

Analysis of National Hospital Quality Indicator Achievement among Hospitals in Karawang Regency, Indonesia

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ABSTRACT

The National Hospital Quality Indicators (NHQI) are a set of indicators used to assess the quality of hospital services at the national level. However, the implementation of NHQI in Indonesia still shows variations in quality indicator achievements among hospitals, both in terms of reporting compliance and the attainment of specific indicator targets, including in Karawang Regency. This study aimed to analyze the achievement of thirteen NHQI indicators in Karawang Regency. This study employed a cross-sectional design with a descriptive quantitative approach through secondary data analysis. The research sample consisted of 24 hospitals that had reported NHQI achievements in April 2026 and had completed the NHQI reporting comprehensively, which were then analyzed using univariate analysis. In general, the characteristics of hospitals in Karawang Regency were predominantly private hospitals, Class B hospitals, and General Hospitals. Most NHQI indicators showed high levels of achievement, with the highest mean score observed for complaint response time (Mean $\pm$ SD: 99.9 $\pm$ 0.6). However, compliance with fall risk prevention measures (Mean $\pm$ SD: 94.1 $\pm$ 16.3) and compliance with physician ward visit schedules (Mean $\pm$ SD: 79.8 $\pm$ 18.8) remained below their respective national targets. Complaint response time demonstrated the highest level of compliance, with 100.0% of hospitals meeting the established standard, followed by compliance with the National Formulary (91.7%). In contrast, PPE compliance showed the highest proportion of hospitals failing to meet the target (58.3%), while compliance with patient identification and fall risk prevention measures also showed unmet proportions of 41.7% each. Therefore, targeted improvement strategies are needed, particularly for indicators with a high proportion of unmet targets and those with N/A data. From a policy perspective, the Karawang District Health Office and hospital management should strengthen monitoring systems, standardize reporting procedures, and provide regular performance feedback to ensure more complete, accurate, and consistent NHQI reporting across hospitals.

Keywords: National Quality Indicators, Hospital Characteristics, Karawang, Healthcare Service Quality

Introduction

The quality of healthcare services is one of the primary indicators of the success of hospital service systems in ensuring patient safety, improving service user satisfaction, and maintaining public trust in healthcare facilities (Laskita et al., 2025; Purwandani & Purnamawati, 2023; Wangean et al., 2025). Improvements in quality and patient safety should be reflected continuously in every activity within hospitals (Fitriani et al., 2024). Therefore, hospitals are required to establish quality control and patient safety systems through the implementation of service standards integrated with the hospital accreditation system to achieve the targets of the National Quality Indicators (NQIs) (Fitriani et al., 2024; Pamungkas & Putri, 2026; Yusriati et al., 2025). In addition to serving as part of internal quality evaluation, the implementation of NQIs also constitutes a national obligation that must be reported routinely on a monthly basis through the reporting system provided by the Ministry of Health of the Republic of Indonesia (Fitriani et al., 2024; Hidayah et al., 2025; Pamungkas & Putri, 2026; Purwandani & Purnamawati, 2023; Wangean et al., 2025).

National Quality Indicators (NQIs) constitute a set of indicators used to assess the quality of hospital services at the national level (Fitriani et al., 2024; Hidayah et al., 2025; Pamungkas & Putri, 2026; Purwandani & Purnamawati, 2023; Wangean et al., 2025). NQIs encompass various aspects of healthcare services related to patient safety, service effectiveness, healthcare worker compliance, and hospital responsiveness to patient needs (Fitriani et al., 2024; Wigati et al., 2025). Several indicators measured include compliance with patient identification procedures, compliance with the use of personal protective equipment, outpatient waiting time, elective surgery delays, compliance with physician ward round schedules, reporting of critical laboratory results, emergency cesarean section response time, compliance with the National Formulary, hand hygiene compliance, compliance with clinical pathways, compliance with patient fall risk prevention measures, patient and family satisfaction, and response time to complaints (Fitriani et al., 2024; Wigati et al., 2025). The implementation of these indicators is expected to improve the quality of healthcare services while also supporting the achievement of hospital accreditation standards (Fitriani et al., 2024; Purwandani & Purnamawati, 2023).

