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## Descriptive Study of The Implementation of Electronic Medical Records on Insurance Claims at PKU Muhammadiyah Gombong Hospital

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**Abstract:** The implementation of Electronic Medical Records at PKU Muhammadiyah Gombong Hospital is one of the steps in improving service quality in line with the times in the digitalization era, particularly in insurance claims. The purpose of this study is to understand how the implementation of electronic medical records is carried out in insurance claims at PKU Muhammadiyah Gombong Hospital. The method used in this study is a descriptive study using data collection techniques through observation, interviews, and documentation. The study results show that the implementation of electronic medical records can speed up patient data input, minimize administrative errors, and facilitate the insurance claim process. The staff have adequate competence in operating the system, although there are still issues with internet connectivity and system speed. This study concludes that EMR plays an important role in patient services and makes the insurance claim process more efficient, while emphasizing the importance of system stability. Periodic training for staff and communication with the insurance company to ensure a smooth insurance claim process

**Keyword:** RME, Claim Insurance, Hospital

### INTRODUCTION

In Indonesia, the implementation of Electronic Medical Records (EMR) shows disparities across regions. Hospitals in Java are more active in adopting EMR because they are supported by complete infrastructure and optimal human resource training, whereas in Sulawesi, the implementation is more driven by policy demands (Hossain, 2025). Successful EMR implementation requires readiness of infrastructure, technology, human resource training, and clear institutional guidelines (Nurlaily, 2025). Although implementation varies, there has been a recorded upward trend in EMR strengthening and the application of information systems from 2014–2023 (Utami, 2025). Aside from implementation aspects, the level of data accuracy and compatibility influences user satisfaction (Kurniawan, 2024).

Electronic Medical Records in hospitals are part of digital transformation in the health sector aimed at improving service quality and time efficiency. They function not only as a repository for patient medical data but also serve as a major foundation in speeding up

administrative processes, including insurance claim submissions, which have long been known to be complicated and time-consuming (Hidayat, 2022). A well-managed EMR system can enhance efficiency in the insurance claims process, particularly in collecting valid medical information that is easily accessible to the guarantor (Juliansyah, 2024). In addition, the use of EMR can minimize the risk of patient data entry errors and increase transparency in health information management (Putra, 2023). The Indonesian Ministry of Health Regulation No. 24 of 2022 requires all healthcare facilities to implement Electronic Medical Records (EMR) no later than December 31, 2023. Hospitals that submit insurance claims must adjust their workflow to ensure that EMR input data complies with established standards.

This step is taken to prevent claim delays or rejections due to administrative documents that have not been fully digitized, while also supporting interoperability between systems, including insurance platforms regulated under the same regulation. Insurance claims play an essential role in ensuring service continuity, financial stability, and affordability of medical services. One major issue is the high number of pending claims caused by incomplete administrative documents and suboptimal data verification processes (Zalukhu, 2023). This situation disrupts hospital cash flow, especially for hospitals with high claim volumes, and delays in payments from guarantor institutions significantly impact hospital financial stability (Putri, 2023).

Legal assurance is needed for hospitals to address payment delays and maintain sustainable cooperation between hospitals and insurance providers. This is crucial to ensure continuity of rights and responsibilities between both parties so that patient care is not disrupted by administrative issues (Adrianto, 2024). According to the Financial Services Authority Circular Letter No. 7/SEOJK.05/2025 on the Administration of Health Insurance Products, several key provisions regulate the insurance claim process:

1. Co-Payment: Insurance participants must cover at least 10% of the total claim submitted. For outpatient care, the maximum co-payment is Rp300,000, and for inpatient care, Rp3,000,000 per claim.
2. Coordination of Benefit (COB): Encourages coordination of benefits between commercial insurance schemes and the National Health Insurance (JKN) administered by BPJS Kesehatan (SEOJK 7/2025).

