

## FIGURE OF POTENTIAL MEDICATION ERROR IN MEDICINE PRESCRIPTION FOR OUTPATIENT SERVICES OF "X" HOSPITAL IN BALI

Dewa Gede Wahyu Nuryatama<sup>1</sup>, Made Krisna Adi Jaya<sup>1\*</sup>

<sup>1</sup>Department of Pharmacy, Faculty of Math and Science, Udayana University, Bali-Indonesia

Corresponding author email: [krisnaadijaya@unud.ac.id](mailto:krisnaadijaya@unud.ac.id)

### ABSTRACT

**Background:** Medication errors (ME) in health services; in this case, hospitals are supposed to have zero accidents. Evaluation of the potential ME, such as doctor's prescription writing, must still be carried out in an effort to maintain service quality, especially in maintaining patient safety or preventing medication errors. **Objective:** This research aimed to see the figure of potential medication errors that occur in the prescribing process, in this case, is related to the completeness of the prescription seen from the administration and pharmaceutical approach, as well as the legibility of the prescriptions originating from outpatient services at one of the hospitals in Bali. **Methods:** This research was observational with a qualitative descriptive approach. Data collection was carried out retrospectively through medication prescriptions for patients received by pharmaceutical installations for outpatient services at hospitals from July until October 2022, totaling 110 prescriptions. **Results:** Results showed that 1.8% of prescriptions still did not write down the patient's name, then 9.1% of prescriptions had not written down the patient's age, 21.8% of prescriptions had not written down the patient's gender, and as many as 93.6% of prescriptions did not include the patient's weight, 2.7 % of prescriptions did not include the name of the doctor, 75.5% of the prescriptions did not include the doctor's SIP number, 1.8% of the prescriptions still did not write down the rules for using the drug, 10.9% of the prescriptions did not write down the strength of the drug dosage and 19.1% of the prescriptions did not provide information about dosage form to be administered to the patient. This study also shows 8.9% of the prescriptions are Illegible prescription. **Conclusion:** The results of the research found that administratively and pharmaceutically incomplete prescriptions and also Illegible prescription writing were still found. So the results of this study show how important it is to always evaluate the potential of medication errors, especially at the prescribing and transcribing phases, to improve patient safety. **Keywords:** Medication error; Prescription; Hospital; Retrospective

### INTRODUCTION

Hospitals as health service institutions were established to provide quality health services and are responsible to the community, especially in their coverage area, so hospitals are required to be able to provide safe and quality services according to predetermined standards<sup>[1]</sup>. The basic essence of the hospital is the fulfillment of the needs and demands of patients who expect the

resolution of their health problems at the hospital. Patients view hospitals' ability to provide medical services as an effort to heal and recover from their pain<sup>[2]</sup>.

The existence of a hospital is very important to provide health services for the community<sup>[3]</sup>. Health services are efforts that are carried out individually or jointly within an organization to provide promotive

(maintain and improve health), preventive (prevention), curative (healing), and rehabilitation (recovery) health services for individuals, families, groups, or communities environment<sup>[4,5]</sup>. Hospitals are obliged to provide safe, quality, anti-discrimination, and effective health services by prioritizing the interests of patients in accordance with hospital service standards and implementing health services following hospital service standards as part of clinical governance. good<sup>[6]</sup>.

Hospitals are health organizations that have a high risk of patient safety incidents<sup>[7]</sup>. Patient safety is a top priority in health care and is an important step toward improving hospital quality and safety<sup>[8]</sup>. Patient safety and security are fundamental things that need to be considered by medical personnel, including pharmaceutical services. Pharmaceutical services held in hospitals must be able to guarantee the availability of quality, useful, safe, and affordable medicines and medical devices to meet patient needs. This is to prevent the emergence of the problem of medication errors, which are health problems that have many impacts on patients, ranging from mild risks to even the most severe risks, such as causing death<sup>[9]</sup>.

A retrospective study stated that 52% of cases of medication errors reported to the National Monitoring Authority for Welfare and Health in Finland resulted in death or worsening conditions. The study also said that as much as 47% of them occurred in terms of drug prescribing<sup>[10]</sup>. Medication errors can occur in every step of the treatment process, both in the processes of prescribing, reading prescriptions (transcription), preparing for drug delivery (dispensing), and using drugs (administration)<sup>[11]</sup>. Two things that often occur in medication errors are errors in prescribing and dispensing<sup>[12]</sup>. This is supported by a similar study previously which identified medication errors at the

Sentra Medika Hospital Cikarang and produced data that the most frequent medication errors that occurred in the home pharmacy installation were during the prescribing phase with a total of 495 events or 28,11% in one month, followed by a transcription phase with a total incidence of 44 cases, or an average of 3.085%<sup>[13]</sup>.

