Challenges And Solutions of Healthcare Workers In Providing Social Security Administering Body (BPJS) Patient Services In The Digital Era at Royal Prima Marelan Hospital

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Abstract

Indonesia's national health insurance program, administered by the Social Security Administering Body for Health (BPJS Kesehatan), faces mounting challenges in the digital era, including rising workloads, system disruptions, and limited dissemination of policy updates. At Royal Prima Marelan Hospital, these issues affect service efficiency and patient satisfaction. This study examines the challenges and adaptive strategies of healthcare workers in delivering BPJS services within a digital healthcare environment. A qualitative case study was conducted at Royal Prima Marelan Hospital, Medan, from January to November 2025. Participants included nine purposively selected informants, six primary healthcare workers, and three triangulation informants from hospital management and administrative units. Data were collected through observation, in-depth interviews, and document review, and analyzed descriptively using data reduction, data display, and conclusion drawing. Despite the use of digital systems such as VClaim, INA-CBGs, and SIMRS, healthcare workers encountered persistent barriers, including unstable internet connections, limited infrastructure, and insufficient digital skills. These challenges increase administrative workload, delay services, reduce efficiency, and lower staff motivation. Adaptive responses included internal digital training, manual backup documentation, and gradual improvements to systems and networks. Digital transformation has not fully alleviated workload pressures due to infrastructural and competency gaps. Strengthening digital infrastructure, enhancing interoperability, and providing continuous digital training are essential for sustainable BPJS service delivery. Future research should explore innovations such as AI-based claim management and automated audit systems.

Keywords: Challenges, Healthcare Worker Adaptation, BPJS Kesehatan Services, Digital Transformation.

INTRODUCTION

Indonesia's National Health Insurance scheme (*Jaminan Kesehatan Nasional*/JKN), administered by the Social Security Administering Body for Health (BPJS *Kesehatan*), has accelerated hospitals' need to deliver faster, more transparent, and integrated services, especially as patient pathways increasingly rely on digital touchpoints, such as registration, eligibility verification, claims submission, and feedback. Hospital digital transformation is typically implemented through Hospital Management Information Systems (SIMRS), designed to electronically integrate administrative and clinical processes(Asiam & Gunawan, 2024).

However, evidence from Indonesian contexts indicates that SIMRS adoption continues to encounter barriers, including infrastructure limitations, insufficient user competence, organizational readiness gaps, and additional workloads when systems are misaligned with unit needs, ultimately undermining service continuity and data quality (Cita et al., 2025).

From the patient perspective, BPJS *Kesehatan* has expanded digital access through the Mobile JKN application, which facilitates service navigation by enabling users to access information, complete administrative processes, and interact with healthcare facilities) (Apriliani, 2025). Recent empirical studies highlight that the perceived quality of Mobile JKN services is strongly associated with user satisfaction. However, findings also suggest that digital convenience alone is insufficient; reliability, responsiveness, and clarity of information remain critical determinants of patient experience (Rohmah et al., 2024).

At the facility level, BPJS-related services rely heavily on interoperability between internal hospital systems (SIMRS) and BPJS platforms such as V-Claim, which supports eligibility and administrative verification (including issuance of the Eligibility Certificates/*Surat Eligibilitas Peserta*/SEP) and downstream claims workflows. When SIMRS and V-Claim function as separate systems, staff must often open multiple applications and re-enter patient or administrative data, increasing processing time and the risk of inconsistency or error. Research on integration readiness between SIMRS and V-Claim underscores that successful interoperability requires not only technical capability but also coordinated preparedness across "man, money, machine, material, and method," reinforcing that interoperability is both a technical and organizational challenge (Putri, 2023).

At the facility level, BPJS-related services depend heavily on interoperability between hospital information systems (SIMRS) and BPJS platforms, such as V-Claim, which manage eligibility and administrative verification (including issuance of the *Surat Eligibilitas Peserta*/SEP) as well as downstream claims workflows. When SIMRS and V-Claim operate separately, staff are often required to open multiple applications and re-enter patient or administrative data, increasing processing time and the risk of inconsistency or error. Studies on integration readiness between SIMRS and V-Claim emphasize that successful interoperability requires not only technical capability but also coordinated preparedness across "man, money, machine, material, and method," underscoring that interoperability is both a technical and organizational challenge (Syahputri et al., 2024).

