

ANALYSIS OF PRICES OF PATENTED MEDICINES LISTED IN THE NATIONAL FORMULARY AND E-CATALOGUE IN PUSAT JANTUNG NASIONAL (RSPJN) HARAPAN KITA HOSPITAL, “DHARMAIS” CANCER HOSPITAL, AND PUSAT OTAK NASIONAL HOSPITAL (RSPON), JAKARTA PROVINCE

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Abstract

Cost control of drugs plays an important role in the implementation of the Health Insurance Program and one of the efforts related to this is the through the drug selection process in National Formulary (Fornas) and the determination of drug prices in e-catalogue to obtain drugs, especially patented drugs, at affordable prices without reducing the quality of health service. This study aims to analyze the decline in drug prices during the patent period that listed in Fornas and e-catalogue and the savings in drugs costs during the patent period at the hospital and the factors that influence the decline in drug prices. In this descriptive study, secondary data was taken crosswise from the information management system in three special hospitals in Jakarta - RSPJN Harapan Kita, "Dharmais" Cancer Hospital and RSPON- which listed in Fornas and used during January 2019 - June 2020, and drug price list according to the e-Catalogue and the regular in that period. The results showed a decrease in the price drugs that were still in patent period when they were listed in Fornas and e-Catalogue compared to the price of regular market by 55,1%. The Price rediction that occurred has resulted in savings in drug costs during the patent period at RSPJN Harapan Kita by 47,2%, RSPON (55,3%) and the “Dharmais” Cancer Hospita (36,1%). Drug tax value, NIE publication year, and type of drug therapy class that tend to cause drug prices to fall higher in addition to the impact of the implementation of Fornas in RSPON, RSPJN Harapan Kita, and "Dharmais" Cancer Hospital.

Keywords: *fornas; e-catalogue; drug price*

Introduction

Adjustment of drug prices is same as adjusment for goods and services in general, determinded by theory of supply and demand. When buyers or sellers possess market power (monopoly or monopsony), they change market prices. On the other hand, in

monopsony market, the Government dominates the market as the biggest buyer, consumers could force to get a better price.

Drug prices may different in every country. This is influenced by the state policy in regulating market prices. By comparing market prices, we can identify price variations and provide information about sources and interventions to reduce drug prices. The existence level of competition among drug variation categories is important in understanding drug pricing strategies.

Control of drug prices is an important role for implementation of Health Insurance Program and one of the efforts related is the existence of selection drug process in National Formulary and drug pricing in e-catalogues to obtain a reduction in drug prices, especially those are still in the patent period without reducing the quality of services. Health facilities received by JKN participants, each healthcare facility such as hospital is expected to use National Formulary as the basis for providing medicines in hospitals to improve drug price control at the hospital.

To achieve price saving result in decrease drug prices, the Government takes a role by enforcing JKN system and dividing drugs into 2 categories, namely e-catalog and non-e-catalog drugs (Susanto, Kristin, & Agastya, 2017).

Based on the result, this study was conducted with the aim of looking the impact of the drug selection system in National Formulary on cost control of drugs that still in the patent period in the JKN implementation, we expected National Formulary become a corridor for implementantion to improve the quality of health services for JKN participants in accordance with applicable theurapeutic norms and standards.

1. References

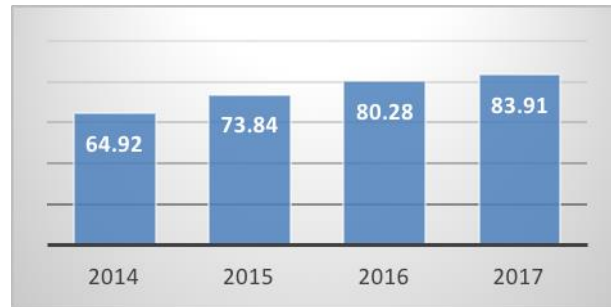
Social security is a social protection to ensure all people fullfill their basic needs for a decent life. Therefore, the state develops a social security system for all people and empowers the weak and underprivileged in accordance with human dignity in the form of a National social security system, which is health insurance, which aims to ensure that the community gets the benefits of health care and protection in basic needs. Health services, including promotive, preventive, curative and rehabilitative services, including medicines and medical consumables needed (Clark, 2012).