Medication errors in health services are supposed to have zero accidents. Evaluation of doctor's prescription writing must still be carried out to maintain service quality, especially in maintaining patient safety or preventing medication errors. "X" Hospital in Bali is a health service facility that is required to evaluate the potential for prescription writing errors regularly, so it is necessary to conduct research related to the potential for medication errors in prescribing at outpatient services at "X" Hospital. It is hoped that this research can produce quality documents for data and evaluation materials for hospitals to improve the quality of their services and develop patient safety policies to reduce the incidence of medication errors. This study will provide an overview of how the potential for medication errors that occur in the prescribing process, in this case, is related to the completeness of the prescription seen from the administration and pharmaceutical approach, as well as the legibility of the prescriptions originating from outpatient services at the hospital.

## METHODS

The research was conducted at a hospital in Bali starting from September to November 2022. This research was an observational study with a qualitative descriptive approach. Data collection was carried out retrospectively through medication prescriptions for patients received by pharmaceutical installations for outpatient services at hospitals from July until October 2022, totaling 110 prescriptions.

This study provides operational boundaries to discuss and analyze problems. The types of potential medication errors observed in this study were at the prescribing phase, regarding the review of prescriptions seen from the completeness of administration and pharmaceutical aspects, then the transcribing phase, regarding the readability of prescriptions received at the Pharmacy Installation in Hospital Outpatient Services. The sampling technique used during this study is probability sampling, namely stratified proportional random sampling, taking into account the very large population size. Data collection was carried out manually where prescriptions were physically collected and then read and observed to study potential medication errors by assessing the readability and completeness of the prescription from an administrative and pharmaceutical perspective.

After the data is collected, it is processed by re-checking the completeness of the data. After checking, the data is grouped and inputted into the computer using Microsoft Excel. The data obtained in the study were analyzed descriptively. Data describing the potential for medication errors in drug prescribing at outpatient services hospitals are then presented in tabular form to make it easier for readers to understand the results of the study.

**RESULTS**

The drug prescribing system in outpatient "X" Hospital in Bali still uses the manual method by using the hands of doctors in each poly. The medication prescription samples were then screened. Prescription screening is a prescription check that is first carried out by pharmacists after the prescription is received. The following are the results of the prescription screening obtained by the observer.

**Table 1. Potential medication errors in the prescription administration completeness approach**

No	Potential ME	f	% (n=110)
1	There is no patient name	2	1.8%
2	There is no patient age	10	9.1%
3	There is no patient gender	24	21.8%
4	There is no patient body weight	103	93.6%
5	There is no doctor's name	3	2.7%
6	There is no doctor's SIP Number	83	75.5%
7	There is no doctor's address	0	0%
8	There is no doctor's phone number	0	0%
9	There is no doctor's sign	25	22.7%
10	Did not write the date of prescription	16	14.5%

The prescription format used to request medicines looks uniform, consisting of a prescription header containing the name, address, and telephone number of the hospital. There is also a blank space to fill doctor's name, doctor's SIP number, room of origin of the poly, and also the date the prescription was made. The prescription blank also contains an R/ sign and sufficient writing space to be able to write down the name of the drug, its strength dose, dosage form, amount of drug, and instructions for use. At the bottom, there is also a blank space to fill in the patient's identity, such as the number of the Medical Record, patient name, patient address, patient date of birth, patient body height and weight, and patient's telephone number.

In general, the prescription blanks used by "X" Hospital have met the standards set by the Ministry of Health of the Republic of Indonesia when viewing the completeness of the doctor and patient information blanks contained in the prescription blank. Correct

prescription writing involves adherence to a strict format to ensure completeness and specificity [14]. But unfortunately, not all clinicians comply with filling out all of the doctor's and patient information forms on the medical prescriptions.

**Table 2. Potential medication errors in the prescription pharmaceutical completeness approach**

No	Potential ME	f	% (N=110)
1	There is no name of the drug	0	0%
2	There is no Strength/dose preparation	12	10.9%
3	There is no dosage form	21	19.1%
4	There is no amount of the drug	0	0%
5	There is no rules to using the medicine	2	1.8%

**Table 3. Potential medication errors in the Illegible prescription writing**

No	Potential ME	f	% (N=110)
1	Illegible prescription writing	9	8.9%

**DISCUSSION**

This study aims to be able to see an overview of the potential for medication errors in prescribing drugs in outpatient services in one of the hospitals in Bali. When someone carries out the treatment process at the hospital, it is certainly not free from risk. So it is necessary to increase patient safety and evaluate the potentials that can later endanger patient safety. The presence of patient safety in health services aims to minimize adverse events and try to eliminate the impact caused through preventive measures during the provision of health services [15].

