

## **INPATIENT SERVICE QUALITY SATISFACTION, A CASE STUDY: GREEN PRIVATE HOSPITEL, SEMARANG**

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**Abstract:** Indonesia places high importance on healthcare. From 2014, the Indonesian government has tried to create inclusive healthcare for everyone. With the introduction of BPJS, the Indonesian Ministry of Health also began to address climate issues. However, numerous challenges have arisen, one of which is service quality. Patients now desire modern hospitals that offer a wide range of facilities. Additionally, services for BPJS patients are often perceived as inferior compared to those for private patients. This study aims to investigate the quality of service from 5 dimensions: tangibility, reliability, responsiveness, assurance, and empathy at Green Private Hospital Santa Elizabeth in Semarang. Data from 225 patients using various payment methods were analyzed using ANOVA to examine differences in service quality based on payment method. The results showed no significant difference in service quality, but there was a difference in perception among non-BPJS patients regarding tangibility. Overall, the quality of service at Santa Elizabeth Hospital is good as it provides inclusive services, but certain dimensions need to be maintained and further improved.

**Keywords:** BPJS; Green Hospital; Service Quality; ANOVA

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**Abstrak:** Indonesia menempatkan perhatian besar pada sektor kesehatan. Sejak tahun 2014, pemerintah Indonesia berupaya menciptakan layanan kesehatan yang inklusif bagi semua orang. Dengan diperkenalkannya BPJS, Kementerian Kesehatan Indonesia juga mulai memperhatikan isu-isu lingkungan. Namun, banyak tantangan yang muncul, salah satunya adalah kualitas layanan. Pasien kini menginginkan rumah sakit modern yang menawarkan beragam fasilitas. Selain itu, layanan untuk pasien BPJS sering kali dianggap lebih rendah dibandingkan dengan pasien swasta. Penelitian ini bertujuan untuk menyelidiki kualitas layanan dari 5 dimensi: bukti fisik, reliabilitas, daya tanggap, jaminan, dan empati di Rumah Sakit Swasta Hijau Santa Elizabeth di Semarang. Data dari 225 pasien dengan berbagai metode pembayaran dianalisis menggunakan ANOVA untuk menguji perbedaan kualitas layanan berdasarkan metode pembayaran. Hasil penelitian menunjukkan tidak ada perbedaan signifikan dalam kualitas layanan, namun terdapat perbedaan persepsi di antara pasien non-BPJS terkait dimensi bukti fisik. Secara keseluruhan, kualitas layanan di Rumah Sakit Santa Elizabeth tergolong baik karena menyediakan layanan inklusif, namun beberapa dimensi perlu dipertahankan dan ditingkatkan lebih lanjut.

**Kata Kunci:** BPJS; Rumah Sakit Hijau; Kualitas Jasa, ANOVA

### **PENDAHULUAN**

Indonesia's national agenda places a high importance on healthcare, and the central and provincial governments are constantly developing and modernizing healthcare infrastructure. In 2022, there were 2,985 hospitals in Indonesia, comprising 1,058 governmental and 1,927 private facilities. Furthermore, more than 10,205 Public Health Community Centers (PUSKESMAS) are available, offering complete basic healthcare services and immunizations. (U.S. Commercial Service, 2023). Indonesian hospitals face new challenges in responding to climate change by formulating policies to optimize environmental management and empower the surrounding community. Global, Green, and Health importance becomes crucial as WHO estimates climate change in 2030-2050 will significantly impact increasing malnutrition, malaria, diarrhea, and heat stress (Ghebreyesus et al., 2022; Ngatindriatun, 2023). Indonesia's green hospital indicators, based on the Ministry of the Environment, are waste management criteria, building design criteria, and energy, food, pharmaceutical, transportation, and purchasing management criteria. Indonesia started a green

hospital program in 2010, as patients, as the central customers, are the main contributors to hospital use of energy, water, food, and chemical waste (Octavianus et al., 2021; Arief et al., 2023). Becoming part of a green hospital is essential for hospitals to protect the environment, support public health, and ensure sustainability in providing health services. Santa Elisabeth Hospital, located in Semarang, is one of the hospitals implementing green hospitals aiming to protect the health of building occupants, patients, and employees, protect the health of local communities, and efficiently use hospital resources. The challenge with green hospitals in Indonesia, of which Santa Elisabeth Hospital is that they have generally been around for a long time, giving rise to old-fashioned hospitals. These are different from the choices of the millennial generation, who prefer modern hospitals equipped with shops, cafes, and the Internet. However, to experience Santa Elisabeth Hospital's uniqueness, as part of a green hospital, having a large garden and enough trees impacts patients' ability to breathe well and get fresh air.

