

Supplement

Study of Budget Efficiency Related to Covid-19 Hospitalization Claim Policy in X Hospital Malang: A Case Study

Kajian Efisiensi Anggaran terhadap Kebijakan Klaim Rawat Inap Covid-19 di RS X Malang: Sebuah Studi Kasus

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ABSTRACT

Coronavirus Disease 2019 (Covid-19) infection spread rapidly to more than 114 countries. Covid-19 spreading has a tremendous effect socially and economically, Indonesia included. Indonesian Government was issuing regulations about Technical Claim Instructions for anticipation. This Technical Claim Instruction was regulated on Keputusan Menteri Kesehatan (KMK) No HK.01.07/Menkes/238/2020, then renewed on KMK No HK.01.07/Menkes/446/2020. The purpose of this research is to analyze budget efficiency related to the change of Covid-19 hospitalization claim regulation. The research was done retrospectively, using secondary data such as claims and patient's medical records. Research conducted in October 2020 on X Hospital. The research sample used was every Covid-19 patient from March to September 2020 totaling 146. The data were analyzed using chi-square with the result showing that there is no correlation between changes of technical claim regulation with budget efficiency.

Keyword: Budget efficiency, claim, comorbid, Covid-19

ABSTRAK

Infeksi Coronavirus Disease 2019 (Covid-19) menyebar dengan cepat ke lebih dari 114 negara. Penyebaran Covid-19 berdampak luas secara sosial dan ekonomi, termasuk di Indonesia. Antisipasi yang dilakukan Pemerintah Indonesia adalah mengeluarkan petunjuk teknis klaim yang dapat menjadi acuan bagi rumah sakit yang menyelenggarakan pelayanan bagi pasien Covid-19. Petunjuk teknis klaim diatur pada Keputusan Menteri Kesehatan (KMK) No HK.01.07/Menkes/238/2020, yang diperbaharui pada KMK No HK.01.07/Menkes/446/2020. Tujuan penelitian ini adalah untuk mengkaji efisiensi anggaran terhadap perubahan kebijakan klaim rawat inap pasien Covid-19. Penelitian dilakukan secara retrospektif dengan menggunakan data sekunder berupa data klaim dan rekam medis pasien. Penelitian dilakukan pada bulan Oktober tahun 2020 di Rumah Sakit X. Sampel penelitian yang digunakan adalah semua pasien rawat inap Covid-19 di bulan Maret sampai dengan September 2020 berjumlah 146 responden. Hasil analisis data dengan menggunakan uji statistik *chi-square* menunjukkan bahwa tidak ada hubungan perubahan kebijakan petunjuk teknis klaim pada efisiensi biaya anggaran terkait penanganan pasien rawat inap Covid-19.

Kata Kunci: Covid-19, efisiensi anggaran, klaim, komorbid

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INTRODUCTION

At the beginning of 2020, the world was shocked by an unknown severe infection. This started from a Chinese report to the World Health Organization (WHO) (1). Covid-19 first emerged in December 2019 in Wuhan China. The virus spreads rapidly and becomes a big problem for every country (2). WHO named the virus Novel Coronavirus (nCoV-19) eventually called Covid-19 (3). Since the emergence of Coronavirus disease (Covid-19) in December, the viral pandemic has been spreading from the Chinese province of Wuhan to the rest of the world. It has been created elaborate for individuals, households, health systems, and every aspect of life, socially or economically (4).

WHO declared Covid-19 as a global pandemic on 11 March 2020. It was because the virus has been rapidly spreading and many countries far from the virus epicenter have announced Covid cases in their respective countries (5). WHO recorded that 114 countries have been impacted, with a total case of 118,000 people and 4,291 deaths (6). Covid-19 has become a global problem with an increasing number of cases every day. Covid-19 strikes everyone regardless of age, or sex and has already been categorized as a global pandemic (7). In Indonesia, the first COVID-19 case was announced on 2nd March 2020. This disease spread rapidly, so the President enacted a Public Health emergency related to the Covid-19 pandemic in Indonesia on 31 March 2020. On 13 April, through Presidential Decree number 12 of 2020, the President of Indonesia declared the Covid-19 pandemic as a national disaster. Based on the Republic of Indonesia Ministry of Health's report on August 30, 2020, there were 172,053 confirmed cases with a mortality rate of 7,343 or a Case Fatality Rate of 4.3% (8).

