Analysis of Pharmacist's Integrated Patients Progress Notes (IPPN) in Hospitalized Geriatric Hypertension Patients

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Abstract—*Monitoring drug therapy is one part of the standard of pharmaceutical services in hospitals which is the responsibility of pharmacists with document efforts through Integrated Patient Progress Notes (IPPN). The method of writing patient development notes is in the form of Subjective, Objective, Assessment, and Plan (SOAP) data. The suitability of SOAP filling is essential because it is a means of communication, coordination, or col Laboratoriumation between health professionals in providing services to patients, preventing errors and repetition of information, and helping health professionals manage time. This study aims to analyze the completeness and suitability of filling out the IPPN form. This research method was carried out descriptively qualitative with a case study approach and retrospective data collection from the medical records of patients with Geriatric Hypertension Inpatient from Hospital X in Padang City. From 125 available data, 31 cases were obtained that met the inclusion criteria, and results for the analysis of the completeness of the pharmacist's IPPN writing, namely 23 IPPN (71.1%) which were written completely, and 8 other IPPN (25.8%) were written incompletely with the most frequent category of completeness not written, the time of writing IPPN. As for the results of the analysis of the pharmacist's IPPN writing pattern, there were no IPPN (0%) written correctly / according to the 31 IPPN analyzed.*

Keywords— *IPPN; Subjective; Objective; Assessment; Plan.*

I. INTRODUCTION

Hypertension is a non-communicable disease and is a serious health problem both in the world and in Indonesia. Hypertension is a condition where blood pressure increases above the normal threshold, namely systolic blood pressure ≥140 mm Hg and or diastolic blood pressure ≥90 mm Hg. The World Health Organization estimates that currently, the prevalence of hypertension globally is 22% of the total world population. Based on Riskedas 2018, the prevalence of hypertension in Indonesia is 34.11%, higher than the 2013 data of 25.8%, while in West Sumatra it is 25.16%.(1).

Hypertension is a disease that requires public health services, especially in hospitals. According to the *World Health Organization* (WHO), a hospital is a social and medical organization whose mission is to provide services to the community (comprehensive) for the treatment (curative) and prevention (preventive) of diseases which are an integral part. Hospitals are health facilities that provide comprehensive and personalized health services, including inpatient, outpatient, and emergency medical services (2)

Hospital pharmacy services are an integral part of the hospital healthcare system with a focus on patient care, and the provision of high-quality and affordable medicines, medical devices, and health supplies, including clinical pharmacy services, to all levels of society. Pharmacists, especially those working in hospitals, must realize that the paradigm of pharmaceutical services is evolving from a product-centered paradigm to a patient-centered paradigm. Therefore, the ability of pharmacists must be continuously improved to realize the paradigm shift. That way, Indonesian pharmacists can compete and become masters in their own country (3).

A pharmacist providing drug services to a patient shall maintain a patient-specific record that includes the medication provided to the patient in chronological order. Documents about the service shall consistently standardized in records. Patient care services require various types of documents, including internal pharmacy records, invoices, patient information, outcome assessments, and communication with fellow care teams (4).

Pharmacists document all actions taken in the practice of visiting to enhance their professional responsibilities, as a source of teaching and research, and as a quality of professional practice. Documenting is something that must be done in all pharmaceutical service activities. Documents include information on drug use, changes in therapy, records of drug use reviews (related to drug use, recommendations, results of discussions with doctors, implementation, and results of therapy) (5).

According to WHO, 70-80% of healthcare errors are caused by poor quality communication and lack of understanding of team members, which requires documentation. The importance of documentation to prove the work of health workers has been done in pharmaceutical services. Pharmacists have experience in managing prescriptions, but many do not have experience in documenting patient care activities. A more comprehensive care document is essential if pharmacists are to implement patient care services, including medication therapy management (4). IPPN (Integrated Patient Progress Note) is documentation with a format integrated into a standardized form in the patient's medical record using the SOAP

(*Subjective, Objective, Assessment, Plan*) method and is carried out by medical professionals on the development of the patient's condition (6).

This method enhances effective inter professional communication and is expected to result in better record-keeping as all professions write in the same document resulting in reduced miscommunication, decreased adverse event rates improved patient safety, and impacted quality of care (7).Based on previous research conducted by Yuandi (2020), 31 cases were obtained that met the inclusion criteria and the results for analyzing the completeness of pharmacist IPPN writing, namely 7 IPPN (22.6%) which were written completely, and 24 IPPN (77.4%) others were written incompletely with the completeness category that was most often not written, namely the time of writing IPPN.