2. National Formulary

Drugs used in health services at JKN refer to national formulary as regulated in the provisions of the legislation. However, if in provision of health services, patients need drugs and not listed in national formulary, then there are provisions for their use (Kesehatan, 2018).

Based on monitoring by the Directorate of Pharmaceutical Services, Ministry of Health, on the suitability of the national formulary uses in hospital since the publication of national formulary in 2013 until 2017, it seen that there has been an increase in suitability of hosmital drugs with national formulary every year.

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Compatibility of hospital medicine
with National formulary
sampling data to 137 hospital in 33 provincials*

3. Medicines Classification

Drug can be classified in several ways. To disseminate information, increase knowledge and understanding to public about the rational drug uses, the Ministry of Health classifies drugs based on their name, dosage form, method of use, labelling, and pharmacological effects of drugs. Meanwhile in marketing, to determine the pricing strategy, medicines are categorized into 3 major groups, namely (Tjiptono, 2008):

- a. Patented medicines
- b. Generic medicines
- c. Branded off-patent medicines

4. Procurement of Medicines

The main function of procurement system is to get medicines meets the requirements at the right time, in the right quantity and the right price. There are several procurement methods than can be used, namely:

- a. Open tender
- b. Negotiation
- c. Direct appointment

5. Pricing

Pricing has two main roles in decision making process of buyer, the role of allocation and the role of information. Pricing has always been a problem for every company because pricing is not an absolute power or authority of an entrepreneur or company. In determining the price must be considered are the factors that influence, either directly or indirectly (Ghozali, 2018).

Research Methods

The method used in this study is descriptive analysis, document review and data filling in the drugs used in hospitals. The document review method is used to record and collect supporting data and then compare the drugs prices contained in e-catalog with the drugs prices listed on regular.

The population in this study is a list of drugs available at pharmacy installation of the National Brain Center Hospital (RSPON), Harapan Kita National Heart Center

Hospital (RSPJN) and Dharmais Cancer Hospital in accordance with national formulary 2017-2019.

In this study, descriptive data analysis was used through instruments with measured parameters to see the difference between e-catalog drug prices and regular drug prices. Data in the form of documents and reports that will be studied and reviewed so they can be processed by making a summary of price differences as core data. The data obtained will then be analyzed.

Results and Discussion

A. Drugs Used In Hospital

Profiles of drugs used in Harapan Kita Hospital, Dharmais Cancer Hospital and RSPOM are based on drugs uses data from January 2019 to June 2020 with the results in table 1.

Table 1
Drug Uses Profile In Hospital

Year	Total of drugs Item		
	RSPJN	RSKD	RSPON
2019	1.294	970	761
2020	1.706	884	694

B. Drugs Used according to National Formulary

Drugs according to National Formulary are categorized into 2 (two), namely:

1. Drugs according to national formulary 2019 are defined as included drugs in National formulary according to Minister of Health decree in 2017 and addendum in 2018 while drugs according to national formulary 2020 are defined as drugs that included in national formulary according to minister of health decree in 2019.
2. Non-national formulary drugs in 2019 and 2020 are defined as drugs that are not included in the National formulary according to the Minister of Health decree.

Based on data obtained at RSPJN Harapan Kita, Dharmais Cancer Hospital and RSPON (table 2), the highest proportion of drug use according to National formulary 2019 was Dharmais Cancer Hospital at 71.6% while in 2020 drug use according to National formulary was found in RSPOM which was 68.4%. The increase in drug uses proportion according to national formulary occurred in RSPJN Harapan Kita, which was 45% in 2019 and 51.8% in 2020 as well as RSPON experienced an increase in drug used according to National formulary in 2019 by 67.1% and 68.4% in 2020. The decrease in the proportion of drug use according to the national formulary occurred at the Dharmais Cancer Hospital which in 2020 was 68.0%. For the use of drugs that are not in accordance with national formulary, the highest number is in RSPJN Harapan Kita in 2019 at 55% and in 2020 48.2%.

Tabel 2
Presentage Of Drug Uses National Formulary And Non-National Formulary

Hospital		2019		2020	
		% Non Fornas	% Fornas	% Non Fornas	% Fornas
RSPJN Kita	Harapan	55,0	45,0	48,2	51,8
RS “Dharmais”	Cancer	28,4	71,6	32,0	68,0
RSPON		32,9	67,1	31,6	68,4

C. Used Of Generic And Branded Medicines

Generic medicines are defined as unbranded drugs that are marketed under the name of active ingredient. Branded medicines are defined as trademarked generic medicines and patented drugs.