The Government bears the cost of Covid-19 treatment as a means to reduce the impact of Covid-19 on many society sectors (9). This financing is regulated in the Minister of Health Decree number 238/2020. This regulation takes place from the beginning of the pandemic until 15 August 2021. Later on, the government conducts a review of these financing claims, by issuing the Minister of Health Decree number 446 of 2020 (10). There was an important change in that decree, that is formulary changes in inpatient claim calculation.

On Health Minister Decree no 238 year 2020, inpatient claim is calculated with the formula $a + ((n.b) - a) \cdot c$, whereas (a) is INA-CBGs tariff, (n) is Length of Stay (LOS). (b) is an extra cost per day that the amount has been decided by the government, whereas this cost differs between patients who have comorbidities and those who don't. Patients who have comorbidities have a higher cost per day than those who don't. Point (c) in that formula is for PPE (Personal Protective Equipment) and medication from governmental aid (11). Many doctors replace their PPE as much as once in two days. This behavior makes PPE an important factor in Hospital costs to overcome the pandemic (12). This formula applies to inpatients who are being treated from 28 January 2020 until 14 August 2020. Whereas since 15 August 2020, applies the new formula, that is $(a + ((n.b) - a) \cdot c) \cdot d$. The new variable (d) is for the supporting examination that is not being done by the treating hospital. Based on KMK 446, the examination that need to be done, comprise of lactic acid (152.000 rupiahs),

Procalcitonin (400.000 rupiahs), CRP (136.000 rupiahs), Microorganism culture with resistance test (326.000 rupiahs), D Dimer (192.000 rupiahs), Prothrombin Time (172.000 rupiahs), Activated Partial Prothrombin Time (172.000 rupiahs), Bleeding time (19.000 rupiahs), Anti HIV (151.000 rupiahs), Blood Gas Analysis (86.000 rupiahs), Albumin (25.000 rupiahs), and Chest X-ray (115.000 rupiahs). Supporting examination is an important factor in medical cost (Zhao jie, 2021), we presume that this regulatory change will improve the Covid-19 claim efficiency in X Hospital.

METHOD

The research was conducted retrospectively using secondary information from claim data and patient's medical records. The Research was conducted in October 2020 at X Hospital. The research sample used was every COVID-19 patient from March to September 2020 totaling 146. Sampling was done by total sampling. The inclusion criteria in this study were inpatients with COVID-19 at X Hospital, while the exclusion criteria in the study were inpatients with COVID-19 with LOS > 14 days. An independent variable is a variable that can affect another variable (13). The independent variable in this research is formulary changes in inpatient claim calculation have been regulated by the Ministry of Health regulations. The dependent variable is a variable determined by another variable (13). The dependent variable in this research is the government budget related to Covid-19 reimbursement. The data analysis technique used was editing, coding, and tabulating processes. The statistical test used is the Chi-square using the SPSS application. For data analysis, we use a chi-square test with the significance values of <0.05.

RESULTS

Respondent Characteristic

Respondent characteristic describes Covid-19 inpatients at X Hospital based on their comorbidities. The total number of respondents was 146, divided into four respective categories. Based on before and after regulatory changes, and also whether the respondent have comorbidities or not.

Table 1. Respondent characteristics

No		n(%)
1	Comorbid	
	Total with comorbid :	65 (45%)
	Before Regulatory Changes	44 (68%)
	After Regulatory Changes	21 (32%)
	Total Without Comorbid :	81 (55%)
	Before Regulatory Changes	59 (73%)
	After Regulatory Changes	22 (27%)

Claim Classification

We classified the claim based on the range as follows: low (less than 50 million rupiah, medium (50-100 million rupiah), and high (more than 100 million rupiah), for data simplification.

Table 2. Claim classification

No	Claim classification	n (%)
1	With comorbid	
	Before Regulatory changes	27
	low	16
	medium	5
	high	
	After Regulatory changes	5
	low	11
	medium	5
	high	
2	Without comorbid	29
	Before Regulatory Changes	29
	low	1
	medium	
	high	
	After Regulatory changes	6
	low	16
	medium	0
	high	

Result of Data Analysis

We are using the chi Square test to compare two data sets. First, we compare the claim data between patients with comorbidities, before and after regulatory changes. Secondly, we do the same thing for patients without comorbidities. Our Analysis using Chi-Square is presented in Table 3.