Meanwhile, the results of the analysis of the accuracy of the pharmacist's IPPN writing were that there was no IPPN (0%) written correctly from the 31 IPPN analyzed [8]. Meanwhile, based on Virza's research (2020), the results of the analysis of the completeness of the pharmacist's IPPN writing were 25 IPPN (78.12%) which were written completely from 32 IPPN analyzed, and the results of the analysis of the accuracy of the pharmacist's IPPN writing, namely no IPPN (0%) which was written correctly from 32 IPPN analyzed [9]. Based on research conducted by Hudria (2020), it was found that the completeness of the pharmacist's IPPN writing data was 26 (74.29%) pharmacist IPPN out of 35 pharmacists IPPN analyzed and the analysis of the accuracy of pharmacist IPPN writing was that none of the 35 pharmacist IPPN analyzed (10).

II. RESEARCH METHODS

This research conducted for 3 months (June 2022 to August 2022) at Hospital X. This research was conducted using qualitative descriptive research method and case study approach. Data were collected retrospectively from the medical records of patients of Hospital X, Padang City, West Sumatra, Indonesia, from January 1, 2021 to December 31, 2021. The sample collection technique was purposive sampling. The research data collection was carried out in the following flow:

Selection of patients who fit into the inclusion criteria Inclusion criteria include:

a. Patients diagnosed with hypertension in the internal medicine department of Hospital X from January 1, 2021, to December 31, 2021.

b. Patients with age ≥ 60 years (elderly)

c. A complete patient medical record and an Integrated Patient Progress Note (IPPN) are made by the pharmacist.

Exclusion Criteria include:

a. The patient's medical record is not legible

b. Hypertensive patients with more than 5 comorbidity

Filling in the data collection sheet according to the patient's medical record The data needed from medical records include:

a. Demographic data in the form of patient name, gender, patient age, Date of Admission (DOA), and Date of Discharge (DOD).

b. Clinical data in the form of the main diagnosis and concomitant diagnoses of the patient's disease.

c. The medication data provided includes the name of the drug, the dose given, the route of use of the drug, and the rules of use given.

d. Patient's vital signs and Laboratorium data.

e. Integrated Patient Progress Record (IPPN) data created by pharmacists.

f. The records of other professionals, namely doctors and nurses, were created before the Integrated Patient Progress Record (IPPN) was written by pharmacists.

A. Data Analysis

A descriptive analysis study, data obtained from written documents in medical records. Analysis was carried out by discussing case by case using the Technical Guidelines for Pharmaceutical Service Standards in Hospitals, Technical Guidelines for the Discovery and Management of Hypertension, and the American Hospital Formulary Service (AHFS) Drug Information and other treatment guidelines. Data on completeness and writing patterns were processed in the form of percentages to see the picture of completeness and writing patterns in filling out the Integrated Patient Progress Notes (IPPN) of pharmacists.

The conclusion of this study is the number of IPPN in the form of a percentage that is written completely with the completeness parameters, namely, there is writing the date of the visit, the time of the visit, the name, title, and signature or initials of the pharmacist, as well as writing subjective, objective, assessment and plan data on the IPPN sheet. The conclusion of the results of the analysis of IPPN writing patterns is that the writing on the subjective/objective / assessment/plan is correct as it should be.

III. RESULT AND DISCUSSION

There were 125 medical records of elderly hypertension patients to be studied, but only 31 patient records met the inclusion criteria. The causes were as follows, namely, 38 medical records did not have Integrated Patient Progress Notes (IPPN) by the pharmacist, 9 were incomplete medical records, 20 patient medical records were not legible, and 27 medical records had more than 5 comorbidity. Based on the research that has been conducted, the following results were obtained:

A. Completeness Writing IPPN Pharmacist

Based on 31 patients who met the inclusion criteria, 23 (71.1%) pharmacist's Integrated Patient Progress Notes (IPPN) were classified as complete, while 8 (25.8%) other IPPN were classified as incomplete. The category of IPPN completeness contains the date and time of the pharmacist's visit, the pharmacist's signature, the pharmacist's clear name and title, and filling in SOAP data (Subjective, Objective, Assessment, and Plan). Incomplete pharmacist IPPN were mostly caused by not writing the time of the pharmacist's visit on the patient's IPPN.