Based on data obtained, the proportion of average number of generic medicine use in 3 (three) hospitals in 2019 was 31.40% and the average proportion of branded medicine use reached 68.60%. While data obtained in the first semester of 2020, the proportion of the average number of generic medicine use in 3 (three) hospitals was 28.51% and the average proportion of branded medicine use reached 71.48%. Thus the data in table 3 shows the proportion of branded medicine use in the 3 hospitals is higher than the generic medicine used, namely the average in 2019 reached 68.60% and increased in 2020 by 71.48%. Assuming the three hospitals are the highest referral centers that treat patients with difficult cases or diagnoses of rare diseases, it is possible to use branded medicines to treat these diseases.

Tabel 3
Presentage of Drug uses for *Branded* and *Generik*

Hospital	2019		2020	
	<i>Branded</i> (%)	<i>Generik</i> (%)	<i>Branded</i> (%)	<i>Generik</i> (%)
RSJPN Harapan Kita	64,3	35,7	77,1	22,9
RS Cancer “Dharmais”	71,9	28,1	72,7	27,3
RSPON	69,6	30,4	64,6	35,4
Average	68,6	31,40	71,48	28,52

D. Used Of Paten Medicines

Based on the data obtained, the proportion of patent medicine use in 2019 was an average of 3.92% and the proportion of non-patent medicine use was 96.08%. Meanwhile, in 2020 the average is 3.90% and the proportion of non-patented medicine use is 96.10% (table 4).

If the distribution is carried out in each hospital, the highest number of patent medicine uses is found in Dharmais Cancer Hospital, while the lowest number of patent medicine uses is in Harapan Kita Hospital. Assuming Dharmais Cancer

Hospital is the highest referral center to treats cancer patients where most of the medicine are originator medicine that still have patents.

Tabel 4
Presentage Of Drug Uses For Paten And Non-Paten

Hospital	2019		2020	
	% Non-Paten	% Paten	% Non-Paten	% Paten
RSJPN Harapan Kita	96,3	3,7	97,0	3,0
RS Cancer “Dharmais”	95,8	4,2	95,2	4,8
RSPON	96,2	3,8	96,1	3,9

E. Cost of Hospital Medicine

The data shows a decrease in the total cost of drugs issued by RSPJN Harapan Kita, Dharmais Cancer Hospital, RSPON to provide JKN participant in 2019 when compared to drug costs in the first half of 2020 with the average use of drugs according to national formulary by 77.87% in 2019 and 77.57% in 2020 while the costs required dor patent drugs at RSPJN Harapan Kita, Dharmais Cancer Hospital and RSPON in 2019 were 3.8% each; 7.3%; 13.5% and 16.2% in the first half of 2020; 3.6%;2.6% (table 5).

Tabel 1
Total Of Drug Uses For Obat Paten And Non-Paten In Hospital

Type of cost	RSPJN Harapan Kita		RS Cancer “Dharmais”		RSPON	
	2019 (12 Month)	2020 (6 Month)	2019 (12 Month)	2020 (6 Month)	2019 (12 Month n)	2020 (6 Month)
Total cost of Medicine	97.744.258.015,14	24.490.167.125	127.124.056.263,02	54.163.750.104,27	37.706.307.586,08	37.576.037.198,19
Total cost of Generik medicine	64%	25,2%	18,1%	16,3%	18,8%	26,7%
Total cost of Branded medicine	35,6%	74,8%	81,9%	83,7%	81,2%	73,3%
Total cost of Fornas	77,6%	76,0%	88,2%	88,4%	67,8%	68,3%
Total of cost Non-Fornas	22,4%	24,0%	11,8%	11,6%	32,2%	31,7%
Total cost of Non-Paten medicine	96,2%	92,7%	86,5%	83,8%	96,4%	96,4%
Total cost of Paten medicine	3,8%	7,3%	13,5%	16,2%	3,6%	3,6%

F. Cost of Patente Medicine by Theurapeutic Class

Theurapeutic class of medicines is classified according to ATC code, where classification system divides drugs into different groups according to the organ or system in which therapy is located by chemicsl characteristics act. Based on drug uses data at Harapan Kita Hospital, Dharmais Cancer Hospital and RSPON, the data can be grouped into 14 theurapeutic class groups as shown in table 6.