In its implementation, the successful achievement of hospital quality indicators is influenced by the quality management system adopted by each hospital (Wardhani et al., 2019). The quality management system functions as a link between the implementation of accreditation standards and the ultimate outcomes in the form of improved service quality and patient safety (Wardhani et al., 2019). Previous studies have shown that the successful implementation of a quality management system is influenced by various organizational factors, such as strong leadership, a culture of quality, human resource development, and continuous quality improvement (Wardhani et al., 2019). In addition, internal hospital characteristics, including hospital size, ownership status, service capacity, technical capability, and organizational culture, also contribute to the successful implementation of hospital quality improvement initiatives (Wardhani et al., 2019).

Not only internal factors, but also external factors such as competition in healthcare services influence the quality of hospital services (Wardhani et al., 2019). Hospitals operating in highly competitive environments tend to have greater motivation to improve service quality in order to maintain their competitiveness (Wardhani et al., 2019). Under such conditions, quality performance and hospital accreditation status become important indicators considered by the public when selecting healthcare facilities (Wardhani et al., 2019). Therefore, the measurement of quality indicators functions not only as an internal hospital evaluation tool, but also

as a form of public transparency and benchmarking among healthcare facilities (Pamungkas & Putri, 2026; Purwandani & Purnamawati, 2023; Wardhani et al., 2019; Yusriati et al., 2025).

The measurement of quality indicators is conducted to assess the extent to which quality improvement efforts implemented by hospitals are able to produce continuous service improvements (Pamungkas & Putri, 2026; Purwandani & Purnamawati, 2023; Yusriati et al., 2025). In addition to serving as a basis for evaluation and learning, the results of quality indicator measurements are also utilized by district/city health offices, provincial health offices, and the Ministry of Health in the processes of planning, supervision, control, and policymaking related to the quality of healthcare services in healthcare facilities (Pamungkas & Putri, 2026; Purwandani & Purnamawati, 2023). Therefore, the achievement of NQIs plays a strategic role in supporting the improvement of healthcare service quality at the national level.

Nevertheless, the implementation and achievement of Hospital National Quality Indicators (NQIs) in Indonesia continue to face various challenges. Several studies have shown that there are still variations in quality indicator achievement among hospitals in Indonesia, both in terms of reporting compliance and the attainment of specific indicator targets (Fitriani et al., 2024; Hidayah et al., 2025; Pamungkas & Putri, 2026). One of the identified challenges is the disparity in hospital capacity to implement quality improvement programs (Pamungkas & Putri, 2026). Based on data from June 2023, only approximately 4.5% of hospitals were able to achieve the targets for all 13 Hospital NQIs (Purwandani et al., 2025). In addition, 81.8% of hospitals that successfully achieved the targets for the 13 Hospital NQIs were hospitals with full accreditation status (Purwandani et al., 2025). Data on hospital NQI reporting in West Java in 2024 also indicated a reporting compliance rate of 82%, meaning that 18% of hospitals had not complied with reporting NQIs to the Ministry of Health (Pamungkas & Putri, 2026). Furthermore, among the non-compliant hospitals, several had never routinely submitted monthly NQI reports (Pamungkas & Putri, 2026). These conditions indicate that the implementation of hospital quality improvement programs remains uneven.

However, previous studies on NHQIs in Indonesia have primarily focused on individual hospitals or national-level evaluations, whereas evidence regarding NHQI achievement at the district level remains limited. Karawang Regency is an important setting for investigation because it is one of Indonesia's largest industrial regions, placing substantial demands on healthcare services and hospital performance. In addition, Karawang Regency includes hospitals with varying ownership statuses, classifications, and service types, which may influence the achievement of quality indicators (Karawang Regency Regional Government Work Plan (RKPD) Karawang Regency, 2024). Unlike national-level studies that provide aggregated findings, this study offers district-level evidence on NHQI achievement, allowing the identification of specific indicators requiring improvement and generating information that can support local quality monitoring and policy development. Studies examining NHQI achievement in Karawang Regency using the most recent 2026 data remain limited. Therefore, this study aims to analyze NHQI achievement among hospitals in Karawang Regency and provide evidence to support quality improvement initiatives and policymaking at the local level.

