Prescriptions Conformity with National Formulary: A Literature Review to Explore the Need for Pharmaceutical Cost Containment

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Abstract. The government has created the National Formulary (Fornas) as a tool for control of quality and cost control. Patients' prescriptions should be based on the national Formulary during the era of national health coverage. If prescriptions complied with the national Formulary, the cost would reduce. This research aimed to determine the factor of non-conformity between prescriptions and the national Formulary measures it and explores the need for pharmaceutical cost containment. This study applied the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method between 2014 and 2022. The search terms "Kesesuaian Fornas" were utilized on Google Scholar, Pubmed, ScienceDirect, and Scopus. The evaluation was organized by factor and subsequent action. Searches of the databases Google Scholar (2,246), Pubmed (0), ScienceDirect (1), and Scopus (0) yielded a total of 247 results. Following the selection procedure, 34 articles were included in the analysis. The average conformity of prescription with Fornas was 71.02%. Prescription adherence, drug availability, and formulary Conformity with Fornas were the primary factors in the conformity of prescriptions with the National Formulary. Conformity with the national Formulary for prescriptions can be enhanced through three primary actions: increasing prescription adherence, updating the Formulary, and procuring following the electronic catalog.
Keyword: Healthcare Cost, Prescription, National Formulary, Pharmacy, Medicine, Indonesia,

1 BACKGROUND

Health Insurance. Implementing quality control and cost Drug management is essential in the era of National Health Insurance. Implement quality control and cost control. The government has established the National Formulary (Fornas) as a quality control tool and the drug E-catalogue as a price control tool [1]. Fornas is a list of needed and available medications for patients in healthcare facilities. The Formulary is very important because it can improve the quality of health services and the cost-effectiveness of treatment, and it can assist health facilities in understanding the long-term needs and priorities for enhancing the quality and safety of drug use [1],[2]. Formularies can undoubtedly exert a strong influence on prescribing decisions and medication use. When a formulary is utilized effectively, it becomes the critical element of a formulary system, one of the most effective means of ensuring rational drug therapy and controlling drug costs [3].

The conformity of the prescription with Fornas stipulated in a Decree of the Minister of Health of the Republic of Indonesia, where the percentage of the formulary in writing the prescription obtained is considered acceptable if it meets the minimum hospital service standards, requires that the acceptance of the prescription with the formulary be 100 per cent.[4]. The National Formulary (Fornas) implementation process as quality control and cost control in drug administration still has many problems. As a result, the goal of Fornas can not reach the optimum result [1].

Non-conformity between Fornas and prescriptions resulting from non with the formulary causes drug shortages or blanks. On the other hand, there are empty drug stocks, and fulfilling more types of drugs than the standard requires a greater investment. In addition, the service time will increase, prescriptions will be rejected, drug prices will rise, drugs will be unavailable, treatment continuity will remain stagnant, and the total cost of treatment will be high. [5]. There is a significant relationship between the conformity of drug prescriptions with the national Formulary and the difference in drug costs[6]; besides that, it can also cause the total cost of treatment to increase [5]. This study aims to determine whether health institutions can achieve basic service criteria based on Conformity with the National Formulary and explores the need for pharmaceutical cost containment. What distinguishes this research from previous research is that no research has reviewed many articles regarding the relationship between the national Formulary and hospital

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prescriptions. This study may provide insights for policymakers and related parties so that every receipt made by hospital doctor will pay attention to write receipts that must conform with the National Formulary.