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Tabel 2
Drugs Data Sharing Based on ATC Code

ATC Code	Theurapeutic Class	Name of Medicine		
		Fornas	Non-Fornas	
A	Digestive Tract and Metabolisme	Insulin Glulisine 100 IU/mL	Kombinasi Kaps: Netupitant 300 Mg, Palonosetron 5 mg	
			Insulin Detemir	Sitagliptin Tab 100 mg
				Saxagliptin Tab 5 mg
				Linagliptin Tab
				Liraglutide 6 mg/ml
				Dapagliflozin Tab 10 mg
				Empagliflozin Tab 25 mg
B	Blood and Blood-forming Organs	Ticagrelor Tab 90 mg	Iloprost Inhalasi 10 mcg/mL	
			Dabigatran Etexilate Caps 110 mg	Apixaban Tab 2,5 mg
			Rivaroxaban Tab 10 mg	Edoxaban Tab Salut Selaput 30 mg
			Eltrombopag Olamine Tab 25 mg	Polyethylene Glicol
		Polyethylene Glicol		
C	Cardiovascular System	Ivabradine Tab 5 mg	Tolvaptan Tab	
			Sacubitril 24.3 mg + Valsartan 25.7 mg Tab	
G	Genitourinarius System and seks hormone		Mirabegron 25 mg	
			Tadalafil Tab 10 mg	
			Vardenafil Tab 10 mg	
J	Anti-infective systemic use for	Micafungin Inj 50 mg	Tigecycline Inj 50 mg	
			Telbivudin Tab 600 mg	Cefditoren Tab 200 mg
				Ertapenem Inj 1000 mg
				Anidulafungin Inj 100 mg
L	Antineoplastic immunomodulating agents and	Temozolamide Caps	Bevacizumab Inj 25 mg/mL	
			Cetuximab 5 mg/mL	Brentuximab Vedotin Serb Inj 50 mg
			Gefitinib	Pertuzumab Inj 30 mg/mL
			Erlotinib Tab 100 mg	Trastuzumab Emtansine Powd For Inf 160 mg
			Lapatinib Tab 250 mg	Prembolizumab 25 mg/mL Injeksi
			Nilotinib Caps 150 mg	Sunitinib Tab 12,5 mg
			Afatinib Tab 20 mg	Sorafenib Tab 200 mg
				Pazopanib Tab 200 mg
	Eribulin Mesylate Inj 0,44 mg/mL			
		Fulvestrant Tab 250 mg		
M	Musculoskeletal System		Botulinum Toxin Type A	
N	Nervous System		Zonisamide Tab 100 mg	
			Memantine Tab 10 mg	
R	Respiratory System	Tiotropium Bromide Inh 18 mcg		
V	Variety	Sugammadex Inj 100 mg/mL		

Table 7 shows data on cost of patent medicine in 2019 and 2020 based on division of therapeutic classes, the largest of therapeutic class is antineoplastic and immunomodulating agents used for cancer treatment still in high prices. While the lowest medicine costs are in genitourinary system therapy class and sex hormones, this is also influenced because there are medicines whose patents have expired and experienced a significant decrease in prices.

Tabel 3
Paten Drugs List Based On Therapeutic Class

Kode ATC Code	2019			2020		
	RSPJN Harapan Kita	RS Cancer "Dharmais"	RSPON	RSPJN Harapan Kita	RS Cancer "Dharmais"	RSPON
A	596.326.373	110.205.800	289.054.468	244.432.694	148.685.450	289.054.468
B	1.534.391.588	446.659.052	350.671.133	550.806.807	329.714.688	186.286.937
C	1.322.545.595		8.736.611	677.885.701		8.736.611
G		5.914.671	1.237.500		2.157.227	650.000
J	255.224.316	573.224.927	169.011.658	181.697.353	254.827.687	169.011.658
L		15.782.625.029			7.941.582.846	
M			226.259.034			226.259.034
N			121.800.642			121.800.642
R		178.504.128	20.181.700	127.274.940	76.236.138	184.565.896
V		21.760.000	154.000.000			154.000.000