Methodology

This cross-sectional study employed secondary data analysis using a descriptive quantitative research design to identify the achievement of twelve Hospital National Quality Indicators (NQIs), namely hand hygiene compliance,

compliance with the use of Personal Protective Equipment (PPE), patient identification compliance, emergency cesarean section (CS) response time, outpatient waiting time, elective surgery delays, compliance with physician ward round schedules, reporting of critical laboratory results, compliance with the National Formulary, compliance with Clinical Pathways (CP), compliance with patient fall risk prevention measures, and response time to complaints, which were collected in April 2026. In addition, the patient satisfaction indicator was obtained from December 2025 data, as the reporting period for this indicator is conducted every semester. Secondary data were obtained from the database of the Ministry of Health of the Republic of Indonesia at mutufasyankes.kemkes.go.id.

The population in this study consisted of all hospitals in Karawang Regency registered in the online database of the Ministry of Health, totaling 29 hospitals. The study sample comprised 24 hospitals that reported the achievement of National Quality Indicators (NQIs) in April 2026, while hospitals that did not report NQI achievement during the same period were included in the exclusion criteria. To ensure data quality, data cleaning and verification processes were conducted to assess the completeness and consistency of the data prior to analysis, thereby ensuring that the data used were objective and met the study criteria. Data analysis was performed quantitatively using univariate analysis to describe the distribution of each variable in the form of tables and graphs.

Result and Discussion

Hospital Characteristics

The hospitals included in this study were hospitals in Karawang Regency that reported NHQI data in April 2026, totaling 24 hospitals. The characteristics of each hospital are presented in Table 1. Based on hospital ownership status in Karawang Regency, there were 22 private hospitals (91.7%) and 2 government hospitals (8.3%). Based on hospital classification in Karawang Regency, there were 4 Class D hospitals (16.7%), 18 Class C hospitals (75%), and 2 Class B hospitals (8.3%). Meanwhile, based on the type of hospital services in Karawang Regency, there were 21 General Hospitals (87.5%) and 3 Specialty Hospitals (12.5%).

Table 1. Characteristics of Hospitals in Karawang Regency

Characteristics	Category	n	%
Ownership Status	Public Hospital	2	8,3
	Private Hospotal	22	91,7
Hospital Classification	Class D	4	16,7
	Class C	18	75,0
	Class B	2	8,3
Type of Services Provided	General Hospital	21	87,5
	Specialized Hospital	3	12,5

The ownership of private hospitals in Karawang Regency varies and includes companies, foundations, religious organizations, and social organizations. Hospital

ownership has a significant influence on the distribution of decision-making authority within hospitals (Xie et al., 2019). Private hospitals generally have greater flexibility, simpler processes, and relatively high competition among hospitals (Xie et al., 2019). The study conducted by Yarimoglu & Ataman (2022) showed that the quality of services in private hospitals was perceived to be better than that in public hospitals.

This study also showed that the majority of hospitals in Karawang Regency were Class C hospitals (75%) and General Hospitals (87.5%). The Specialty Hospitals in Karawang Regency were limited to maternal and child hospitals. These findings indicate that hospitals in Karawang Regency generally already provide basic specialist services, including internal medicine, surgery, obstetrics and gynecology, and pediatric services. However, they still have limitations compared to Class A and Class B hospitals in terms of human resources, infrastructure, and service complexity (Government Regulation of the Republic of Indonesia No. 47 on the Administration of the Hospital Sector, 2021).

