Analysis of Ideal Cost Service Claims
for Hospitalized Covid-19 Patient

Sri Umaryani[1], E. M. Sutrisna[2(✉)], Imronuddin Imronuddin[1],
and Edy Purwo Saputro[1]

[1] Faculty Economics and Business, Universitas Muhammadiyah Surakarta, Surakarta, Indonesia
[2] Faculty of Medicine, Universitas Muhammadiyah Surakarta, Surakarta, Indonesia
es233@ums.ac.id

Abstract. This study analyzes the ideal cost service claims for reimbursement of hospitalized COVID-19. The variable used in this study is the dependent variable which is divided into claim rates consisting of cost-per-day rates and INA-CBG's rates. The independent variables were divided into accurate rates and length of stay. The sample was selected by non-probability sampling with purposive sampling method by limiting the inclusion criteria: COVID-19 patients who received treatment from January 28, 2020, to July 31, 2022, with complete medical record data at Muhammadiyah Selogiri Hospital. The data was obtained from 90 medical record files and patient financial administration, which were used as research samples. The collected data was carried out by inferential statistical analysis to identify the difference between accurate rates and claims based on MoH regulations which were divided into three groups and supported by a qualitative study using the in-depth interview method. The results showed a significant difference ($p = 0.00 < 0.05$) between the real and claims rate for reimbursement of costs for services for COVID-19 patients in all groups. Interviews conducted by researchers with representatives of doctors in charge of services and hospital management gave the opinion that group 2 regulations are ideal for handling COVID-19 patient care. It is hoped that the government will comply with group 2 rules with the proposed tariffs ranging from Rp. 18,174,633 to Rp. 38,335,538 per patient; hence the treatment of COVID-19 patients can be carried out optimally. The applicable regulation is the group 3 rule with an average tariff of IDR 18,174,633 per patient, which could be better. Hospitals must be able to arrange appropriate strategies through periodic monitoring and evaluation of compliance with the implementation of clinical pathways, consequently improving the quality and quality of services and hospital operations effectively and efficiently.

Keywords: claim rates · actual rates · COVID-19

1 Introduction

Current research on financing care for COVID-19 patients and hospital finances during the COVID-19 pandemic has been identified as an exciting research topic (Barasa et al., 2021; Mallow et al., 2020). Coronavirus Disease 2019 pandemic is a moderate challenge

that we will face in the final two years The management of maintenance service health in handling COVID-19 patients is known to be urgent, particularly in terms of financing (Mishra et al., 2021). COVID-19 is a disease that has a new impact on the mechanism of treating patients, including clinical pathways that affect hospital financing management, so hospitals can do operational and running service health optimally without experiencing a loss (Cinaroglu & Baser, 2018; Jiménez-Rodríguez et al., 2020; Setyarini et al., 2022).

The COVID-19 pandemic in Indonesia has published 6 (six) Decisions of the Minister of Health (KMK) concerning Replacement Technical Instructions Cost Service Patients with Corona Virus Disease -19, namely KMK No. HK.01.07/MENKES/238/2020; KMK No. HK.01.07/MENKES/446/2020; KMK No. HK.01.07/MENKES/4344/2021; KMK The principle of efficient and effective cost service for COVID-19 patients is known to cause a regulation change. The focus on efficient and effective cost service for COVID-19 patients is known to cause a regulation change.

The researcher divided the sixth regulation into three groups based on system replacement cost service for COVID-19 patients at the hospital. Replacement system cost service incoming COVID-19 patients in group 1 using cost per day system, group 2 using INA-CBG's package system, and group 3 using INA-CBG's package system with different magnitude.

Problems arise due to the change in regulation regarding replacement cost care for COVID-19 patients. Based on observations of the above-mentioned sixth regulations, researchers discovered that mechanism replacement cost care for COVID-19 patients at hospitals is decreasing. The applicable law at the current time is regulation group 3, which has a smaller nominal of COVID-19 replacement cost care compared to the previous fifth regulation. It is causing the hospital to must perform several adjustment services, including clinical pathway, so that the actual rate does not exceed the claim rates (Bai & Zare, 2020).