G. Medicine Prices In Patent Period Listed In National Formulary and E-Catalog

Compared with the regular prices of these medicines, it will be seen that the average decrease in drug prices in e-catalog compared to regular prices is 55.13% with the largest decrease in nilotinib at 89.87% as listed in table 8. This can occur because of the price negotiation process carried out by the National catalog team based on input from National committee for national formulary to reduce drug prices to close to or equal to prices of drugs listed in national formulary accompanied by risk sharing calculations. Based on drug price data per therapeutic class, it can be seen an average decrease of more than 50% for therapeutic classes A (digestive tract and metabolism), B (Blood and blood forming organs) and L (antineoplastic and immunomodulating agents). Therapeutic classes A and B are widely used for catastrophic diseases where the number of patients with an average price reducing of 60%. Such a decline could occur because apart from the negotiation process, the

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price reduction policy was also influenced by the risk sharing scheme in the e-catalog.

Tabel 8
Drugs Decrease Presentage Persentase
Based On Fornas

ATC Code	The Name of Medicine	2019			2020			% Median per Therapeutic Class	
		e-Catalog	Regular	% Decrease	e-catalog	Regular	% Decrease		
A	Insulin Glulisine 100 IU/mL	87.000	177.639	51,02	54,37	87.000	177.639	51,02	54,37
	Insulin Detemir	83.950	198.551	57,72		83.950	198.551	57,72	
B	Ticagrelor	8.323	23.054	63,90	61,45	8.323	23.054	63,90	61,45
	Dabigatran Etexilat caps 110 mg	14.800	27.211	45,61		14.800	27.211	45,61	
	Rivaroksaban tab 10 mg	25.717	44.450	42,14		25.717	44.450	42,14	
	Eltrombopag Olamine Tab 25 mg	113.235	289.882	60,94		113.235	289.882	60,94	
	Polyethylene glicol	123.495	2.312.239	94,66		123.495	2.312.239	94,66	
C	Ivabradine tab 5 mg	6.600	9.619	31,39	31,39	6.600	9.619	31,39	31,39
J	Micafungin inj 50 mg	352.671	640.884	44,97	46,43	352.671	640.884	44,97	46,43
	Telbivudin	28.300	54.306	47,89		28.300	54.306	47,89	
L	Temozolamide caps	1.170.000	1.518.759	22,96	63,82	1.170.000	1.518.759	22,96	63,82
	Cetuximab 5 mg/mL	2.450.000	4.042.500	39,4		2.450.000	4.042.500	39,4	
	Gefitinib	280.000	1.224.931	77,14		280.000	1.224.931	77,14	
	Erlotinib tab 100 mg	277.500	854.815	67,54		277.500	854.815	67,54	
	Lapatinib tab 250 mg	55.000	105.412	47,82		55.000	105.412	47,82	
	Nilotinib caps 150 mg	35.000	345.644	89,87		35.000	345.644	89,87	
	Afatinib tab 20 mg	280.000	1.248.568	77,57		280.000	1.248.568	77,57	
R	Tiotropium Bromide INH 18 mcg	167.000	302.832	44,85	44,85	167.000	302.832	44,85	44,85
V	Sugammadex inj 100 mg/mL	1.100.000	1.837.000	40,12	40,12	1.100.000	1.837.000	40,12	40,12
	Median Value			55,13				55,13	

Compared the decrease between patented medicines listed in national formulary and patent medicine not listed in national formulary as shown in table 9, it can be seen there is a significant difference. For drugs are still in the patent period but not listed in national formulary, the range of variations in price reductions is very diverse, these are even drugs that not experience a decrease. The decrease in drugs according to national policy resulted in a greater decrease than the decrease in non formal drugs which only gave an average decrease of 11.29% in 2019 and 14.46% in 2020. This shows the impact of implementasion of national formulary on drug cost control in the hospital.