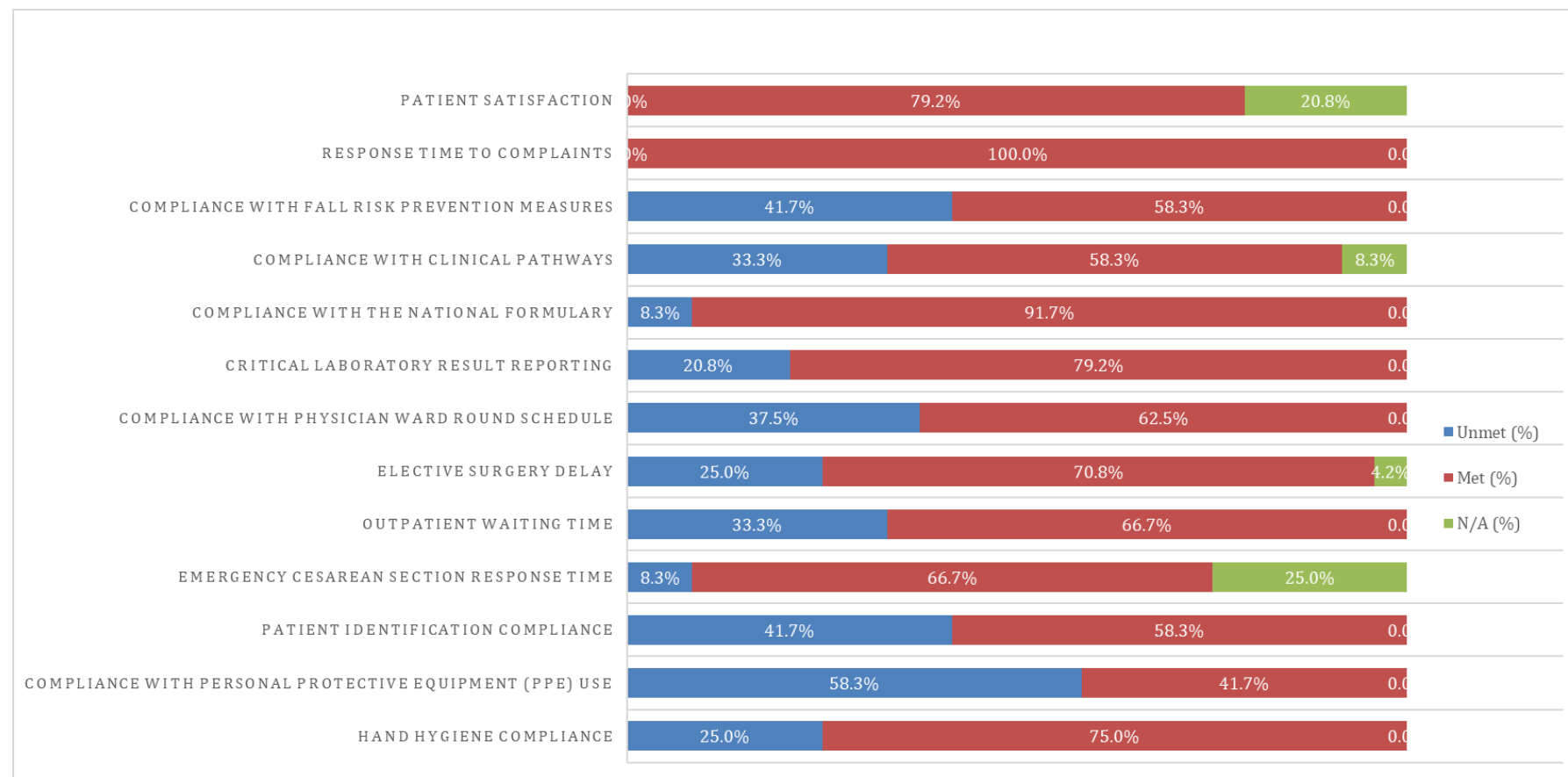
National Hospital Quality Indicators

After describing the characteristics of hospitals in Karawang Regency based on ownership status, hospital class, and type of service, the researcher subsequently measured the achievement of the National Quality Indicators (NQI) for the April 2026 period. Table 2 presents the distribution of the achievement of each indicator descriptively through measures of central tendency and data dispersion, including mean and standard deviation, median, as well as minimum and maximum values. This presentation aims to provide an overview of the level of service quality achievement and the variation in achievements among hospitals for each assessed indicator.

Based on Table 2, the achievement of the National Quality Indicators (NQI) among hospitals in Karawang Regency during the April 2026 period showed varying results. The indicator with the highest average achievement was complaint response time, with a mean score of 99.9 ± 0.6 . High achievements were also observed in the reporting of critical laboratory results and compliance with the National Formulary, both with average scores above 95%. Several indicators demonstrated substantial variability in performance across hospitals. Although the average achievements for emergency cesarean section response time (88.6 ± 29.8), outpatient waiting time (80.7 ± 22.6), clinical pathway compliance (81.2 ± 16.4), and elective surgery delays (4.5 ± 7.8) met the established targets, the large standard deviations indicate considerable differences in performance among hospitals. In contrast, compliance with physician ward visit schedules (79.8 ± 18.8) and fall risk prevention measures (94.1 ± 16.3) did not achieve the national targets on average. Overall, NHQI performance in Karawang Regency was generally favorable; however, several service indicators still require improvement and more equitable achievement across hospitals.