Several previous studies, with mixed results, supported this study. Ambarwati (2021) mentions the increased COVID-19 claims followed by late payments. COVID-19 claims they imply that the hospital's burden of caring for COVID-19 patients is growing, according to research by Cleary et al. (2021) known if COVID-19 patients with severe and critical needs, cost more for care, including existing care in the ICU. According to Miethke-Morais et al. (2021), the highest care cost for COVID-19 patients is in patients with comorbid conditions, which correlates with high prices.

According to these findings, the high cost of treating COVID-19 patients is directly proportional to the severity of the disease. Despite 2022 the number of COVID-19 patients generally showing a decrease, hospitals will continue to provide services and care to COVID-19 patients seriously, even though they have to incur high costs. (Chua et al., 2021; Hu et al., 2021; Moradian et al., 2020). The hospital will make maximum efforts to treat COVID-19 patients to improve the quality of service and patient satisfaction. Regardless it increases the service costs that the hospital management must incur. (Sukino et al., 2022). On the other hand, the high service costs incurred by hospitals to treat COVID-19 patients are not compensated with a sufficient amount of claims from the government.

The research aims to compare the actual rates of the hospital with service cost reimbursement claims based on three groups of different regulations in genuine rate

replacement cost care for COVID-19 patients. This research also aims to analyze the ideal KMK for the government as the bearer of costs, for hospitals as service providers, and patients as users of hospital care services.

The result of this study is expected to become a consideration policy for a hospital in arranging finance management for handling COVID-19 patients at hospitals following the ideal regulations issued by the Ministry of Health of the Republic of Indonesia. The study is also expected to become a reference for hospital management strategies in applicable finance to patient needs and providing effective and efficient service.

2   Research Method

A retrospective design with a cross-sectional study type is used in this study. Quantitative data supported by qualitative data is one of the approaches used in this study. The data for this study came from a real-time service of COVID-19 patients at the hospital. It was based on the finance file and claimed details of patient cost, rates per day according to the applicable KMK, and the Length of Stay (LOS), files claim patient with COVID-19 treatment and medical record of the patient at Muhammadiyah Selogiri Hospital. Dependent variables in the study include cost per day INA-CBG rates and independent variables classified as real rate and LOS. The study's samples were selected using non-probability sampling with the purposive sampling method. The inclusion criteria are inpatient care of COVID-19 patients from January 28, 2020, to July 31, 2022, and patients with complete medical records.

This study analyzed data descriptively and inferentially using the Mann-Whitney test to compare the difference in real rate and claims on the three KMK. To support the quantitative data, researchers analyze qualitative data. In-depth interviews were conducted at Muhammadiyah Selogiri Hospital using ideal COVID-19 claims from KMK in Indonesia.

3   Results and Discussion

3.1   Difference Between Real and Claim Rates

Claim rates and actual rates of COVID-19 patients in this study were divided into three groups based on a Decree of the Minister of Health of the Republic of Indonesia, namely: Regulation Group 1 with scheme cost per day through KMK No. 238 of 2020, KMK No. 446 of 2020, KMK No. 4344 of 2021, and KMK No. 4718 of 2021; and Regulation Group 2 with scheme cost per day through KMK No. 446 of 2020, KMK No. 43 Regulation group 2 with tariff scheme in INA-CBG through KMK No. 5673 in 2021, and Regulation group 3 with customized package system of INA-CBG via KMK No. 1112 in 2022. Following established regulations, researchers also classify the number of days spent caring for patients or the length of stay (LOS) in each group.

We will statistically analyze the data to determine accurate claim rates. COVID-19 claims on inpatient care at Muhammadiyah Selogiri Hospital, for which we then conducted an analysis related to the ideal COVID-19 claim according to the government, hospital, and patients.

Based on the comparison of claims, actual rates, and LOS in Table 1 above, it is known that group 1 has a significant nominal amount rate claim, real amount rate, average rate claim, and average real rate. The difference is more important than in groups 2 and 3. This result is in line with the 304-day LOS in 30 patients from Group 1, 10.13 days longer per patient than in groups 2 and 3. Meanwhile, the nominal claim given by the government through mechanism rate INA-package CBG for group 3 is greater than that of group 2, with a nominal value of IDR 342,088,246. The difference by group 3 with a nominal value of IDR 116.765,669 is relatively less significant compared to the negligible difference by group 2 with IDR 807,979,254. Following the statistical analysis of test differences, the previous researchers will conduct a normality test to assess the suitability of the various tests. Based on the normality test, all groups have a significance score of 0.000 (0.05), so the Mann-Whitney test will be used to analyze the difference in real rate and COVID-19 claims at Muhammadiyah Selogiri Hospital in group 1.