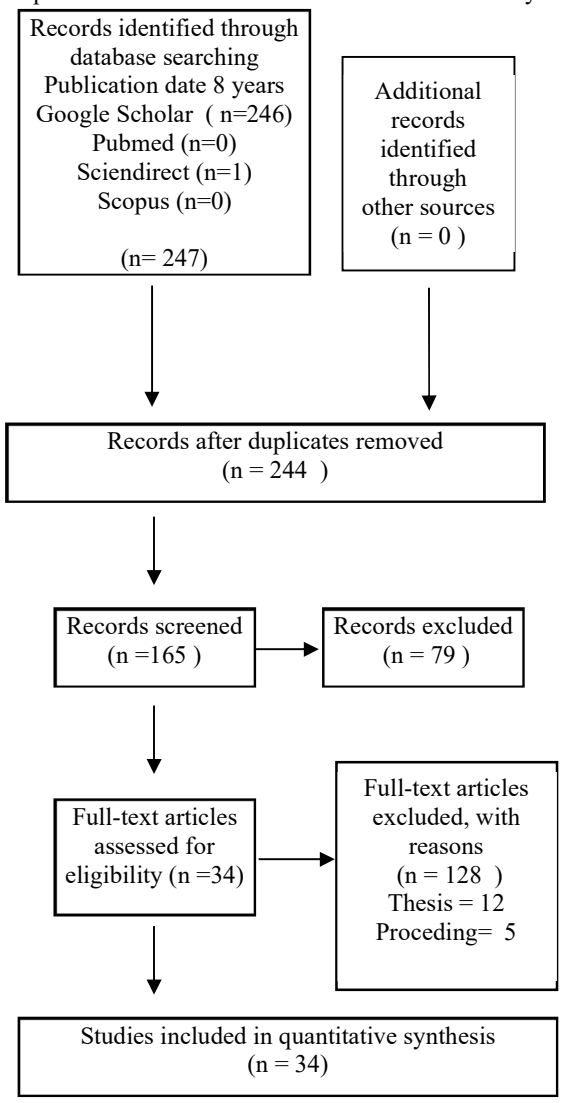

Fig. 1. PRISMA. Flow Diagram

2 METHOD

This research is a literature review to determine the conformity of the prescription with Fornas. Three primary phases were involved in acquiring the data: first, we identified and selected relevant studies on our issue. Second, we evaluate the retrieved research that met all qualifying requirements. Then, for each study, we conducted a review and data extraction.

Relevant research studies were located through an extensive search from 4 electronic databases (Google Scholar, Pubmed, ScienceDirect, and Scopus) on August 2022. We conducted a literature search for published articles in Indonesian and English that reported on prescription with Fornas before recent years (2014 - 2022). the literature review was conducted by entering the keyword "Kesesuaian Fornas." Only articles with well-specified data for the variables of interest were reviewed. Inclusion criteria include a publication detailing the between prescription and national Formulary (Fornas) from health facilities serving BPJS. The selection of studies was guided by PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) diagrams. It showed in Figure 1.

The first author extracted data. The data extraction form included details of the study, health Facilities, region of BPJS., the drugs item, factors, , and follow-up. The author's discussion handled disagreements or differences over data extraction. About 247 studies were initially collected and reviewed. After further tracking of references from the retrieved studies, only 34 studies were finally analyzed that met all eligibility criteria.

3 RESULT AND DISCUSSION

According to the literature review, only five health facilities (13,51%) had full prescriptions compliant with the national formulary. The number of facilities is more than 34 because, in two journals, research was done in two health facilities. The average prescription conformity for the national formulary was 71.82%. The review results that contain the Region of BPJS, health facilities, and Conformity of prescriptions with the national Formulay can be seen in Table 1.

This article discusses the factors that lead to prescribing differences from the National Formulary. The review identified ten factors whose specifics are listed in Table 2.

The conformity of prescription with Fornas substantially impacts the service quality at pharmaceutical facilities [32], [37], [43]. Prescriptions for BPJS. Patients use medications not listed in the National Formulary (Fornas) [33] and hospital formulary (FRS), resulting in patient complaints because they must purchase these drugs despite being from a lower socioeconomic status [33]. This occurs because drug prescribing has not completely utilized the Fornas restriction provisions[35]. Non-Fornas drugs predominated in the doctor's prescription pattern, which led to a predominance of these non-Fornas drugs in the subsequent period's medication procurement. Therefore, at the end of the year, when the non-Fornas drugs that were acquired previously are still in the storage facility, the drug inventory balance will be elevated[38]. There are differences between prescription writing and the national Formulary due to patients in emergencies or patients with conditions that prevent them from receiving drugs according to the national Formulary, as well as patient requests to prescribe certain drugs [44].

The availability of medicines in hospital formularies does not meet the National Formulary's standards for drug availability [21], [22], it has impact patients, so patients fail to get therapy [45]. Drug shortages in distributors can lead to doctors writing prescriptions that don't follow the formularies for drug supplies because the names of the drugs recommended have no substitutes that are the same in content as the drugs in the formulary [46] and the inability to find generic drug distributors [11]. The non-conformity of physicians'

prescription writing for formularies causes drug stocks to be depleted, inadequate, or excessive [46]. Another problem is that drugs are unavailable because they can only be used in level 2 health facilities [17], and the Primary health care remains to acquire medications from the District Pharmacy Installation, which administers medications using the APBD and APBN. Budgets [47].

Table 1. Facilities for study setting

Reference	Health Facility	Region	Conformity Prescription with Fornas (%)	
[7]	Primary Health Care	1	PHC1	77,01%.
[8]		1	PHC2	73,14%
[9]		1	PHC3	76,58%
[10]		1	PHC4	100%
[11]		1	PHC5	31,96%
[12]		1	PHC6	49,04%
[13]		1	PHC7	80.34 %
[14]		1	PHC8	85,81%
[15]		3	PHC9	70%
[16]		3	PHC10	92,36%
[17]		3	PHC11	50,14%
[17]		3	PHC12	56,85%
[18]		4	PHC13	100%
[19]		4	PHC14	56,29%
[20]		4	PHC15	86,07%
[14]		5	PHC16	73,69%
[21]		5	PHC17	68,04%
[22]		5	PHC18	80±2.1%
[23]		5	PHC19	41,63%
[17]		3	PHC20	61,77%
[24]	Type B Hospital	4	H1	72,18%.
[25]		1	H2	100%
[26]		1	H3	86,1%.
[27]	Type C Hospital	1	H4	61,76%
[28]		1	H5	100%,
[29]		1	H6	Generic drugs 99,58%., Branded drugs 97,21%.
[30]		1	H7	90,37%
[31]		1	H8	99,68%.
[32]		3	H9	71%.
[33]		4	H10	68,35%,
[34]	Type D Hospital	1	H11	57,04%
[35]		1	H12	71,22%.
[36]		1	H13	63%
[37]	Hospital	1	H14	91,70%
[38]		1	H15	93,04%.
[39]		-	H16	52,76%
[40]	Public health Office	5	PH1	90,30%
[17]		3	PH 2	61,59%,