Although prior studies have examined Mobile JKN user satisfaction and BPJS claims or interoperability issues as separate topics, few have analyzed BPJS patient services as an end-to-end digital service chain within hospitals, linking front-office processes (patient

arrival/registration), eligibility verification, system interoperability, and administrative outcomes that shape service continuity. This gap underscores the need for context-specific exploration to understand how digital-era challenges manifest in daily BPJS service delivery and what practical solutions are feasible at the facility level. Accordingly, this study investigates the challenges and identifies actionable strategies for BPJS patient services in the digital era at Royal Prima Marelan Hospital, with particular focus on system integration, workflow readiness, and patient experience across key service points.

METHODS

Research Design and Setting

This study employed a qualitative descriptive design using a case study approach to explore the challenges and solutions faced by healthcare workers in delivering BPJS patient services in the digital era at Royal Prima Marelan Hospital. The case study approach was chosen to provide an in-depth understanding of participants' real experiences within the hospital context. The research was conducted at Royal Prima Marelan Hospital, located at Jalan Marelan Raya Pasar II No.187, Medan City, North Sumatra. As a referral facility, the hospital integrates digital-based service systems such as SIMRS, INA-CBGs, and VClaim. Data collection was carried out over four weeks (September–October 2025), allowing sufficient time for iterative data gathering and verification until saturation was achieved.

Participants and Sampling

Participants were selected using purposive sampling, targeting individuals with relevant roles and experience in BPJS digital service implementation. A total of nine informants were involved, consisting of six primary informants (healthcare and administrative staff) and three triangulation informants (BPJS claim officers and patients). The sampling process continued until thematic saturation was reached, indicated by the absence of new themes or insights in the final two interviews. Saturation was confirmed after the ninth interview, when no new codes, subthemes, or categories emerged. To ensure confirmability, member checking was conducted, and findings were discussed with academic supervisors. The data were also cross-checked between interview transcripts, observations, and document reviews to validate consistency.

Data Collection Procedures

Data were collected through semi-structured interviews, non-participant observation, and document review. Interviews lasted 40–60 minutes, were audio-recorded with consent, transcribed verbatim within a maximum of 24 hours, and translated into English with

verification by a bilingual reviewer. Observations spanned approximately 30 hours over 10 working days, covering digital registration, eligibility verification, claims documentation, inter-unit communication, and responses to system disruptions. Notes were recorded in a structured, time-stamped field book. Document review included BPJS service standard operating procedures (SOPs), SIMRS/VClaim logs, monthly claim rejection and evaluation reports, and minutes of BPJS and IT meetings to assess policy practice alignment.

Data Analysis

Data analysis followed Sugiyono's interactive model, which includes data reduction, data presentation, and conclusion drawing with verification. Interview transcripts, observation notes, and documentation were first reduced and summarized according to the research focus. They were then presented in narrative form and grouped into themes to clarify findings. The final stage involved drawing conclusions, which were repeatedly verified through triangulation of sources and methods until consistent results were obtained.

Ethical Considerations

This study received ethical approval from the Research Ethics Committee of Universitas Prima Indonesia (Approval No. UNPRI/ETHICS/1025/2025). All participants were provided with written and verbal explanations regarding the study's purpose, confidentiality, and voluntary nature. Each signed an informed consent form prior to participation. Audio recordings were stored in encrypted folders and deleted once transcript accuracy was verified. Pseudonyms were used throughout reporting to ensure anonymity and protect participant identity.

RESULTS

Characteristics of Research Informants

The study involved a total of nine informants, comprising six primary informants and three triangulation informants. Primary informants included healthcare and administrative staff at Royal Prima Marelan Hospital:

- Physician (42 years, 4 years working experience)
- Head of inpatient ward (27 years, 3 years of experience)
- Pharmacist (34 years, 5 years of experience)
- BPJS registration and verification officer (29 years, 2.5 years of experience)
- Casemix officer (32 years, 4 years of experience)
- Head of BPJS department (34 years, 2 years of experience).

Triangulation informants consisted of:

- BPJS claims and finance staff (28 years, 3 years of experience)

- A BPJS patient (53 years, self-employed)
- A family member of a patient (30 years, merchant).

Demographic Profile

The majority of informants were female, with educational backgrounds in health and management fields. All had relevant working experience in BPJS services, ensuring that their perspectives reflected both administrative and clinical dimensions of digital service delivery.