Table 2. Achievement of National Quality Indicators (NQI) in Hospitals in Karawang Regency for the April 2026 Period

Indicator	Mean $\pm$ SD	Median	Min - Max
Hand hygiene compliance	91,0 $\pm$ 8,2	92,4	68,9 – 100,0
Compliance with Personal Protective Equipment (PPE) Use	95,8 $\pm$ 5,6	98,5	83,0 – 100,0
Patient identification compliance	95,7 $\pm$ 14,8	100,0	27,0 – 100,0
Emergency Cesarean Section Response Time	88,6 $\pm$ 29,8	100,0	0,0 – 100,0
Outpatient waiting time	80,7 $\pm$ 22,6	89,4	7,4 – 100,0
Elective surgery delay	4,5 $\pm$ 7,8	2,0	0,0 – 34,0
Compliance with Physician Ward Round Schedule	79,8 $\pm$ 18,8	86,5	43,0 – 100,0
Critical Laboratory Result Reporting	96,8 $\pm$ 11,1	100,0	47,0 – 100,0
Compliance with the National Formulary	95,8 $\pm$ 7,7	100,0	71,0 – 100,0
Compliance with Clinical Pathways	81,2 $\pm$ 16,4	83,5	49,0 – 100,0
Compliance with Fall Risk Prevention Measures	94,1 $\pm$ 16,3	100,0	20,9 – 100,0
Response Time to Complaints	99,9 $\pm$ 0,6	100,0	97,0 – 100,0
Patient Satisfaction	91,9 $\pm$ 7,3	94,1	78,7 – 100,0



Note:

N/A indicates that the indicator data were not reported.

Figure 1. Achievement of Hospital National Quality Indicators (NQIs) in Karawang Regency for the April 2026 Period

Based on the graph, the achievement of the National Quality Indicators (NQI) among hospitals in Karawang Regency showed that most indicators were categorized as achieved according to the operational definitions of each indicator. The highest achievement was observed in complaint response time, where 100.0% of hospitals met the standard. This indicates that hospitals had responded to complaints through written media, verbal communication, and mass media according to the stages of identification, risk grading determination, analysis, and follow-up, with a minimum achievement standard of $\geq 80\%$. High achievement was also observed in compliance with the use of the National Formulary at 91.7%, indicating that most hospitals had met the standard for drug prescribing by the physician in charge (DPJP) in accordance with the list of medications in the National Formulary.

However, several indicators still showed a relatively high proportion of unmet targets. The compliance with personal protective equipment (PPE) use indicator had the highest proportion of unmet achievement at 58.3%, indicating that most hospitals had not yet achieved the standard for appropriate PPE use according to indications. The indicators for compliance with patient identification and compliance with fall risk prevention measures also showed unmet proportions of 41.7% each, even though both indicators require optimal achievement in accordance with the standards established by the hospitals.

The N/A category was identified in several indicators, particularly emergency cesarean section response time at 25.0%, patient satisfaction at 20.8%, compliance with clinical pathways at 8.3%, and elective surgery delays at 4.2%. This category indicates that the indicator data were not reported, either because measurements were not conducted or because the required data to assess the indicators were unavailable. Therefore, the presence of N/A data should receive attention, as it may affect the completeness of service quality monitoring.

The results of this study showed that the achievement of the hand hygiene compliance indicator in hospitals within Karawang Regency was 75%. The implementation of this indicator refers to the principles of the 5 Moments and 6 Steps of hand hygiene (Fitriani et al., 2024). The study by Fitriani et al. (2024) demonstrated that factors influencing hand hygiene compliance include the level of staff knowledge, awareness in performing hand hygiene, and management involvement in evaluating hand hygiene compliance. In addition, the study by Anugrahsari et al. (2021) showed that age was associated with handwashing compliance, whereas gender, education level, and occupation did not show a significant relationship with handwashing compliance.

The results of this study showed that the compliance with personal protective equipment (PPE) use indicator had the lowest achievement compared to other indicators, with an achievement rate of 58.3% in several hospitals in Karawang Regency. This indicator measures the compliance of healthcare personnel in appropriately using PPE according to indications when performing procedures that pose a risk of exposing the body or mucous membranes to blood, body fluids, or other infectious fluids, based on the type of transmission risk, namely contact, droplet, and airborne transmission (Regulation of the Minister of Health of the Republic of Indonesia No. 30 on National Quality Indicators for Health Services at Private Practices of Physicians and Dentists, Clinics, Community Health Centers, Hospitals, Health Laboratories, and Blood Trans, 2022). The measurement of this indicator aims to ensure the safety of both healthcare workers and service users by reducing the risk of infection. The study by Purwandani & Purnamawati (2023) showed that non-compliance among healthcare workers in the use of PPE in various hospital facilities was influenced by factors such as knowledge, availability of facilities, and work

environment. In addition, efforts to improve the achievement of this indicator can be carried out through continuous education, adequate PPE provision, supervision, implementation of role models, strengthening monitoring and evaluation, increasing staff awareness and behavior, and implementing reward and punishment systems (Fitriani et al., 2024).