From table 1, there were 31 medical record, 24 IPPN (77.4%) wrote the time of the pharmacist's visit, then those who wrote the pharmacist's title were 29 IPPN (93.5%). And

those who wrote the pharmacist's initials amounted to 30 IPPN (96.7%). The date of the visit and the name of the pharmacist were both completed by 100%. In the completeness of SOAP (Subjective, Objective, Assessment, and Plan) writing, it was found that 30 IPPN (96.7%) wrote subjective data and plans. In objective data and assessment, both were filled in completely as much as 100%.

TABLE 1. Completeness of pharmacist IPPN writing (N=31)

No.	Completeness Category	Complete	
		Number (n)	Percentage (%)
1.	Visit Date	31	100 %
2.	IPPN writing time	24	77,4 %
3.	Pharmacist's Signature	30	96,7 %
4.	Pharmacist Name	31	100 %
5.	Pharmacist Degree	29	93,5 %
6.	S (Subjective)	30	93,5 %
7.	O (Objective)	31	93,5 %
8.	A (Assessment)	31	93,5 %
9.	P (Plan)	30	93,5 %

The factor causing the incomplete filling of the pharmacist's IPPN is the lack of pharmacists who treat patients in the inpatient department of Hospital X, Padang City so IPPN filling is not carried out every day during patient hospitalization. In addition, the factors that cause incomplete and inconsistent filling of the pharmacist's IPPN are the lack of communication between pharmacists and other medical staff in filling out the IPPN, the pharmacist's busy schedule such as checking prescriptions, providing counseling to patients or managing drug supplies and time pressure which can hinder officers in writing IPPN.

A. Pattern Writing IPPN Pharmacist

TABLE 2. Pharmacists' IPPN writing pattern (N=31)

No.	IPPN Writing	Correct/ Suitable	
		Total (n)	Percentage (%)
1.	S (Subjective)	24	77,4 %
2.	O (Objective)	0	0 %
3.	A (Assessment)	30	96,7 %
4.	P (Plan)	29	93,5 %

Based on the 31 IPPN analyzed, none of the IPPN writing patterns were written appropriately, with the following analysis results:

Subjective (S)

In the analysis of the pharmacist's IPPN writing pattern based on the SOAP format, 24 IPPN (77.4%) were found to be appropriate and 7 IPPN were appropriate.
(22.5%) were not appropriate in subjective data. Subjective data includes patient complaints related to drugs or diseases originating from the patient himself or his family [11].

The subjective on the IPPN is considered inappropriate, due to discrepancies or contradictions between the subjective filled-in on the pharmacist's IPPN and the subjective on other professional records, or it could also occur because the pharmacist did not fill in the subjective data on the IPPN. Discrepancies in filling in the subjective on the pharmacist's IPPN can be seen in cases 7,9,11,12,15,20 and 25.

In case 7, the pharmacist wrote the subjective data on the IPPN in the form of decreased weakness, while the other

professional wrote that there were few black stools, weakness, and cough. So, it can be assessed that there is a discrepancy between the subjective data on the pharmacist's IPPN and the subjective data made by other professions, so the pharmacist's IPPN is considered inappropriate.

In case 9, the pharmacist wrote a subjective on the IPPN in the form of increased abdominal pain, while other professionals wrote that the pain the stomach is reduced. So, it can be assessed that there is a discrepancy between the subjective data on the pharmacist's IPPN and the subjective data made by other professions, so the pharmacist's IPPN is considered inappropriate.

In case 12, the pharmacist wrote the subjective data on the IPPN in the form of decreased shortness of breath and decreased appetite, while other professionals wrote that liver pain and shortness of breath were reduced. So, it can be assessed that there is a discrepancy between the subjective data on the pharmacist's IPPN and the subjective data made by other professions, so the pharmacist's IPPN is considered inappropriate.

In case 15, the pharmacist wrote the subjective data on the IPPN in the form of increased cough and increased shortness of breath, while other professionals wrote that shortness of breath increased, fever decreased, body weakness, cough with phlegm, and difficulty eating. So, it can be assessed that there is a discrepancy between the subjective data on the pharmacist's IPPN and the subjective data made by other professions, so the pharmacist's IPPN is considered inappropriate.