Table 2 discovered that the significance score for the difference real rate test and claim rate at Muhammadiyah Selogiri Hospital in group 1 with the Mann-Whitney test

Table 1. Comparison Claims, Real Rates, and LOS between Groups 1, 2 and 3

No	Group 1			Group 2			Group 3		
	Claim	Real Rates	LOS	Claim	Real Rates	LOS	Claim	Real Rates	LOS
	IDR96.356.000	IDR25.559.226	13	IDR38.123.800	IDR16.692.149	7	IDR16.293.000	IDR7.069.469	2
	IDR96.356.000	IDR26.673.737	13	IDR31.769.800	IDR24.897.924	5	IDR21.034.000	IDR8.597.474	6
	IDR96.356.000	IDR24.492.441	13	IDR38.123.800	IDR14.631.215	8	IDR21.034.000	IDR14.872.515	7
	IDR96.356.000	IDR25.057.932	13	IDR38.123.800	IDR8.611.833	5	IDR21.034.000	IDR11.199.525	7
	IDR96.356.000	IDR24.968.320	13	IDR38.123.800	IDR7.663.120	2	IDR21.034.000	IDR10.341.545	7
	IDR81.356.000	IDR40.030.372	11	IDR38.123.800	IDR10.542.399	4	IDR21.034.000	IDR13.345.736	7
	IDR88.856.000	IDR27.703.434	12	IDR38.123.800	IDR13.565.736	6	IDR21.034.000	IDR13.369.582	6
	IDR84.356.000	IDR24.394.987	9	IDR31.769.800	IDR8.326.214	5	IDR16.293.000	IDR13.635.544	8
	IDR93.856.000	IDR38.827.725	10	IDR38.123.800	IDR9.810.147	6	IDR21.034.000	IDR11.410.831	7
	IDR96.356.000	IDR59.664.859	13	IDR38.123.800	IDR14.439.476	6	IDR21.034.000	IDR12.419.196	4
	IDR73.856.000	IDR29.206.745	10	IDR38.123.800	IDR12.807.135	6	IDR16.293.000	IDR13.553.594	6
	IDR73.856.000	IDR30.516.747	10	IDR38.123.800	IDR7.369.440	2	IDR21.034.000	IDR8.721.547	2
	IDR93.856.000	IDR27.583.866	10	IDR45.748.500	IDR21.714.142	8	IDR14.308.000	IDR9.951.923	6
	IDR81.356.000	IDR32.105.757	11	IDR38.123.800	IDR5.746.088	1	IDR21.034.000	IDR29.752.042	7
	IDR58.856.000	IDR85.513.163	8	IDR38.123.800	IDR8.830.512	2	IDR16.293.000	IDR31.613.937	14
	IDR74.856.000	IDR39.391.057	8	IDR38.123.800	IDR12.445.175	7	IDR21.034.000	IDR17.109.112	5
	IDR74.856.000	IDR50.125.784	8	IDR38.123.800	IDR4.837.203	3	IDR21.034.000	IDR11.385.875	7
	IDR66.356.000	IDR31.817.870	9	IDR31.769.800	IDR4.755.147	4	IDR21.034.000	IDR19.177.375	10
	IDR74.856.000	IDR26.025.675	8	IDR38.123.800	IDR4.829.061	2	IDR16.293.000	IDR17.696.726	5
	IDR84.356.000	IDR24.712.661	9	IDR38.123.800	IDR7.865.299	1	IDR21.034.000	IDR25.447.483	8
	IDR58.856.000	IDR32.834.609	8	IDR45.748.500	IDR8.601.836	2	IDR16.293.000	IDR13.553.730	9
	IDR88.856.000	IDR24.199.573	12	IDR38.123.800	IDR22.061.694	10	IDR14.308.000	IDR8.437.680	6
	IDR74.856.000	IDR31.990.751	8	IDR31.769.800	IDR7.852.046	2	IDR16.293.000	IDR12.256.169	6
	IDR58.856.000	IDR25.331.523	8	IDR38.123.800	IDR15.127.993	7	IDR16.293.000	IDR20.412.485	8
	IDR58.856.000	IDR28.671.715	8	IDR38.123.800	IDR22.401.495	9	IDR14.308.000	IDR15.826.121	7
	IDR84.356.000	IDR36.656.594	9	IDR31.769.800	IDR6.914.946	2	IDR16.293.000	IDR9.236.292	5
	IDR93.856.000	IDR32.992.074	10	IDR45.748.500	IDR11.853.473	7	IDR14.308.000	IDR10.723.866	2
	IDR84.356.000	IDR29.411.541	9	IDR45.748.500	IDR11.228.405	6	IDR16.293.000	IDR26.093.949	10
	IDR81.356.000	IDR26.035.973	11	IDR38.123.800	IDR7.069.469	2	IDR16.293.000	IDR5.000.484	4
	IDR73.856.000	IDR26.971.716	10	IDR45.748.500	IDR8.597.474	6	IDR14.308.000	IDR6.261.524	6