Correct patient identification is an identification process carried out by healthcare providers using at least two identity markers, such as the patient's full name, date of birth, medical record number, or national identification number (NIK), in accordance with regulations applicable within the hospital. The identification process may be conducted visually (by checking) or verbally/orally (Regulation of the Minister of Health of the Republic of Indonesia No. 30 on National Quality Indicators for Health Services at Private Practices of Physicians and Dentists, Clinics, Community Health Centers, Hospitals, Health Laboratories, and Blood Trans, 2022). The results of this study showed that the achievement of the patient identification indicator in hospitals within Karawang Regency was 58.3%. The study by Sahr et al. (2022) demonstrated that the implementation of proper patient identification has an effect on the quality of healthcare services in hospitals. The patient identification process begins when the patient is first admitted to the hospital, and the patient's identity continues to be confirmed throughout every stage of care. Patient identification is performed before procedures, diagnostic examinations, and therapeutic interventions. In addition, patient identification is also conducted before medication administration, blood and blood product transfusion, specimen collection, diet administration, radiotherapy, intravenous fluid administration, hemodialysis, blood or other specimen collection for clinical examination, cardiac catheterization, diagnostic radiology procedures, and for patients in comatose conditions (Sahr et al., 2022).

The achievement of the emergency cesarean section response time indicator in hospitals within Karawang Regency was 66.7%. The measurement of this indicator aims to optimize efforts to save mothers and infants through timely management of emergency cesarean section procedures (Regulation of the Minister of Health of the Republic of Indonesia No. 30 on National Quality Indicators for Health Services at Private Practices of Physicians and Dentists, Clinics, Community Health Centers, Hospitals, Health Laboratories, and Blood Trans, 2022). The study by Fitriani et al. (2024) showed that barriers to achieving this indicator included ineffective team communication during service delivery, unpreparedness or absence of team members, blood examination processes that required considerable time, and limited blood supplies due to the unavailability of certain blood types. In addition, shortages of medical personnel, limited facilities, and inadequate equipment and supplies could also delay the service process (Fitriani et al., 2024). Efforts that can be undertaken to improve the achievement of this indicator include ensuring 24-hour readiness of the physician in charge of patient care (DPJP), strengthening team commitment and coordination, enhancing hospital management support, and implementing reward and punishment systems to improve staff compliance and performance in maternal and neonatal emergency services (Fitriani et al., 2024).

Outpatient waiting time in this indicator refers to the time required for patients to obtain healthcare services, starting from the registration process until entering the doctor's examination room (Anugrahsari et al., 2021). This indicator is considered an important measure in assessing hospital service quality because it is closely related to patient satisfaction levels (Anugrahsari et al., 2021). Therefore, hospitals need to manage service components, including patient waiting time, to align with patient conditions and expectations (Anugrahsari et al., 2021). The results of this study showed that the overall achievement of the outpatient waiting time indicator in

hospitals within Karawang Regency was 66.7%. A study conducted at the Regional General Hospital (RSUD) of Indramayu Regency demonstrated a relationship between outpatient waiting time and patient satisfaction with healthcare services, with a p-value of 0.042 (Laeliyah & Subekti, 2017). On the other hand, the failure to achieve this indicator may be influenced by several factors, including the suboptimal performance of physicians in charge of patient care (DPJP) in carrying out duties according to the established schedule, the underutilization of online registration systems, the incomplete implementation of electronic medical records (EMR), the busy schedules of specialist doctors who still conduct inpatient ward rounds before outpatient clinic services, and the fact that some doctors reside outside the local area (Fitriani et al., 2024).