Table 2. The Factor of Prescription with Fornas

Conformity Factors	Number Of Studies	Studies
Prescription adherence	16	[8]–[10], [12], [17], [19], [26], [29]–[35], [37]–[39]
Drug Availability	12	[11]–[17], [21]–[24], [26]
Conformity of the Formulary with the Fornas	13	[14], [18], [23]–[26], [28], [30], [34], [37]–[39], [41]
Doctor's habit	6	[9], [11], [23], [33], [35], [38]
Clinical condition	5	[10], [18], [35], [37], [42]
Procurement	5	[9], [15], [24], [27], [38]
Budget	4	[15], [22], [26], [28]
Doctor knowledge	3	[19], [29], [31]
Human resources	1	[22]
Distribution	1	[22]
Substitution	1	[33]

Doctors prescribe several drugs but are not yet included in Fornas and hospital formulary [14], [18], [28], [41]. The conformity rate of medicines based on Fornas and hospital formularies is still below the standard because hospital formularies do not possess all the Fornas-listed medications [30]. After all, the hospital formulary has not been updated [26], [38].The selection of Hospital formulary drugs that adjust drug items to the national Formulary is still not up to standard [24]. Adaptation of the hospital formulary to the present condition of pharmaceutical services and medications required by patients [34].

Due to the lack of adherence, commitment, and consistency of physicians in writing prescriptions according to the Formulary, there is still a lack of knowledge of the Formulary, and there is no force from hospital leadership toward physicians who write prescriptions outside the Formulary [38].

Depending on the therapy protocol, physicians prescribe medications differently, which leads to inconformity with Fornas [9], [33], [35]. Conditions of non-conformity can also come from the choice of the first-line drug [10]. Other reasons for non-conformity include patients in emergencies, the condition of patients who cannot receive medicines according to the national Formulary, and patient requests to prescribe specific medications [37]. Another reason doctors prescribe drugs that aren't in the Hospital's Formulary is that they assume that the drugs they prescribe are more effective for patients than those in the Hospital's Formulary. This inconformity is especially true for patients with a history of certain diseases only compatible with the drug [38].

The big difference between prescriptions and the national Formulary is that drug procurement policies aren't always followed [9]. For example, the Barito Kuala Regency formulary includes items not yet in the

National Formulary [19]. Another reason is that the suitability of buying drugs with the e-catalogue has not yet reached a common value [24]. Planning for drug needs at Primary health care is still based on how diseases spread, which is how the public health office plans and purchases drugs [27].

Prescription differences with the national Fornas may occur because the DAK (Special Allocation Fund) budget is the only source of funding[15], and the Health Service does not purchase all medicines included in the national Formulary. The limited budget for drug spending[26], [28] means that not all medicines included in the national Formulary are procured by the Health Service [15].

There is a difference between the prescription and the national Formulary due to a prescribing doctor's lack of understanding and socialization regarding the contents of the Hospital formulary and drug names, causing prescription differences with the national formulary[46]. If dissemination of the contents of the national Formulary to doctors is not maximized, then the number of prescriptions following the national Formulary is low [19].

A lack of transportation and drug distribution funding caused low availability and inconformity between prescriptions and national Fornas. Because there is no written recommendation from the health office as a policy requirement for distribution costs, not all Primary health care have budgeted, resulting in inadequate and unequal distribution of pharmaceuticals. Primary health care has always brought the medicines to the district pharmacy facility [22]. There is a shortage in the stock of medicines listed in Fornas because they are not available from distributors; as a result, they have adopted a policy of taking drugs with trade names to fulfill the patient's demand for these medications, thereby enhancing pharmacy services [33]. Inadequate pharmaceutical human resources result in the availability of medications with non-standard Fornas and disease patterns [22].

A suitable method is required to enhance prescription and national formulary conformity. This review explores strategies for improving the conformity of medicines with the National Formulary. It is shown in Table 3.

Table 3. Strategy to improve the prescription Conformity with the National Formulary

Follow Up Action	Number of Studies	Studies
Improving Prescription Adhérence	12	[8], [17], [23], [26], [29]–[32], [37]–[39]
Updating the Formulary	7	[15], [17], [25], [28], [34], [38], [39]
Procurement according to e catalogue	4	[11], [21], [22]
Improving H.R.'s knowledge and skills	3	[22], [25], [38]
Improving I.T	1	[22]
Distribution Cost	1	[22]

4 CONCLUSION

The average prescription conformity with Fornas was 71.02 percent. Adherence to prescriptions, drug availability, and formulary Conformity with Fornas was the primary determinant of prescription conformity with the National Formulary. Conformity with the national Formulary for prescriptions can be improved through three primary actions: increasing prescription adherence, updating the Formulary, and following the electronic catalog when purchasing.

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