(continued)

Table 1. (*continued*)

No	Group 1			Group 2			Group 3		
	Claim	Real Rates	LOS	Claim	Real Rates	LOS	Claim	Real Rates	LOS
Amount	IDR 2.441.680.000	IDR 989.468.427	304 days	IDR 1.150.067.500	IDR 342.088.246	143 days	IDR 545.239.000	IDR 428.473.331	194 days
Average	IDR 81.389.333	IDR 32.982.281	10,13 days	IDR 38.335.583	IDR 11.402.942	4,77 Days	IDR 18.174.633	IDR 14.282.444	6,47 days

Table 2. Test for Differences in Real Rate and Claims Regulation Group 1 with Mann Whitney

Cost of Group 1	
Mann-Whitney U	23,000
Wilcoxon W	488.000
Z	-6,320
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Category Cost Group 1	

Table 3. Test of Differences in Real Rate and Claims Regulation Group 2 with Mann Whitney

Cost of Group 2	
Mann-Whitney U	.000
Wilcoxon W	465,000
Z	-6.783
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Category Cost Group 2	

Table 4. Test of Differences in Real Rate and Claims Regulation Group 3 with Mann Whitney

Cost of Group 3	
Mann-Whitney U	194,000
Wilcoxon W	659,000
Z	-3,822
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Category Cost Group 3	

is 0.000 (0.05). This result means that there is a different real rate with claim replacement service cost at Muhammadiyah Selogiri Hospital. COVID-19 patients in Group 1 were identified using KMK 238, KMK 446, KMK 4344, and KMK 4718.

This surplus for Muhammadiyah Selogiri Hospital is based on the existing difference in IDR. 1,452,211,573. A contrast is found based on that. Among the real rate and claim rate in regulation group 1, we can conclude that it incurred no losses for the

party hospital. However, as a funder, the party government declared experience benefits payment totaling IDR 1,452,211,573 and existence difference costs aroused.

Similar research shows the same result, which explains that claim rate with per day cost norm shows the difference by statistics with accurate rates on COVID-19 patients at Dr. Kariadi Hospital so that we can declare that the hospital earns a profit on the existence of a positive difference (Setyarini et al., 2022). Nonetheless, this matter already follows current regulation, which regulates the standard financing rate of COVID-19 patients before the system enactment payment rate through the INA-CBG package (Table 3).

According to KMK 5673, the significance score for the difference real rates-test and claims at Muhammadiyah Selogiri Hospital in group 2 with the Mann Whitney test is 0.000 (0.05), which means that there is a different real rate with service cost reimbursement claim of COVID-19 patients in group 2.

This surplus for Muhammadiyah Selogiri Hospital is based on the existing difference of IDR 807,979,254. Since there is a difference between the accurate rates and claims in regulation group 2, we can conclude that it incurred no losses for the party hospital. However, as a funder, the party government declared a deficit of IDR 807,979,254, along with different costs incurred.

It also demonstrates that hospital management can apply efficiency efforts without sacrificing the quality of patient service(Jati et al., 2020). This result is proven with no negative deficit in patients found from the entire sample. This finding is supported by research conducted by Dumaris (2016), which saw a difference between accurate and INA-CBG rates on services at Budhi Asih Hospital in Jakarta.