Tabel 9
Decrease In Non-Fornas Drug Prices Based On E-Catalog
Compared To Regular Drug Prices During The Patent Period

Kode ATC Code	Name of Medicine	2019			2020		
		Hospital Purchase Price	Regular	% Decrease	Hospital Purchase Price	Regular	% Decrease

A	Kombinasi Kaps: Netupitant 300 mg, Palonosetron 5 mg	825.000	1.000.000	25,0	825.000	1.000.000	25
	Sitagliptin Tab 100 mg	14.381	17.036	15,58	14.381	17.036	15,58
	Saxagliptin Tab 5 mg	13.750	17.600	21,88	13.750	17.600	21,88
	Linagliptin Tab	16.406	19.272	14,87	16.406	19.272	14,87
	Liraglutide 6 mg/mL	922.900	922.900	0	876.755	922.900	5
	Dapagliflozin Tab 10 mg	15.761	21.648	27,19	15.761	21.648	27,19
	Empagliflozin Tab 25 mg	17.400	22.168	21,51	20.838	22.168	6
B	Iloprost Inhalasi 10 mcg/mL	300.000	384.000	21,88	300.000	384.000	21,88
	Apixaban Tab 2,5 mg	31.100	24.797	-25,42	31.100	24.797	-25,42
	Edoxaban Tab Salut Selaput 30 mg	26.233	26.518	1,07	26.233	26.518	1,07
C	Tolvaptan Tab	153.700	161.789	5	153.700	161.789	5
	Sacubitril 24.3 mg + Valsartan 25.7 mg Tab	13.750	17.078	19,48	13.750	17.078	19,48
G	Mirabegron 25 mg	17.713	16.035	-10,47	17.713	16.035	-10,47
	Tadalafil Tab 10 mg	138.650	138.650	0	102.911	138.650	25,78
	Vardenafil Tab 10 mg	166.042	166.042	0	81.608	166.042	50,85
J	Tigecycline Inj 50 mg	786.210	849.956	7,5	786.210	849.956	7,5
	Cefditoren Tab 200 mg	25.740	26.440	2,65	25.740	26.440	2,65
	Ertapenem Inj 1000 mg	617.100	617.100	0	555.390	617.100	10
	Anidulafungin Inj 100 mg	788.521	1.029.224	23,39	788.521	1.029.224	23,39
L	Bevacizumab Inj 25 mg/mL	3.106.391	5.812.431	46,56	3.106.391	5.812.431	46,56
	Brentuximab Vedotin Serb Inj 50 mg	26.428.75 9	47.100.00 0	43,89	26.428.75 9	47.100.00 0	43,89
	Pertuzumab Inj 30 mg/mL	30.641.14 6	39.536.96 2	22,5	30.641.14 6	39.536.96 2	22,5

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	Trastuzumab	43.084.62	43.084.62	0	26.389.24	43.084.62	38,75
	Emtansine Powd For Inf 160 mg	3	3		3	3	
	Prembolizumab 25 mg/mL Injeksi	51.528.40	58.889.60	12,5	51.528.40	58.889.60	12,5
		0	0		0	0	
	Sunitinib Tab 12,5 mg	477.504	511.611	6,67	477.504	511.611	6,67
	Sorafenib Tab 200 mg	406.633	520.483	21,87	406.633	520.483	21,87
	Pazopanib Tab 200 mg	144.118	184.471	21,88	144.118	184.471	21,88
	Eribulin Mesylate Inj 0,44 mg/mL	2.970.000	3.300.000	10	2.970.000	3.300.000	10
	Fulvestrant Tab 250 mg	5.870.480	7.514.214	21,88	5.870.480	7.514.214	21,88
M	Botulinum Toxin Type A	3.350.001	3.316.832	-1	3.350.001	3.316.832	-1
N	Zonisamide Tab 100 mg	11.842	13.035	9,15	10.499	13.035	19,46
	Memantine Tab 10 mg	31.429	25.000	-25,71	37.389	25.000	-49,56
	Median			11,29			14,46

H. Drug Cost Savings During Patent Period

Table 10 shows an increase in the decrease in drug costs in 2020 compared to drug costs in 2019 at the three hospitals. The smallest reduction in drug costs at Dharmais Cancer Hospital with assumption that the highest referral hospital serving cancer patients where the drugs used were new originator drugs that still had a long patent period so that the decrease in drug costs was smaller than Harapan Kita Hospital and RSPON which used the drugs are generally drugs have a longer NIE and shorter patent period that the price reduction tends to be greater. The decline prices can also be influenced by the number of cases where there are fewer cases of cancer compared to catastrophic cases which are mostly handled at RSPJN Harapan Kita and RSPON.

