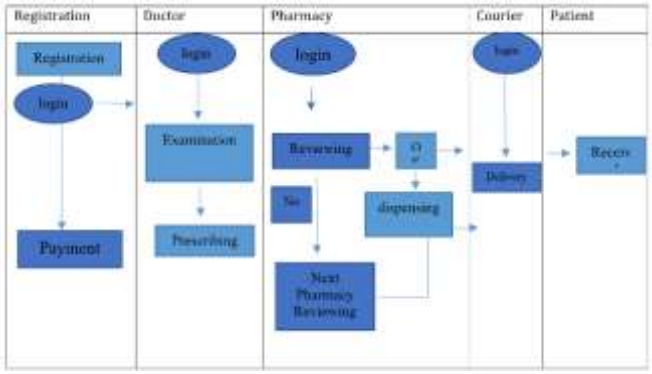

Figure 2 shows the flow of receiving drugs through telehealth with e-prescribing starts from the patient logging in to telehealth. Before communicating with the doctor, the patient is asked to pay in advance according to the doctor's rate listed in the application. After payment, the patient can consult a doctor within a specified time limit. After consultation, the doctor will provide a prescription as needed through the application. Electronic prescriptions are sent to network pharmacies. If one selected pharmacy does not have the specified drug available, it will move to the next network pharmacy. The pharmacist logs in, reviews the prescription, and dispenses the drugs. After the medicine is ready, the courier will deliver the medicine to the patient.
The results of interviews with several consumers with questions about what pharmaceutical clinical services carried out by pharmacists in receiving drugs through e-prescibing

are services that only get drugs when conducting examinations with telehealth, but when examinations are carried out at hospitals, pharmaceutical clinical services with e-prescibing carried out by pharmacists are limited to administering drugs and information on how to consume them.

4. DISCUSSION

Clinical pharmacy standards in Indonesia include: prescription review and service;

1) dispensing;
2) Drug Information Service;
3) counselling;
4) Pharmaceutical Services at home (home pharmacy care);
5) Drug Therapy Monitoring; and
6) Drug Side Effect Monitoring[7].

Results of research conducted by Didiek Hardiyanto (2007) that public perception of pharmacist services is still not good in prescription services, self-medication services, drug information and consultation services, as well as evaluation of drug use and monitoring of drug side effects[8]. Research conducted by Sudibyo Supriadi, et.all (2011) supporting Didiek's research, namely clinical pharmaceutical services carried out by pharmacists routinely only prescription studies, information and drug counseling. Information and counseling are carried out by telephone, while monitoring drug use is not always carried out, *home care* services are never carried out [9].

Pharmaceutical Service Standards in Pharmacies, prescriptions are written requests from doctors, dentists, veterinarians to pharmacists to provide and deliver drugs to patients according to applicable laws and regulations. The contents of the recipe consist of

1) Doctor's identity (Name, License, and address),
2) prescription date,
3) Signature/initials of the prescribing doctor,
4) Patient identity (name, address, age, gender, and weight)
5) Medication (Drug name, potency, dosage and amount requested, clear instruction)
6) Other information includes: a) Invocation is the sign R/ on the left side of each prescription, "R/ = recipe" means take or give. b) Prescription/ordination consists of the desired drug name, drug dosage form, drug dosage, and the amount of drug requested. c) Signatura is an instruction for the use of the drug consisting of signs for how to use it, the dosage regimen for administration, the route, and the time interval for administration. It must be written clearly for the safety of drug use and therapeutic success. d). Subscription is a legality in the form of a doctor's signature/ initials. e) Pro (designated) consists of the name, address, age, gender, and weight of the patient [10].

Formulary management is crucial in integrated patient care to create effective and efficient drug therapy that allows collaboration between doctors, pharmacists, and other health workers [11]. The most common causes of errors in hospital installations are found at the prescribing stage, transcribing, and dispensing. At the prescribing stage, the prescription does not specify the preparations, dosage, concentration of the drug, and route of drug administration. Sometimes, drugs are written in abbreviation, so it has the potential to cause medication errors. At the transcribing stage, the most errors are no dose given and no route of administration. There are no drug dosage forms, so this error can potentially cause medication errors. At the dispensing stage, errors that can potentially cause medication errors are incomplete drug [5]. Pharmacists have an important role in improving patient safety and security through prescription assessment and screening[12]. Pharmacists can intervene at the prescription level by providing recommendations to doctors or health workers regarding drug-related problems [13].

The concept of basic law, according to Bentham, comes from the theory of utilitarianism (the principle of utility), the use or utility of something that can be owned and can bring benefits, profits, pleasure, and happiness, or something that can prevent damage, displeasure, crime, or unhappiness. Bentham's classic theory is known as the greatest happiness for the majority. The value of usefulness produces happiness for everyone (happiness of the individual) and society (happiness of the community). Morality, according to Bentham, is an act taking into account usefulness so human happiness is achieved, unlike individual selfish happiness (hedonism) [14].

E-prescribing is part of an artificial intelligence system. It can improve people's welfare and increase efficiency in various fields, including health, transportation, and product consumers. Artificial intelligence systems enable new approaches to problem-solving and become potential for better decision-making [15].

Until now, there are no regulations governing e-prescribing. Even though many people choose to buy online, doctors and pharmacists are very receptive to using e-prescribing for its easiness and medical error avoidance. It is proven that e-prescribing provides many benefits in medical services. Therefore, it is necessary to have regulations governing e-prescribing and the preparation of e-prescribing modules.

5. CONCULSION

Current e-prescribing services still vary between hospitals. E-prescribing currently has no confirmation menu from pharmacist to doctor if pharmacist finds drug request irrelevant and there is no communication menu between pharmacist and patient after the drug is received. There needs to be a standard e-prescribing system and service that can be used as a guideline for doctors as prescribers and pharmacists who are not only limited to compounders and drug givers.

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