In a study by Gigih et al. (2020) by patients at RSUP, Dr. Sardjito Yogyakarta also found that the INA-package CBGs differ statistically from the natural rate, which is influenced by several factors such as diagnostics, LOS, and procedures for handling the patient (Table 4).

According to KMK 1112, the significance score for the difference accurate rates tests and claim rate at Muhammadiyah Selogiri Hospital in group 3 with the Mann Whitney test is 0.000 (0.05), which means that there is a different real rate with service cost reimbursement claim COVID-19 patients in group 3.

This matter is in line with an existing difference of IDR 116,765,669 found, a surplus for Muhammadiyah Selogiri Hospital. Among the actual rate and claim rate in regulation group 3, we can conclude that it incurred no losses for the party hospital. However, as a funder, the party government declared a deficit of IDR 116,765,669 and different costs incurred.

According to the findings of a study conducted (by Nisa & Raharjo, 2021), there is a difference (p = 0.000) between the accurate rates and INA-CBG in patients with coronary heart at Tugurejo Hospital. This finding is also supported by research data, which shows that the longer the length of hospital stay is proportionate to the increase in the natural rate, to the point that it exceeds the limit of the claim rate. Therefore, it is necessary to conduct adjustments on procedures and compliance with clinical pathways that the Hospital Medical Committee has determined to avoid deficits in which the actual rate is more significant than the claim rate (Damara et al., 2022).

3.2   Analysis of the Ideal COVID-19 Claim

According to the government, there are three compared groups by sequentially of the largest. It is discovered that group 1 with per day cost ranks first on the biggest claim nominal with IDR 2,441,680,000 or IDR 81,389,333 per patient, followed by group 2 with rate scheme INA-package CBG's with claim nominal Rp1.150.067.500 or Rp 38.335.583 per patient. Then group 3 also uses the rating scheme INA-package CBGs with a claim of little Rp 545.239.000 or Rp 18.174.633 per patient.

On the other hand, considering the difference between the claims rate and real rate in all three groups, it is known that the largest difference results in group 1 with a nominal value of IDR. 1,452,211,573, group 2 with a difference of IDR 807,979,254, and group 3 with the smallest difference of IDR. 116.765,669.

This result demonstrates that changes in regulation related to services and finance of COVID-19 patients at hospitals implicates the change rate of the claim given by the government, with claims nominal that tend to be decreasing. The nominal rate for change regulation is as follows: A known claim could occur due to several factors, such as COVID-19 cases that are still new and requires further research for its points to give impacts on governance and patient care; The presence of a mutation variant of the COVID-19 virus causes different symptoms, levels of pain, and levels of severity for each patient, resulting on the number of inpatient or Length of Stay (LOS), the use of Consumable Medical Materials and tools health, as well as actions given by the doctors; together with a significant drop of case amount or severity level in some regions and regions in Indonesia (Priyobodo & Sulistiadi, 2022; Amanda & Rahayu, 2020).

One method to analyze the ideal claim rate is to examine the large difference between the total nominal rates of the claim given by the government and the real rate as the real quantity issued by the hospital as organizer services for COVID-19 patients. The smaller the resulting difference, the more effective absorption is; thus, the government, as finance funder of COVID-19 patients, does not experience loss. According to the study, group 3 (KMK 1112 of 2022) has the smallest difference compared to the other two groups, totaling IDR. 116.765,669.

Nevertheless, 7 (seven) patients out of 30 (three twenty) patients became a sample in the study, or 23.3% of patients with nominal rates claim lower than actual rates in group 3. It is essential to note that the deficit in group 3 is more significant than in the other two groups. Group 1 (with one patient debt) and group 2 do not have an obligation. Consequently, according to the government, group 3 regulation is the best claim.

Based on an analysis of the ideal COVID-19 claim according to the hospital, the ideal one is group 2. Because there was no higher real rate value than the patient's claim rate in group 2, thus the hospital suffered no loss. This finding is supported by the fact that the nominal real rate in group 2 is significantly lower than in the other two groups, both in total and on average.

As a result, the claim description in group 2 is the most ideal for hospitals. Because the hospital does not experience a deficit, the hospital can optimize the funds obtained for operations, quality improvement, and hospital services. The situation is also an effort to maintain the quality and quantity of hospital services so that there is no decrease in public interest in using these services. It is in line with the research that stated that the

value of benefits a service user receives impacts interest in using these services (Rizal et al., 2022).