Elective surgery delay refers to a surgical procedure that is postponed for more than one hour from the predetermined surgical schedule (Regulation of the Minister of Health of the Republic of Indonesia No. 30 on National Quality Indicators for Health Services at Private Practices of Physicians and Dentists, Clinics, Community Health Centers, Hospitals, Health Laboratories, and Blood Trans, 2022). The results of this study showed that there was a 25% rate of unmet achievement for the elective surgery delay indicator among hospitals in Karawang Regency. Several factors contributing to elective surgery delays include medical factors (48.1%), patient-related factors (14.8%), logistical and administrative factors (27.8%), and other factors (9.3%), such as medical reasons, changes in cardiovascular and respiratory function, abnormal laboratory values, and refusal of surgery by the patients themselves (Anugrahsari et al., 2021).

The achievement of the physician ward visit time compliance indicator in hospitals within Karawang Regency was 62.5%. The study by Anugrahsari et al. (2021) showed that this indicator was among those with the lowest achievement across the three types of teaching hospitals in Indonesia. Physician ward visit time is defined as the time when physicians conduct visits to monitor the progress of patients under their responsibility within the period of 06:00–14:00 on each working day (Regulation of the Minister of Health of the Republic of Indonesia No. 30 on National Quality Indicators for Health Services at Private Practices of Physicians and Dentists, Clinics, Community Health Centers, Hospitals, Health Laboratories, and Blood Trans, 2022). Another study found that the timing of specialist physician visits in inpatient wards varied across different wards, with most visits beginning after 09:00 a.m. (Anugrahsari et al., 2021). Such conditions may affect the achievement of the physician ward visit time compliance indicator in hospitals..

The laboratory critical result reporting compliance indicator refers to the time required to provide a response to the referring physician after the examination result becomes available and is reviewed by an authorized clinical pathologist or analyst, until the result is received by the referring physician either verbally or in writing. The result must be received by the referring physician within less than 30 minutes (Anugrahsari et al., 2021; Regulation of the Minister of Health of the Republic of Indonesia No. 30 on National Quality Indicators for Health Services at Private Practices of Physicians and Dentists, Clinics, Community Health Centers, Hospitals, Health Laboratories, and Blood Trans, 2022). The purpose of measuring this indicator is to describe the hospital's critical value reporting system in order to reduce risks to patient safety (Regulation of the Minister of Health of the Republic of Indonesia No. 30 on National Quality Indicators for Health Services at Private Practices of Physicians and Dentists, Clinics, Community Health Centers, Hospitals, Health Laboratories, and Blood Trans, 2022). A total of 79.2% of hospitals in Karawang Regency achieved this indicator, with an average achievement rate of 96.8% against the 100% target. The laboratory critical result reporting compliance indicator was also identified as the

indicator with the highest achievement among Main Teaching Hospitals, Affiliated Teaching Hospitals, and Satellite Teaching Hospitals in Indonesia (Anugrahsari et al., 2021).

The achievement of the clinical pathway compliance indicator in hospitals within Karawang Regency was 58.3%. The study by Fitriani et al. (2024) showed that the implementation of compliance with clinical pathways had not yet met the established standards. There were still healthcare personnel who were not compliant in implementing clinical pathways and who had not optimally completed clinical pathway forms in accordance with standard operating procedures (SOPs). In addition, Healthcare Providers (PPA) had not consistently completed clinical pathway documentation, while Patient Service Managers (MPP), as the verification team, had also not fully carried out their duties according to the established SOPs. Other factors contributing to the low achievement of this indicator included the absence of developed clinical pathway compliance forms for the 10 most common disease diagnoses and the lack of optimal commitment from healthcare providers in implementing clinical pathways (Fitriani et al., 2024).

Another study stated that the development of clinical pathways should focus on service outcomes. To achieve the expected outcomes, it is necessary to establish appropriate service standards, although variations in patient care may still occur. In addition, regular monitoring and evaluation are essential to measure achievements and provide recommendations for improving the implementation of clinical pathways (Anugrahsari et al., 2021). Efforts that can be undertaken to improve the achievement of this indicator include increasing socialization and education for all staff regarding procedures for completing clinical pathway forms, strengthening management support in encouraging staff to communicate challenges and benefits related to the use of clinical pathways, conducting regular meetings to discuss the progress of clinical pathway implementation, evaluating compliance with clinical pathway application, disseminating evaluation results to all involved staff, organizing periodic training related to clinical pathway implementation, and providing written educational materials on clinical pathways to all relevant staff (Fitriani et al., 2024).