Tabel 10
Proportion of Reduction in Drug Cost in the 2019
dan 2020 Patent Period

Year	RSPJN Harapan Kita			RS Cancer Dharmais			RSPON		
	Total Cost (e-Catalog)	Total Cost (Regular)	% Decrease	Total Cost (e-Catalog)	Total Cost (Regular)	% Decrease	Total Cost (e-Catalog)	Total Cost (Regular)	% Decrease
2019	1.497.174.520	3.236.454.646	46,26	8.860.431.085	2.6053.727.733	34	717.883.280	1.335.287.522	53,76
2020	788.105.762	1.637.909.419	48,12	5.366.464.202	14.103.537.832	38,05	464.011.480	816.923.730	56,80

I. The effect of Medicine Value Tax, NIE Issued Year and Type of Drug Therapy Class in Decreasing Drug Prices

In implementing health insurance program, the government controls the quality of drug services through the establishment of a drug list in national formulary, while the control of drug costs is carried out through setting drug prices through e-catalogs. This effort has succeeded in having significant impact on reducing drug prices when compared to regular prices, however, there are several factors that can effect the decline in drug priced such as the presence or absence of a drug's tax, the year of publication of the NIE, and the type of drug therapy class. Based in data drug use at Harapan Kita Hospital, Dharmais Cancer Hospital and RSPON, there are other factors that can affect it as listed in table 11.

Table 11 shows that in addition to the drug selection system at national formulary and the price negotiation process by the drug catalog team, the factor of the year of publication of NIE and theurapeutic class factor in this case is associated with the amount of drug uses as well as the balue of the Goods Import Tax (PIB). Tend to be able to provide a higher price reduction.

In the table, it can be seen that the longer year of NIE publication, the greater the number of use of the drug, the greater the decrease in the price of drug such as in the blood and blood-forming organ therapy class used for catastrophic diseases with a drug requirement of 107,600.5 units, the smallest unit and the length of the year NIE publication. An average of 10.6 years can reduce prices up to 61.4%.

Comparison between cardiovascular system therapy class with the smallest need fot 43,570 drug units and the theurapeutic class antineoplastic and immunomodulating agents where the need is smaller, 36,479 units are the smallest. But for thr length of year NIE in the cardiovascular system therapy class the average is 4 years, while the therapy antineoplastic snd immunomodulating agents have an average of 10.3 years, the price reduction is greater in therapeutic class antineiplastic and immunomodulating agents, which is around 60.3%.

Table 11
The Factor That Can Affect The Decrease Of Drugs Prices

Theraputic class	Median Registration permit length (Year)	Goods Import Tax	Median Amount of Drug Use	Median Decreation drug price (%)
A Digestive Tract and Metabolisme	10	Ada	4.911	54,4
B Blood and Blood-forming Organs	10,6	Ada	107.600,5	61,4
C Cardiovascular System	4	Ada	43.570	31,4
J Anti-infective for systemic use	4,5	Ada	10.096	46,4
L Antineoplastic and	10,3	Ada	36.479	60,3

Analysis of Prices of Patented Medicines Listed In The National Formulary and E-Catalogue In Pusat Jantung Nasional (Rspjn) Harapan Kita Hospital, “Dharmais” Cancer Hospital, and Pusat Otak Nasional Hospital (RSPON), Jakarta Province

immunomodulating agents					
R	Respiratory System*)	15	Ada	9	44,9
V	Variety*)	3	Ada	140	40,1

Only consist of 1 medicine

Conclusion

- 1) Decrease in the price of drugs that are still in the patent period when they are listed in national formulary and e-catalog compared to regular prices of 55.13%
- 2) The decrease in drug's prices still in patent period but not listed in national formulary only decreased by 11.29%-14.46% from regular prices
- 3) Savings in drug costs during the patent period when they are listed in national formulary and e-catalog compared to cost of drugs in regular prices at RSPON, Harapan Kita Hospital and Dharmais Cancer Hospital with average decrease was 47.19% for Harapan Kita Hospital, 36.05% for Dharmais Cancer Hospital and 55.28% for RSPON.
- 4) Import Tax on goods and a longer NIE issuance year make drug prices tend to fall even higher. The largest price decline, up to 61.4%, occurred in blood and blood forming organ therapy class used for catastrophic diseases with smallest drug requirement of 107,600.5 units and the average length of year of NIE publication was 10.6 years.

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