The ideal analysis was divided into three groups based on the length of the inpatient stay or LOS. Group 1 had a total LOS of 304 days with an average LOS of 10.13 days per patient, group 2 had a total LOS of 143 days with an average LOS of 4.77 days per patient, and group 3 had a total LOS of 194 days with an average LOS of 6.47 days per patient.

LOS is ideal if the period of inpatient care is short enough but also not too short, which means that the service care is customized to the patient's condition but still relevant to the clinical pathway (Jang et al., 2021). According to research, the higher the LOS, the higher the cost incurred by the hospital for care because the Committee Medical through Clinical Pathway plays a role in preventing too high LOS impact on financing that arises (Damara et al., 2022).

To complete the analysis, the researcher conducted an in-depth interview with the Director of Muhammadiyah Selogiri Hospital, who stated that the government's change in regulations to payment of inpatient service care claims still could be done by Muhammadiyah Selogiri Hospital a provider service COVID-19. However, the existence of KMK regarding payment claims for COVID-19 is decreasing. While we could provide service, it is not worth the sacrifice and risk to the health workers. It is also known that it might impact several aspects of care services given by health workers, particularly during this pandemic. As a result, a long-term strategy is required to provide excellent service that is responsive and reliable, resulting in patient satisfaction (Arnindiah & Safriantini, 2018; Barnett et al., 2020).

The stipulation of KMK No 1112 in April 2022, which is starting to be done on January 01, 2022, also inflicts a financial loss on Muhammadiyah Selogiri Hospital because the hospital has already spent money based on previous regulations, KMK No 5673 of 2021. It is in line with the findings in an interview with a representative of the Doctor in Charge of Service COVID-19, who believes that a change in government regulation impacts a slight, nominal claim reduction. So only a few doctors are involved in providing inspection support and therapy to patients, particularly those with severe cases or who require in-room care intensive COVID-19.

Muhammadiyah Selogiri Hospital stated that KMK 5673 2021 is the ideal standard of COVID-19 care service, which the claim is still sufficient in treating COVID-19 patients. So, even though the KMK is no longer enforced, the party hospital continues to carry out a strategy by adjusting procedures for treating patients with COVID-19 through changes in the Clinical pathway determined by the Director of Muhammadiyah Selogiri Hospital. They did that to prevent lousy perception for patients because the government is the guarantee of service and treatment of COVID-19, and it is known from previous studies that there is a terrible perception of well-related services provided with a warranty that comes from the government (Laturrakhmi et al., 2019).

4 Conclusion

Based on the study's findings, research, and discussion about analysis comparison real rate and service claim on COVID-19 patients at Muhammadiyah Selogiri Hospital, it is concluded that there is a significant difference in all the groups. According to the government, the ideal cost of service claims for COVID-19 patients in hospitals is KMK No.HK.01.07/MENKES/1112/2022. However, on the other hand, according to the hospital as the provider of service care, the ideal regulation is KMK No.HK.01.07/MENKES/5673/2021; yet, the perfect claim, according to the patient is KMK No.HK.01.07/MENKES/5673/2021.

Based on this research, KMK No.HK.01.07/MENKES/5673/2021 is the ideal regulation for cost service claims of treating COVID-19 patients. The government can determine the following code according to the mentioned KMK, which is around Rp 18.174.633 to Rp 38.335.538 per patient; thus, the treatment of COVID-19 patients can be optimal. Now, the KMK no. HL.01.07/MENKES/1112/2022 is the used regulation with an average rate of Rp 18.174.633 per patient, which is considered not ideal.

If the case of COVID-19 is no longer designated as a pandemic, the researcher urges the government that it is crucial to control claims for payment methods that are suitable for all parties. To prevent damaging hospitals, particularly in the case of retroactively applicable regulations, the government could evaluate every implemented policy, including one involving a survey and feedback collection regarding changes to the COVID-19 claim financing structure and rates. Hospitals can also implement methods for disseminating the most recent regulations and monitoring and evaluating adherence to clinical pathways to achieve maximum service quality. Due to the limited sample size of 30 patients at Muhammadiyah Selogiri Hospital, the study's findings only apply to the study location and cannot be generalized.

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