Process of BPJS Patient Service Implementation

The BPJS patient service process at Royal Prima Marelan Hospital follows a structured digital sequence encompassing registration, verification, medical services, coding, and claim submission. At the registration stage, staff verify BPJS membership through the V-Claim system before issuing the *Surat Eligibilitas Peserta* (SEP)/Eligibility Certificates to direct patients to the appropriate polyclinic.

> "We always start by checking BPJS validity in the system before the patient can get an SEP. If the server is slow, everything gets delayed." *(Informant 4, Registration Officer)*

After registration, patients proceed to the examination room where doctors and nurses provide clinical services and document them electronically through the Hospital Management Information System (SIMRS).

> "All patient data are recorded directly in the SIMRS. We no longer write in books like before." *(Informant 1, Physician)*

Pharmacists receive digital prescriptions through SIMRS, prepare the drugs, and report usage via the VClaim interface.

> "Once the doctor inputs the prescription, it appears automatically in our system. We just confirm and dispense the medicine." *(Informant 3, Pharmacist)*

Next, casemix officers encode diagnoses and medical procedures from digital medical records into the INA-CBGs system for Social Security Administering Body (BPJS) claim submission.

> "After treatment, we enter the diagnosis and action codes into INA-CBGs and coordinate with the doctor if something doesn't match." *(Informant 5, Casemix Officer)*

The Social Security Administering Body (BPJS) service head and finance staff review all submitted claims, ensure data consistency, and monitor payment progress.

> "Before we send the claims, we recheck everything, codes, attachments, and digital signatures so there won't be any rejection." *(Informant 6, Head of BPJS Department)*

From the patient's perspective, the service process was generally perceived as efficient and well-organized, though occasional system slowdowns still caused waiting times.

"Usually, registration is fast, but if the system lags, we just wait longer before getting called." *(Informant 8, BPJS Patient)*

Overall, the hospital's BPJS service flow shows that staff perform their duties through interconnected digital stages, yet still depend heavily on system stability to maintain smooth service delivery.

Challenges Faced by Healthcare Workers

The study identified three main categories of challenges: technical, human resources (HR), and administrative. Technically, network disruptions and instability in applications such as VClaim and INA-CBGs caused delays in patient verification, prescription input, and claim processing. When systems malfunctioned, staff were required to perform dual documentation (manual and digital), which increased patient queues and waiting times. From an HR perspective, healthcare workers reported heavier workloads due to the need to balance clinical responsibilities with digital documentation (Indrayadi & Ariyani, 2023), alongside uneven adaptation to BPJS system updates. A recurring issue was the high patient volume, which further intensified workload pressures (Indrayadi & Ariyani, 2023). Administratively, staff at Royal Prima Marelan Hospital emphasized that these challenges clustered into technical disruptions, human resource constraints, and organizational inefficiencies, all of which undermined service continuity and efficiency.

1) **Technical Disruptions and System Instability**

   Informants consistently described unstable internet networks and downtime or slow performance of VClaim and INA-CBGs as the most frequent barriers, especially during peak service hours.

   "If the network drops, verification stops. Patients keep asking, and we can't proceed until the system is back." *(Informant 4, Registration & Verification Officer)*

   "Sometimes INA-CBGs is slow, so coding and uploading documents take much longer than usual." *(Informant 5, Casemix Officer)*

2) **Increased Workload and Role Overlap**

   Healthcare workers reported a heavier workload because clinical tasks had to run alongside digital documentation, particularly when systems were slow or malfunctioning. This often led to double work and time pressure.

   "When the system is down, we do manual notes first, then input again later. It becomes two jobs for one service." *(Informant 2, Head Nurse/Inpatient Ward)*

   "We still have to serve patients while entering data. If it's busy, it's hard to keep up." *(Informant 1, Physician)*

3) Limited Training and Uneven Digital Skills

Several informants mentioned that not all staff adapt at the same pace to system updates or new procedures, which affected coordination and increased dependence on a few experienced staff.

"Not everyone understands the updates right away. Usually, only certain staff can handle the changes quickly." *(Informant 6, Head of BPJS Department)*

"We learn mostly from experience. Formal training is not always regular." *(Informant 7, Claims & Finance Staff)*

4) Administrative Errors and Data Mismatch

Informants highlighted problems of data inconsistency between SIMRS, V-Claim, and INA-CBGs, resulting in repeated checks, document corrections, and delayed claim processing.