Table 3. Data analysis using Chi-Square

No	Claim Classification	p (Value)
1	Claim Regulatory changes with comorbid	0.616
2	Claim Regulatory changes without comorbid	0.339

The results of data analysis using the chi-square statistical test found a p-value of 0.616 for patients with comorbidities. For patients without comorbidities, we found a p-value of 0.339. Both results show that there is no relationship between regulation changes to Government budget efficiency related to Covid-19 patient claims for both categories.

DISCUSSIONS

This study compares the claim of Covid-19 patients with or without comorbidities who were treated before August 15, 2020, according to the KMK 238/2020, and Covid-19 patients with or without comorbidities who were treated from August 15, 2020, according to the KMK 446/2020. The data consisted of 146 respondents who were treated from March 2020 to September 2020. The regulatory changes in the claim formula are expected to result in claim efficiency which can save the budget. Our research shows that there is no significant difference between the cost of claims on KMK 238 with the formula $[a + ((n.b) - a) - c]$ and the cost of claims on KMK 446 with the formula $[a + ((n.b) - a) - c - d]$. In KMK 446 there is a (d) variable which

is a reduction from supporting examinations that are not carried out. If the hospital performs all the supporting examinations listed in point (d), then the total amount of patient claims in the KMK 238 formula will be the same as the KMK 446 formula (10). However, if the hospital does not carry out these supporting examinations, the maximum amount of claim reduction will be 1,946,000 rupiahs. This reduction from the (d) variable is not significant compared to the total claim. Although there are different formulas from the regulation changes, there exists the same multiplier factor in both formulas, that is the n factor. The n factor is the number of hospitalization days.

Length of Stay (LOS) is one of the quality indicators for medical service that is given by Hospitals to patients. LOS shows how many days a patient is hospitalized for one period of care. LOS directly affects medical costs (14). However, estimating LOS in hospitals requires observation of patient characteristics such as comorbidities because of its impact on disease severity and is likely to influence LOS (15). LOS reduction also positively affects cost savings (1). Hospitalized Covid-19 patients have a variety of LOS. The LOS is likely to rely on the level of care required, as well as the geographic setting due to various Covid-19 care recommendations (Rees et al, 2020). On average, Covid-19 patients spend 15 days on a regular ward, while averaging 22 days in Intensive Care Unit (ICU) (16).

Our research found no significant changes related to budget efficiency for both patient groups. We expect other factors like clinical pathways will be more prominent than laboratory tests to reduce LOS and cost. The clinical pathway is expected to be developed in Covid-19 .patients to reduce LOS so that cost efficiency can be carried out. In previous studies, it was proven that clinical pathways reduce mortality and costs. Clinical pathways also can be used to control costs in healthcare (17). In addition to preparing the Clinical Pathway, case management can also be carried out by specifically classifying patients. As an example, the classification of patients that have been carried out in Kenya are 1) Asymptomatic patients with Covid-19 on home-based care, 2) Asymptomatic patients with Covid-19 on institutional care (admitted to hospitals or isolation centers), 3) Symptomatic patients with mild-to-moderate Covid-19 on home-based care, 4) Symptomatic patients with mild-to-moderate Covid-19 on institutional care (admitted to hospitals or isolation centers), 5) Patients with Covid-19 with severe symptoms admitted in hospitals, 6) Patients with Covid-19 with critical disease admitted to ICUs. With specific patient classification, hospitals only accept patients that really need hospitalization, that is patients with category 4 to 6. This classification can decrease the magnitude of Covid-19 treatment budget (18). Clinical pathways are important to enforce the best and most applicable diagnostic strategy to establish the control of Covid-19 (19).

The limitation of this research lies in the absence of additional information related to the type of comorbidities. Another limitation is that coronavirus is a relatively new disease, so more time is needed to study the disease and its cost factor. Because this disease is an acute crisis, not many clinical pathways have been made (20). In subsequent research, we hope other researchers can find other components that greatly affect Covid-19 treatment costs and claim.

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