One of the challenges of implementing a green hospital policy at Santa Elisabeth Hospital is processing chemical and organic waste. Commitment to green hospitals is proven by providing maximum hospital services for outpatients and inpatients. Delivering service quality in hospitals encompasses several characteristics and dimensions, such as accessibility, patient safety, care, efficiency, operations, and patient satisfaction, which create an optimal care experience. This quality covers the technical aspects of medical care and involves interpersonal, administrative, and service environment aspects (Kwateng et al., 2017; Thakur et al., 2016). The study mainly discusses quality services towards customers' trust, customer satisfaction or service quality for outpatients in Indonesia hospitals (Ulum et al., 2024; Munandar, 2020; Suryadana, 2017; Setyaningsih, 2013).

In addition to the issue of patients perceiving the hospital as outdated, there is also the problem of patients perceiving differences in service quality based on their payment method. Since 2014, Indonesia has had a healthcare system called BPJS, which employs a cross-subsidy mechanism to ensure that patients with lower economic means can still receive medical treatment. However, many issues have arisen, one of which is that BPJS patients often feel neglected and receive unsatisfactory service from hospitals. As cited in Handayani et al. (2015) and Demak et al. (2019), there are significant differences in satisfaction levels based on the payment methods.

Discussion is more about evaluating and analyzing the results of implementing service quality quantitatively and less discussion about the green hospital's implementation program from inpatient perception of service quality delivered. This research aims (1) to understand and to investigate the dimensions or attributes of service quality empirically; (2) to explore and provide a better understanding more precise the importance of the various attributes of service quality delivered; and (3) to explore and evaluate whether and how the importance of variance attributes is different for different segments of customers. In this study, the quality of outcome, hospital care, and physician care are all modeled as components of the overall quality of care. Also, the focus here is on the hospital patients who stay and receive medical treatment at Green Hospital in Semarang City.

### **Green Hospital**

In both developed and developing countries, healthcare is the fastest-expanding service. The need for high-tech medical care is growing due to the rapid advancements in knowledge, technology, and globalization (Kumar Dey et al., 2006). Every country is working hard to meet the growing demand for healthcare facilities in terms of personnel and supplies (Feeney & Zairi, 1996). Green hospitals play a crucial role in promoting environmental sustainability, improving health outcomes, reducing costs, fostering community well-being, and enhancing resilience to climate change (Octavianus et al., 2021). A "green hospital" refers to a medical facility designed and operated with a focus on environmental sustainability and efficiency.

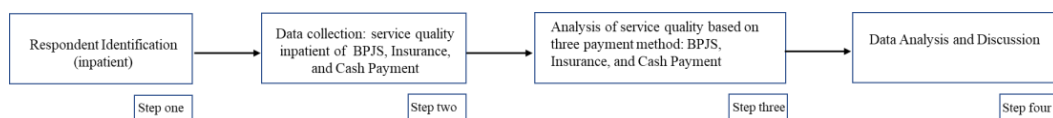
Ngatindriatun et al. (2023) argue that hospital environmental management is also an important factor in maintaining environmental sustainability as hospitals are the most extensive and most costly operational units within healthcare systems, consuming anywhere from 50–80% of the resources in these systems (Zalvand et al., 2022). The green hospital's guiding principles should cover six elements called sustainable location, water use efficiency, hospital works to achieve energy efficiency by using alternative energy sources and lower carbon emissions, utilization of resources and materials, the excellent circulation of air quality inside and pollution-free to enhance the comfort of the occupants and innovation hospital management to foster hospital-based green initiatives (Ministry of Health, 2018). Moreover, a hospital wanting to advance and become a model hospital for quality and service can adopt a green hospital concept. This type of hospital offers

excellent nutrition services, starting with nutrition assessment and continuing through monitoring and evaluation to improve service quality delivery (Fleischhacker et al., 2020; Arief et al., 2023).