"Sometimes the patient data doesn't match between systems. We must revise and reupload the documents." *(Informant 5, Casemix Officer)*

"If one file is incomplete or mismatched, the claim process is held back and needs correction." *(Informant 7, Claims & Finance Staff)*

5) Patient Complaints During Delays

During system disruptions, staff reported frequent patient dissatisfaction, mainly due to waiting time uncertainty, even when the service process was already explained.

"When the system is slow, patients think we are delaying them. We have to explain again and again." *(Informant 2, Head Nurse/Inpatient Ward)*

"The officers are polite, but when the system is down, the waiting feels too long." *(Informant 9, Patient's Family Member)*

Impact of Challenges on Service Effectiveness

The challenges experienced by healthcare workers directly affected service effectiveness, particularly in terms of service flow, waiting time, claim processing, and staff well-being. Informants reported that when BPJS digital systems were slow or disrupted, registration and verification processes became prolonged, patient queues increased, and subsequent service stages were delayed.

"If verification takes long, the line gets crowded quickly. Patients keep waiting and asking." *(Informant 4, Registration & Verification Officer)*

"When the system is down, the service stops for a while because we can't issue SEP." *(Informant 4, Registration & Verification Officer)*

Delays were also reported in pharmacy services because prescription input and confirmation depended on system stability. As a result, patients sometimes had to wait longer to receive medications.

> "If the system is slow, the prescription appears late, so the medicine service becomes delayed." *(Informant 3, Pharmacist)*
>
> "Patients usually complain when they have to wait for medicine due to system problems." *(Informant 3, Pharmacist)*

In the claim process, informants stated that disruptions and data mismatches caused delayed document completion and slowed claim submission, creating an administrative backlog.

> "If data doesn't match, we have to fix it first. That makes the claim submission late." *(Informant 5, Casemix Officer)*
>
> "When claims are delayed, we must recheck many files, and it increases the workload." *(Informant 7, Claims & Finance Staff)*

Healthcare workers also described impacts on their physical and psychological condition due to repeated double work and time pressure.

> "We get tired because we do manual work first, then input again later." *(Informant 2, Head Nurse/Inpatient Ward)*
>
> "When it's busy, and the system is slow, we feel stressed because patients are waiting." *(Informant 1, Physician)*

From the patient and family perspective, the effectiveness of the service was perceived to decline mainly during downtime, especially because waiting time became uncertain.

> "We understand the staff are trying, but when the system is down, the waiting becomes unclear." *(Informant 8, BPJS Patient)*
>
> "The service is good, but if the system is slow, everything becomes late." *(Informant 9, Patient's Family Member)*.

Solutions Implemented

Healthcare workers and hospital management implemented several practical measures to sustain BPJS services during technical and administrative disruptions. The most frequently reported strategy was the use of manual documentation during system downtime to maintain patient flow, followed by re-entry of the data into the digital system once stability was restored.

> "If the system is down, we still serve patients using manual notes first, so the service doesn't stop." *(Informant 4, Registration & Verification Officer)*
>
> "We write it manually and input it later when the network is normal again." *(Informant 2, Head Nurse/Inpatient Ward)*

To respond faster to disruptions, informants described improved cross-unit coordination, especially between service units, casemix, and IT staff. This coordination helped identify problems and restore services more quickly when the system slowed or failed.

> "If there is a problem, we contact IT immediately so it can be handled quickly." *(Informant 5, Casemix Officer)*
>
> "We coordinate with casemix and IT, so the issue doesn't last too long." *(Informant 6, Head of BPJS Department)*

Several informants also mentioned efforts to strengthen staff readiness through internal refreshment sessions and short trainings, particularly when BPJS' procedures or system updates changed.

> "We hold brief internal training when there is a new policy or system update, so everyone understands." *(Informant 6, Head of BPJS Department)*
>
> "Usually we get guidance from senior staff or small internal sessions to adjust to updates." *(Informant 7, Claims & Finance Staff)*

In pharmacy services, maintaining a buffer stock and improving communication with patients were reported as ways to reduce complaints during delays. Staff emphasized explaining delays proactively to patients and families.