Prescription screening is a prescription check that is first carried out by pharmacists

after the prescription is received. Based on Table 1 and Table 2, it can be seen that the potential for medication errors still occurs in outpatient prescribing at the hospital. Administrative and pharmaceutical incompleteness has the potential to become a cause of medication errors which can give impact many things, such as delays in patient therapy. In this study, it was observed that 1.8% of prescriptions still did not write the patient's name clearly. Although the numbers are not that big, this aspect must be considered. Writing the patient's name clearly and completely will help avoid mistakes in giving drugs with almost the same identity or name [16]. Furthermore, this study also resulted that as many as 9.1% of prescriptions did not include the patient's age, 21.8% of prescriptions did not include the patient's gender, and as many as 93.6% of prescriptions did not include the patient's body weight. The age and weight of the patient are one of crucial things in determining the dose of a drug. These two things are very important in calculating the dose with the patient's age and weight, especially in children and baby patients [17]. The lack of information on the patient's weight on the prescription can affect the determination of an effective dose for the symptoms/diseases they are suffering from [18]. In addition, information on the patient's age and weight is also used to monitor and assess whether the prescribed dose is appropriate or not, as well as to consider the appropriate drug dosage form before it can be given to the patient [19].

Not only reviewing the completeness of patient administration, but this study also looked at the administrative completeness of doctor's information as the prescriber. This study showed that 2.7% of prescriptions did not include the doctor's name, 75.5% of prescriptions did not include the doctor's SIP number, and 0% of prescriptions did not include the doctor's address and telephone

number. In writing prescriptions for patients, it is very important to include the doctor's name in the prescription with reasons to be responsible for the prescription and as a sign of legality or authenticity of the prescription so that it can determine therapeutic decisions for patients, besides that it can also show that the prescription is genuine so that not be abused by anyone other than professional doctors<sup>[17]</sup>. It is also very important to write the doctor's SIP aspect to ensure patient safety and that the doctor who writes the prescription has rights and is protected by law in providing treatment and has fulfilled the requirements in carrying out the practice as stipulated in the law and to ensure that the doctor is legal. professionally recognized as a doctor<sup>[16]</sup>.

When viewed from the pharmaceutical completeness approach, research shows that 0% of prescriptions do not include the name of the drug. This is suitable as it should be. In addition, the number 0% prescription also does not include the amount of drug that will be given to the patient. The amount of drug should have been written down in order to make it easier for the pharmacist to give the appropriate amount of drug to the patient according to the length of therapy that the doctor wants to apply to the patient. The relatively small figure of 1.8% of prescriptions still does not write down the rules for drug use. The rules for using drugs, in this case, are very important cause pharmacists can correctly label the medicines that will be given to patients and they can take drugs in ways and rules that are in accordance with the wishes of the doctor to achieve success in patient therapy<sup>[20]</sup>. Through table 2, we can see that this study shows 10.9% of prescriptions did not write down the dosage strength of the drug, and 19.1% of the prescriptions did not provide information about the dosage form to be given to patients. In a prescription, it should not only contain one pharmaceutical

component but must be complete to avoid drug administration errors. Information regarding dosage forms and dosage strengths needs to be written down, especially for drugs that have various dosage forms and dosage strengths, so that if these two components are also written in full, it will facilitate the drug dispensing process<sup>[21]</sup>.

Furthermore, in table 3, it can be seen that 8.9% of the prescriptions are still difficult to read. The doctor's handwriting is known for its unique writing style by the community, so when receiving a prescription with illegible writing, it seems to be a natural thing and is often found in manual prescriptions, which are still widely used in hospitals in Indonesia<sup>[22]</sup>. Although not all are fatal, the illegibility of medical prescriptions written by doctors is an important issue to be addressed to improve patient safety<sup>[14]</sup>. Poor prescription writing is the main reason pharmacists have difficulty understanding prescriptions. Many studies show that medical colleagues spend extra time interpreting orders and notes because of poor handwriting. Among the many existing health workers, doctors are the only ones who, when providing services to patients, must collaborate with other health workers, in this case, for example, with pharmacists, to be able to prepare and deliver drugs to patients. The consequence of this collaboration is that doctors must always write down what they want to convey to pharmacists regarding medicines needed by patients in writing that is clear and easily understood by the pharmacist concerned<sup>[23]</sup>.

## CONCLUSION

The results of the research found that administratively and pharmaceutically incomplete prescriptions were still found following the regulations stipulated by the ministry of health of the republic of Indonesia. A medical prescription can be said as a complete prescription if the points

contained in each completeness of the prescription are all listed on the prescription sheet. This study also found there is still illegible prescription writing. So the results of this study show how important it is to always evaluate the potential of medication errors, especially at the prescribing and transcribing phases, to improve patient safety.

### CONFLICT OF INTEREST

No conflict of interest in this paper. This paper was written independently. All authors disclose no financial or personal relations with other persons or organizations that could inappropriately influence the work.

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