### Service Quality & Patient Perception

The SERVQUAL 5-dimension model is widely used to measure service quality in various healthcare settings, including private hospitals. Perception of service quality is an attitude-forming process regarding quality (Carman, 2000). According to Carman (2000), more research has focused on the characteristics that contribute to service quality perceptions than on how these characteristics are perceived. Patient satisfaction is a critical aspect of healthcare delivery and is influenced by various factors. Moreover, patients inevitably have their expectations about what they want from a private healthcare facility. Thus, hospitals should comprehend this perception and close the gap between what customers want and what can be offered (Suki et al., 2009). Regarding the healthcare sector, several hospitals offer similar services but differ in quality (Kwateng et al., 2017). The service organizations' success largely depends on the quality of their services, both technically and functionally.

Figure 1. Research Methodology



Additionally, Kwateng et al., (2017), supported by Lim & Tang (2000), argue that consumers in healthcare industries are increasingly conscious of the rising standards of service and available choices nowadays. These modifications have increased expectations. Quality control, quality service, and the efficacy of medical treatment have become critical due to the pressure of competition and the growing need to satisfy patients (Gaynor, 2006). With the assistance of the research community, numerous providers are starting to understand that guaranteeing patients pleasure is an essential component of their marketing strategy and a critical factor in determining their long-term viability and success (Muhardi et al., 2023).

Below are Parasuraman, et al. (1988), service quality consists of five dimensions: tangibility, responsiveness, reliability, empathy, and assurance with its hypothesis.

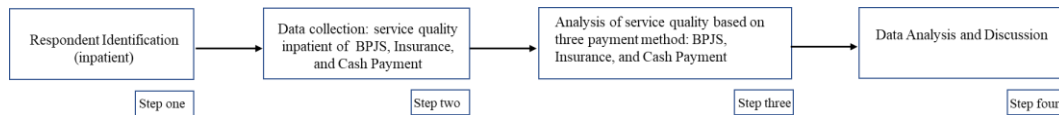
1. Tangibility refers to the physical condition of the building and the equipment used, which includes the cleanliness of these physical conditions. The tangibility dimension consists of seven questions.  
H1: Tangibility has significant differences in patient satisfaction.
2. Responsiveness concerns the promptness of hospital staff in addressing issues or patient complaints. The responsiveness dimension consists of six questions.  
H2: Responsiveness has significant differences on patient satisfaction.
3. Reliability dimension pertains to the readiness of hospital staff to provide services in accordance with the promises or agreements made initially. The reliability dimension consists of six questions.  
H3: Reliability has significant differences in patient satisfaction.
4. The empathy dimension involves the care shown by staff, which helps comfort patients. It consists of four questions.  
H4: Empathy has a significant difference in patient satisfaction.
5. The assurance dimension involves the knowledge of hospital staff, which fosters trust in patients. It consists of three questions.  
H5: Assurance has significant differences in patient satisfaction.

### METODE PENELITIAN

Mixed method research reveals symptoms holistically and contextually by collecting data from natural settings using the researcher as a critical instrument to formulate research questions to collect broader data and evidence (Campbell & Yin, 2018). Quantitative research is descriptive and tends to use an inductive approach to analysis (Priadana & Sunarsi, 2021). The quantitative method

involved a survey, with questionnaires being used to collect respondents' inpatient data, which was categorized based on payment types into three categories: inpatients with BPJS coverage, inpatients with insurance company coverage, and finally, inpatients who make cash/personal payments. This research consists of 4 big steps, the first two steps about data collection and the last two steps about data analysis.