> "We explain to patients if the system is slow, so they don't think we are delaying them." *(Informant 3, Pharmacist)*
>
> "When patients complain, we try to communicate calmly and inform them that the system is being fixed." *(Informant 2, Head Nurse/Inpatient Ward)*

At the managerial level, informants mentioned routine monitoring of service and claims, along with gradual improvements in network capacity and documentation completeness to reduce repeated corrections.

> "We evaluate claim files regularly so the documents are more complete and less likely to be returned." *(Informant 7, Claims & Finance Staff)*
>
> "The hospital keeps trying to improve the network so disruptions don't happen too often." *(Informant 6, Head of BPJS Department)*

The solutions adopted by RSU Royal Prima Marelan are consistent with findings from both domestic and international studies on mitigating Health Information System/Electronic Health Record (HIS/EHR) disruptions. These studies emphasize the importance of structured downtime plans, simulation exercises, and cross-disciplinary teams to ensure rapid response and minimize service disruptions (Jo et al., 2024). In low- and middle-income country contexts, scoping reviews further highlight staff training, interoperability, and recovery

protocols as key interventions to reduce the impact of downtime on patients and claims (Pioch et al., 2024).

DISCUSSION

Process of BPJS Patient Service Provision by Healthcare Workers

The BPJS patient service process at Royal Prima Marelan Hospital illustrates how digital transformation has reshaped healthcare workflows. The integration of VClaim, INA-CBGs, and SIMRS systems has streamlined registration, clinical documentation, and claim submission; however, the process remains fragile due to dependence on network stability, inter-system compatibility, and staff adaptability. From a theoretical perspective, this condition reflects what (Indrayadi & Ariyani, 2023) described as a "transitional digital equilibrium" - a stage in which health institutions have structurally adopted digital systems, but have not yet achieved operational maturity. In this equilibrium, workflow optimization is often hindered by infrastructural limitations and fragmented policy implementation.

Compared with prior studies, similar bottlenecks were observed in hospitals undergoing early digital transitions, where registration and verification initially improved but later slowed due to network overload and coordination gaps (Appi et al., 2024). The present study reinforces these findings by showing that service continuity depends on how effectively hospitals manage digital downtimes and adapt workflows during disruptions. Conceptually, the digitalization of BPJS service requires not only software interoperability but also behavioral alignment among staff. Healthcare workers function as intermediaries between patients and the system, balancing empathy, procedural compliance, and administrative accuracy. This hybrid role demands flexible task management and effective communication, consistent with human – system interaction models that emphasize usability, feedback loops, and error recovery mechanisms (Muksin et al., 2024).

Organizationally, the BPJS service process at Royal Prima Marelan Hospital reflects a functional yet vulnerable digital ecosystem, where structured workflows coexist with systemic inefficiencies. Although the hospital has achieved procedural alignment across units - registration, medical services, pharmacy, casemix, and claims- the continued reliance on manual backup routines indicates that full digital reliability has not yet been realized. Strengthening this process requires a multidimensional approach: enhancing digital literacy, standardizing inter-unit coordination, and ensuring technical redundancy to safeguard service continuity. Consistent with Saragi et al. (2024) , sustainable BPJS service provision depends on integrating clinical, administrative, and IT functions into a coherent operational framework supported by managerial oversight and alignment with national health information policies.

Impact of Challenges on Service Effectiveness

The challenges identified in this study, technical instability, administrative mismatches, and workforce strain, collectively undermine the overall effectiveness of BPJS patient services. These constraints generate delays across service stages, diminish staff efficiency, and ultimately reduce patient satisfaction. Such effects can be explained through the Health Service Efficiency Framework, which posits that performance degradation occurs when human capacity and technological systems operate beyond their optimal coordination threshold (K et al., 2024).

Technically, repeated system downtime and inconsistent data synchronization between VClaim, INA-CBGs, and SIMRS undermine workflow continuity. This finding aligns with Saragi et al. (2024), who noted that limited network reliability and interoperability gaps increase administrative rework and reduce throughput efficiency. The dependence of BPJS service processes on multiple digital platforms without a unified backup or failover mechanism amplifies vulnerability, so even minor disruptions cascade into longer verification queues, delayed medication dispensing, and postponed claim submissions. From the human resource perspective, the compounding effects of dual workload, balancing clinical responsibilities with digital documentation, contribute to fatigue, stress, and reduced motivation. Consistent with observations by Naamneh and Bodas (2024), excessive digital administrative tasks divert cognitive and emotional resources away from patient-centered care. This dynamic reflects role conflict, where healthcare professionals face simultaneous, technical and clinical demands within limited timeframes, diminishing productivity and attentional quality.