In case 20, the pharmacist did not write the subjective data properly on the IPPN so it was considered inappropriate. This is an error and mistake by the pharmacist in writing the IPPN, so it is considered inappropriate.

Objective (O)

Analysis of the pharmacist's IPPN writing pattern based on the SOAP format, it was found that 0 IPPN (0%) was appropriate and 31 IPPN (100%) was not appropriate for objective data. Objective data contains data sourced from observations of laboratorium data and measurements made by other health professionals. Objective data includes vital signs and laboratorium data or other data related to disease and treatment or to support DRPs that will be written as assessment results [11].

In analysis of objective data writing patterns, there were 31 IPPN (100%) that were written inappropriately, because not all laboratorium data and vital signs related to treatment or disease were written, and also because pharmacists did not fill in the objective data on the IPPN completely.

Discrepancies in filling out the objectives on the pharmacist's IPPN because not all laboratorium data and vital signs related to the treatment or disease can be seen in all cases. Of the 31 IPPN analyzed, 11 IPPN contained only blood pressure, while 20 IPPN did not contain blood pressure. The majority of Laboratorium data and vital signs that are often not written by pharmacists on IPPN objectives are blood pressure and pulse rate. Even though these data are closely related to hypertension. There are also Laboratorium data that are not written even though they support the medical problems

(diagnoses) and Drugs Related Problems (DRP) found such as in cases 5, 6, 8, 12, 14, 21, 24, and 28 which do not contain the Timed Blood Sugar (GDS) level even though the diagnosis is written Diabetes Mellitus (11).

Assessment (A) and Plan (P)

In the analysis of pharmacist IPPN writing patterns based on the SOAP format, 30 IPPN (96.7%) were found to be appropriate and 1 IPPN (3.2%) was not appropriate in the assessment data. Whereas in the plan data, 29 IPPN (93.5%) were found to be appropriate and 2 IPPN (6.4%) were not appropriate. Assessment data contains drug-related problems (DRP) found after analysis by pharmacists, such as Inappropriate drug selection, indications without drugs, drugs without indications. The plan data contains a pharmaceutical service plan based on the results of the analysis in the assessment (11).

Analysis of the suitability of writing assessment data and plan data, there is 1 IPPN that is equally inappropriate due to the relationship between these two data, namely in case 16. In the other IPPN, namely in case 20, there is a mismatch in the plan data.

In case 20, the pharmacist wrote an assessment on the IPPN in the form of a patient with no drug-related problems, even though there was lansoprazole administration though the patient had no complaints of gastric disorders or peptic ulcers.

For other drugs, it has been given according to the diagnosis and condition of the patient. When the patient's blood pressure is high candesartan and amlodipine are given to overcome it, besides that the patient is also positive for COVID-19 so oseltamivir, azithromycin, and administration of vitamins C, D, and zinc to increase endurance during covid-19. In data plan, the pharmacist did not write or did not fill in the data, there should be a recommendation to stop giving lansoprazole peptic ulcer drugs. This is an error and pharmacist error in writing SOAP, so the data plan is considered inappropriate.

From the above cases, it can be concluded that the discrepancies in IPPN writing are caused by the absence of continuity between subjective and objective data, or objectives that do not contain vital sign data or Laboratorium data that need to be recorded in conjunction with the drugs given to the patient (11).

The writing of one of the SOAP components is missing even though each component of SOAP has its own rules in writing related to each other and according to the patient's condition. This may be due to the absence of Standard Operating Procedures (SOP) from the hospital in writing pharmacist IPPN and the lack of pharmacists who treat patients (11).

IV. CONCLUSION

From the research that has been carried out it can be concluded:

1. Analysis of the completeness of the writing in Pharmacist's Integrated Patient Progress Notes (IPPN) found that only 23 (74.1%) were classified as complete writing out of 31 pharmacist's IPPN analyzed.
2. The completeness data that is often not written on the Integrated Patient Progress Record (IPPN) sheet by pharmacists is the time of writing the IPPN, which only amounts to 7 IPPN (22.5%) of the 31 IPPN analyzed.
3. Analysis of the writing pattern of IPPN found that no pharmacist's IPPN (0%) was written correctly / suitable according to the 31 pharmacist's IPPN analyzed.

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