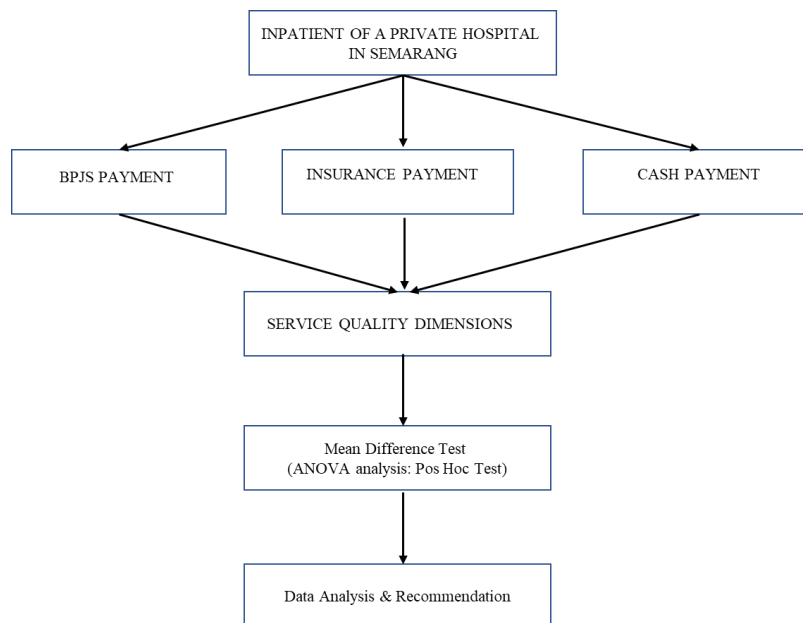
Figure 1. Research Methodology



The research employs purposive sampling, where the researcher handpicked and deliberately selected the sample to gather data and information from the determined respondents' characteristics and provide better data and information for this study (Kothari, 2004). Despite Parasuraman, et al. (1988) designing its dimensions for retail purposes, it has been proven that many studies use this model for research on service quality in hospitals such as Zaim et al. (2010), Al-Borie et al. (2013), Akdere et al. (2020), and Ali et al. (2021). The use of Parasuraman, et al. (1998) models of service quality in hospital services because it's also relevant to the services provided in hospitals. Each of these dimensions consists of several questions that are asked directly to hospital patients. The researcher asked the patients about their perceptions of the five quality dimensions. Patients will provide their assessments based on a Likert scale ranging from 1 to 5.

After data collection, data analysis follows several stages, as depicted in Figure 2. The first step involves classifying the payment methods used by patients at Santa Elisabeth Hospital using descriptive statistics. Descriptive statistics are used to observe the frequency distribution of payment methods utilised by patients visiting the hospital in a succinct manner (Marshal & Jonker, 2010; Nick, 2007). After the data has been described, inferential statistics are used to determine the conclusion from the data (Marshall & Jonker, 2011). ANOVA statistical test is conducted to determine whether there are differences in patient satisfaction at Santa Elisabeth Hospital based on different payment methods (Berenson et al., 2012). Besides testing the differences between patient methods and satisfaction, ANOVA is also used to test whether there are differences in patient satisfaction in each service quality dimension. The Bonferroni test is also used to see where the difference lies.

Figure 2. Data Analysis



## HASIL PENELITIAN

### Payment Method at Santa Elisabeth Hospital

At Green Santa Elisabeth Hospital, there are three accepted payment methods: insurance (Private insurance), cash, and BPJS (Indonesian national health insurance). The results from 225 patients who completed the questionnaire are shown in Table 1.

Table 1 shows that most patients at Santa Elisabeth Hospital pay through insurance, while the fewest use cash. There were no patients who felt very dissatisfied across all three payment methods. The overall average patient satisfaction rating is 4.72 with a standard deviation of 0.563, indicating that patients generally feel satisfied with the services at Santa Elisabeth Hospital. However, there are still some patients who feel neutral, and one patient who feels dissatisfied with the services at Santa Elisabeth Hospital. In Table 2 shows the descriptive statistics for the ratings of each dimension by the existing patients.

Table 1. Cross Tabulation Table Payment Method with Patient Satisfaction

Payment method	Patient Satisfaction					Total	Mean	Standard Deviation
	1	2	3	4	5			
Insurance	0	1	7	10	72	90	4.7	0.661
Cash	0	0	1	18	43	62	4.68	0.505
BPJS	0	0	2	12	59	73	4.78	0.479
Total	0	1	10	40	174	225	4.72	0.563

Table 2. Descriptive Statistics Five Dimension of Service Quality

	N	Minimum	Maximum	Mean	Std. Deviation
Overall Satisfaction	225	2	5	4.72	.564
Dimension Tangibility	225	3.143	5.00	4.705	.372
Dimension Reliability	225	2.333	5.00	4.507	.492
Dimension Responsiveness	225	2.25	5.00	4.611	.556
Dimension Empathy	225	2.00	5.00	4.513	.605
Dimension Assurance	225	3.00	5.00	4.553	.508

For all existing dimensions, there are no patients who feel very dissatisfied. However, there are still patients who rate the hospital's services as dissatisfactory. The average ratings for each dimension are quite good. All dimensions have values above 4.5 with a low standard deviation, indicating that most users or patients at the hospital are satisfied with the services provided.