Administratively, the inefficiencies observed stem from structural and procedural asymmetries. Unequal digital competence among staff, the absence of standardized downtime protocols, and limited managerial oversight contribute to inconsistent data flow. As Indrayadi and Ariyani (2023) explain, weak digital governance mechanisms create “operational fragmentation,” where information reliability varies across units and over time, directly undermining service quality. In this study, similar patterns emerged in the form of delays in verification and claim processing caused by repeated rechecking and data mismatches, illustrating a systemic coordination gap rather than isolated user error. The implications extend beyond operational speed to perceived service quality. Evidence from digital health environments shows that waiting time and service predictability significantly shape patient trust and satisfaction (Appi et al., 2024). When system failures occur, patients attribute delays to staff performance, eroding confidence even when personnel remain responsive. This finding

suggests that technological limitations indirectly influence patient-provider relationships, highlighting that digital reliability has become a critical dimension of perceived care quality.

The findings suggest that although Royal Prima Marelan Hospital has established an end-to-end digital workflow for BPJS *Kesehatan* patients, service performance remains suboptimal unless digital readiness is managed as an integrated package of infrastructure reliability, workforce capacity, and system interoperability. Recurring system and network downtime, dual documentation requirements, uneven digital skills and training, and cross-platform data mismatches collectively prolong verification and delay claim processing. To address these issues, hospitals and regulators should prioritize (1) resilient network capacity and standardized downtime protocols with clear manual-backup and re-entry procedures, (2) continuous digital literacy and refresher training embedded in routine operations, and (3) enforceable interoperability between hospital information system vendors (SIMRS) and BPJS platforms, supported by tighter cross-unit claims coordination and routine document quality monitoring. All of these measures are essential to safeguard continuity and equity in BPJS service provision across Indonesia.

This study has several limitations. First, it was conducted in a single hospital setting with a relatively small purposive sample, which may limit the transferability of findings to institutions with different organizational structures, patient volumes, infrastructure quality, or levels of digital maturity. Second, although triangulation was employed, the data relied primarily on self-reported experiences, which may be influenced by social desirability, role-based perspectives, and recall bias, particularly when discussing performance constraints linked to digital systems and claims processes. Third, patient and family perspectives were represented by only a small number of informants; therefore, conclusions about patient experience should be interpreted with caution. In addition, the study captured conditions within a specific implementation period (September–October 2025), while BPJS policies and system features may evolve over time, making the findings time-bound. The observation duration, though meaningful, may not fully reflect less frequent but high-impact events such as prolonged downtimes or peak-day surges. Finally, the study did not quantify the magnitude of disruptions (e.g., frequency or duration of downtime, measurable delays in claim submission), limiting causal inference and effect-size estimation. Future research should integrate system logs and service performance indicators to provide more robust evidence.

CONCLUSIONS

This qualitative case study shows that BPJS *Kesehatan* patient services at Royal Prima Marelan Hospital are delivered through an established digital workflow using V-Claim,

SIMRS, and INA CBGs, covering registration and verification, clinical documentation, pharmacy services, coding, and claim submission. Despite this structured process, service effectiveness remains constrained by recurring challenges, including system and network instability, dual workloads from manual-digital documentation, uneven digital skills and limited training, and cross-platform data mismatches that delay verification and claim processing. To maintain continuity, adaptive measures have been implemented, such as manual backup recording during downtime, faster coordination with IT and casemix teams, internal refresher training, proactive communication with patients, and routine document monitoring.

This study is limited by its single-site design and the small number of informants, which may restrict the transferability of findings to hospitals with different digital capacities and organizational structures. Nevertheless, the results carry important implications for policy and practice, particularly the need to strengthen workforce digital literacy through continuous training, establish standardized national downtime protocols to ensure service continuity during system disruptions, enforce mandatory interoperability between SIMRS vendors and BPJS systems to reduce data mismatches and administrative rework. Overall, strengthening digital infrastructure, human capacity, and system interoperability is essential to ensure equitable, efficient, and sustainable BPJS patient services across Indonesian hospitals.

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