Fall risk prevention measures include initial fall risk assessment, reassessment of fall risk, and fall risk prevention interventions. The measurement of this indicator aims to ensure the delivery of safe healthcare services and to support the achievement of patient safety goals in hospitals (Regulation of the Minister of Health of the Republic of Indonesia No. 30 on National Quality Indicators for Health Services at Private Practices of Physicians and Dentists, Clinics, Community Health Centers, Hospitals, Health Laboratories, and Blood Trans, 2022). The results of this study showed that the achievement of the fall risk prevention indicator in hospitals within Karawang Regency was still quite varied, with an overall achievement rate of 58.3%. The study by Anugrahsari et al. (2021) demonstrated a significant relationship between nurse motivation and compliance with the implementation of Standard Operating Procedures (SOPs) for fall risk prevention. This condition indicates that healthcare worker motivation is one of the important factors supporting the implementation of fall risk prevention measures in hospitals.

The complaint response time indicator refers to the period required by hospitals to respond to written, verbal, or mass media complaints through stages of identification, risk grading determination, analysis, and follow-up. There are three complaint grading categories and response time standards: (1) Red grading, which means complaints must be responded to and followed up immediately within a maximum of 1 × 24 hours after being submitted to staff; (2) Yellow grading, which means the response and follow-up process must be completed within a maximum of 3 days after the complaint is submitted; and (3) Green grading, which means the

response and follow-up process must be completed within a maximum of 7 days after the complaint is submitted to staff (Regulation of the Minister of Health of the Republic of Indonesia No. 30 on National Quality Indicators for Health Services at Private Practices of Physicians and Dentists, Clinics, Community Health Centers, Hospitals, Health Laboratories, and Blood Trans, 2022). The achievement of this indicator among hospitals in Karawang Regency was very good (100%). Most complaints received by hospitals were related to misunderstandings and miscommunication with patients; therefore, problem-solving methods should be carried out through effective and assertive communication (Anugrahsari et al., 2021). In addition, this indicator is also associated with patient satisfaction (Anugrahsari et al., 2021).

Patient satisfaction is the result of patients' assessments and opinions regarding the performance of services provided by healthcare facilities (Regulation of the Minister of Health of the Republic of Indonesia No. 30 on National Quality Indicators for Health Services at Private Practices of Physicians and Dentists, Clinics, Community Health Centers, Hospitals, Health Laboratories, and Blood Trans, 2022). The results of this study showed that the achievement of the patient satisfaction indicator in hospitals within Karawang Regency was very good, with an achievement rate reaching 100%. A high level of patient satisfaction can increase public trust in the services provided by hospitals and consequently enhance the hospital's image within the community (Anugrahsari et al., 2021). In addition, service quality is the main factor that significantly contributes to patient satisfaction levels (Laila & Paramarta, 2024). Therefore, continuous improvement in service quality is an important aspect of maintaining and enhancing patient satisfaction in hospitals.

This study has several limitations. The study only employed univariate analysis based on National Quality Indicator (NQI) achievement data, and therefore could not yet describe the relationships between variables or identify dominant factors associated with the achievement of hospital quality indicators. In addition, the number of research samples was limited to hospitals that reported NQI data during the study period, resulting in data heterogeneity that was not yet optimal for more in-depth bivariate or multivariate analyses. Therefore, future studies are expected to use a larger and more diverse sample size to enable more comprehensive bivariate and multivariate analyses. Furthermore, a mixed methods approach is also needed to deepen the analysis of factors influencing NQI achievement in hospitals.

Conclusion

Based on the 24 hospitals in Karawang Regency that reported National Quality Indicators (NQI) in April 2026, the characteristics of the hospitals were predominantly private hospitals, Class C hospitals, and General Hospitals. Overall, the achievement of NQI was considered fairly good, with the highest achievements observed in the patient satisfaction and complaint response time indicators. However, several indicators still showed low achievement, particularly compliance with personal protective equipment (PPE) use, patient identification, and fall risk prevention. Variations in indicator achievement were influenced by staff knowledge and compliance, management support, availability of facilities, team communication, as well as monitoring and evaluation of hospital services. Therefore, targeted improvement strategies are needed, particularly for indicators with a high proportion of unmet targets and those with N/A data. From a policy perspective, the Karawang District Health Office and hospital management should strengthen monitoring systems, standardize reporting procedures, and provide regular performance

feedback to ensure more complete, accurate, and consistent NHQI reporting across hospitals.

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Declaration of Competing Interest

The authors declare that no conflict of interest exists.

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