### ANOVA

An ANOVA statistical test was conducted to determine whether there is a difference in perception or rating among patients using different payment methods. The null hypothesis states that there is no difference in perception or rating based on the payment method, while the alternative hypothesis suggests that at least one payment method has a different perception of the services at Santa Elisabeth Hospital.

Table 3. ANOVA Summary Result

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.418	2	0.209	0.655	0.521
Within Groups	70.942	222	0.320		
Total	71.360	224			

Table 3 represents the results of data processing using ANOVA. From the ANOVA result in Table X2, it can conclude that the null hypothesis failed to be rejected because the p-value (0.521) is more than alpha (0.05). So, Therefore, it can be said that there is no statistically significant difference in consumer satisfaction related to different payment methods. Additionally, ANOVA tests were conducted to determine whether different payment methods have varying perceptions in assessing satisfaction across different dimensions and still use the same rule of null hypothesis and alternative hypothesis from the previous ANOVA test. Table 4 below shows the ANOVA results for each dimension.

Table 4. ANOVA Summary Table Each Dimension

	<b>Sources</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
<b>Dimension Tangibility</b>	<b>Between Groups</b>	1.082	2	0.541	4.009	0.019
	<b>Within Groups</b>	29.961	222	0.135		
	<b>Total</b>	31.043	224			
<b>Dimension Reliability</b>	<b>Between Groups</b>	1.353	2	0.677	2.836	0.061
	<b>Within Groups</b>	52.968	222	0.239		
	<b>Total</b>	54.321	224			
<b>Dimension Responsiveness</b>	<b>Between Groups</b>	0.299	2	0.149	0.481	0.619
	<b>Within Groups</b>	68.924	222	0.310		
	<b>Total</b>	69.222	224			
<b>Dimension Empathy</b>	<b>Between Groups</b>	0.376	2	0.188	0.511	0.600
	<b>Within Groups</b>	81.584	222	0.367		
	<b>Total</b>	81.960	224			
<b>Dimension Assurance</b>	<b>Between Groups</b>	0.305	2	0.152	0.588	0.556
	<b>Within Groups</b>	57.545	222	0.259		
	<b>Total</b>	57.850	224			

From Table 4, it is found that there are differences in ratings for the tangibility dimension among the three groups. Additionally, the reliability dimension shows nearly significant differences in ratings. However, for the other dimensions, there are no significant differences observed. For the

reliability and tangibility dimensions, post hoc tests will be conducted to determine where the differences lie. Despite tangibility not showing significant differences statistically, the p-value is close to the alpha value, so a post hoc test will still be carried out. This is important for management to consider when determining the services provided to ensure patient satisfaction across all dimensions.

The post hoc test is conducted for dimensions that show significant differences. This test is used to determine where the differences occur. The ANOVA results only indicate differences in satisfaction ratings based on payment methods but do not specify where these differences lie. The post hoc method used here is Bonferroni. The Bonferroni method provides comparisons between each existing payment method for each dimension. Table 5 shows the results of the post hoc test.

Table 5. Bonferroni Post Hoc Test

Dimension			Mean Difference (I-J)	Std. Error	Sig.
Dimensi Tangibility	Insurance	Cash	-0.135	0.061	0.081
		BPJS	-0.147*	0.058	0.036
	Cash	Insurance	0.135	0.061	0.081
		BPJS	-0.011	0.063	1.000
	BPJS	Insurance	0.147*	0.058	0.036
Dimensi Reliability	Insurance	Cash	-0.094	0.081	0.736
		BPJS	-0.183	0.077	0.055
	Cash	Insurance	0.094	0.081	0.736
		BPJS	-0.089	0.084	0.879
	BPJS	Insurance	0.183	0.077	0.055

The Bonferroni test found significant differences in ratings between the payment methods of insurance and BPJS for the tangibility dimension. Similarly, for the reliability dimension, the payment methods of insurance and BPJS exhibit nearly significant statistical differences.

## PEMBAHASAN

The ANOVA test results show that all existing payment methods do not yield significantly different ratings overall. However, when examining individual dimensions, differences in ratings are apparent. In the ANOVA and post hoc tests using Bonferroni, if the null hypothesis is not rejected, it indicates no significant difference in patient ratings based on different payment methods, suggesting overall satisfaction. Conversely, if the null hypothesis is rejected, it indicates differences in ratings. The tangibility dimension is one of the dimensions where differences in ratings are observed. The differences are seen between payment methods using insurance and BPJS. Patients paying with BPJS tend to give higher ratings by 1.4 points. This aligns with the descriptive statistics in Table 1, where there are insurance patients who feel dissatisfied. Based on the percentages, BPJS patients are more satisfied than insurance patients.

The tangibility dimension relates to patients' assessments of the physical or visible conditions. Naturally, this is closely related to the cleanliness of the hospital. Cleanliness is one of the most critical factors in healthcare, particularly in hospitals. This importance has been further emphasized after the pandemic, as governments worldwide and the WHO have continued to stress the importance of cleanliness (Ali et al., 2023). Based on the article by Ali et al. (2023), people wash their hands twice as often as before the COVID-19 pandemic. This behaviour change causes most people to have stricter standards for cleanliness. Therefore, in the tangibility dimension, patients who pay with insurance tend to be more stringent in their evaluations than those using BPJS. People who have private insurance tend to have more money to buy private insurance hence they have more educated and have better knowledge than people who use national insurance such as BPJS (Hardika & Purwanti, 2021; Maharani et al., 2015; Kuntara, 2016).

In terms of reliability dimension, statistically, there is no significant difference, but the generated p-value is close to alpha, indicating that management needs to pay attention to this dimension. It is possible that in the future, patients may become increasingly dissatisfied with the reliability provided by the hospital. Therefore, there are two dimensions that require attention from management: tangibility and reliability.

For the other dimensions that do not show differences in perception among patients with different payment methods, it indicates that the hospital has been performing well. Santa Elisabeth Hospital consistently emphasizes its organizational culture, vision, and mission to always provide the best service to every patient.

According to the key source from the management at Santa Elisabeth Hospital, when delivering services to consumers, no distinctions should be made based on any factors. This is due to Santa Elisabeth Hospital's organizational culture, which stresses equality in service so that all patients feel satisfied. This culture is reinforced every employee daily before their shifts begin.

Furthermore, the hospital conducts evaluations and monitoring monthly. This is related to the spirit of continuous improvement. Even in the healthcare sector, management must continue improving the quality of its services (Ferrand et al., 2016; Gonzales, 2019; Ntwiga, 2019). Therefore, Santa Elisabeth Hospital must not remain complacent and must continue to make improvements. In this regard, the dimensions of tangibility and reliability must be continually enhanced to ensure that all patients experience the same high level of service at Santa Elisabeth Hospital. Improving service quality in every dimension or sector continuously will positively impact both consumers and the sustainability of hospitals (Piccirillo, 1996).

## **CONCLUSION**

Santa Elisabeth Hospital has effectively implemented its organizational culture, vision, and mission. This is evidenced by the fact that there are no significant differences in patient perceptions or ratings overall. However, when examining each dimension individually, there are differences in tangibility ratings, specifically the hospital's cleanliness. Additionally, the reliability dimension also shows nearly significant differences. The hospital must pay more attention to these two dimensions to remain competitive. As part of Green Hospitals in Indonesia, Santa Elisabeth Hospital presents a forward-thinking approach that aligns environmental stewardship with healthcare excellence. Santa Elisabeth Hospital offers a holistic improvement to healthcare infrastructure that supports environmental sustainability, economic efficiency, and better health outcomes for patients and staff through continuous improvement.

## **RECOMMENDATION**

To retain the patient, Santa Elisabeth Hospital needs to pay close attention to tangibility aspect, especially about cleanliness of the hospital. Cleanliness is a major aspect when it comes to health. People expect a clean room, bright environment, no odor, and many other aspects of cleanliness. People believe that a clean room and environment will lead to better health. But the hospital needs to pay attention to their culture, vision and mission, to always keep quality high so patients always feel comfortable when come to Santa Elisabeth Hospital. Whether the payment method using BPJS or other methods need to have equal service.

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