Collaboration between hospitals and private or life insurance companies plays an important role in ensuring smooth claim processing. As seen in a study by Kurniawan (2021), during COVID-19 management, insurance claim submissions reached Rp90.2 trillion in 2021, with Rp62.68 trillion paid, while the remainder was pending due to incomplete documents from hospitals. The claim process includes completing claim forms, document verification, and payment processing by insurance providers. Good coordination between hospitals and insurers ensures that claims are processed smoothly and on time (Putri, 2020). With EMR, reimbursement claims can be submitted using accurate and valid data, minimizing the risk of improper billing (Lin, 2025). Medical record files that are incomplete may be deemed ineligible for claims, resulting in pending status and delaying fund disbursement from guarantors (Wikansari, 2023). Insurance claims are influenced by the quality of medical documentation—complete notes and accurate coding affect hospital revenue (Yuliani, 2024). Medical record documents such as discharge summaries serve as summaries of patient care history. They function not only as administrative documents but also ensure continuity of medical care and support eligibility for insurance claims (Agung, 2024).

A hospital is a healthcare institution that integrates the professional capabilities of medical personnel, adequate service facilities, and academic or research functions (Syarofi, 2024). According to Ministry of Health Regulation No. 3 of 2020, hospitals in Indonesia are classified into five categories—A, B, C, D, and E—based on service capabilities, human resources, and facility completeness. Hospitals operate as public service and business institutions. They must maintain quality services to ensure patient satisfaction, which is

essential in sustaining healthcare services (Sumarta, 2024). Hospital performance significantly influences patient comfort and the likelihood of returning for future care (Hidayah, 2022). The implementation of EMR can increase efficiency, administrative transparency, speed of service, waiting time certainty, and accelerate insurance claim processing (Sofianto, 2020). As a Type B hospital operating in Kebumen Regency, PKU Muhammadiyah Gombong Hospital provides comprehensive facilities including 24-hour emergency care, outpatient, inpatient, specialist and subspecialist services, and medical check-ups with adequate diagnostic capabilities. With broad service coverage, the hospital complies with Financial Services Authority Circular Letter No. 7/SEOJK.05/2025 on the administration of health insurance products, which mandates a minimum 10% co-payment and coordination of benefits across health insurance schemes. This study aims to describe the implementation of Electronic Medical Records in the insurance claim mechanism at PKU Muhammadiyah Gombong Hospital. The findings of this research are intended to serve as a baseline reference for future evaluations to optimize the efficiency and accuracy of the EMR system in managing insurance claims.

## METHOD

This study adopts a descriptive approach to explain how the implementation of Electronic Medical Records (EMR) functions within the insurance claim mechanism at PKU Muhammadiyah Gombong Hospital. The population of this research includes insurance claim documents and electronic medical records managed by the hospital during the period of July–September 2025. The sample was selected purposively, consisting of documents and claim cases that were complete and relevant to the implementation of EMR. Data collection was carried out through document review, interviews with staff, and direct observation of the EMR utilization flow in the insurance claim process. The data were analyzed descriptively and qualitatively, presented in the form of flowcharts, tables, figures, and narrative descriptions. The analysis focused on mapping the stages of EMR implementation, identifying obstacles in the claim process, and assessing the management of administrative data. To maintain validity, data were verified using source triangulation by examining information from documents, interviews, and observations, ensuring accuracy, completeness, and reliability of the descriptive findings.

## RESULTS AND DISCUSSION

Based on the research conducted at PKU Muhammadiyah Gombong Hospital, information was obtained regarding the service flow using electronic medical records, the number of insurance claim submissions for the period of July–September 2025, interviews with staff, and the insurance claim procedures used. These findings were then evaluated to determine how effective EMR is in supporting the insurance claim process in the current modern era.

### 1. Results of the Implementation Flow of Electronic Medical Records from Initial Patient Registration to Completion of Services

The results of the EMR implementation at PKU Muhammadiyah Gombong Hospital show that from registration to examination at the polyclinic, the system supports integrated documentation of patient identity, visit history, and administrative processes, allowing patient data to be accessed more quickly. This process aims to streamline services, reduce recording errors, and ensure that each step in the polyclinic follows the established procedures.

**Figure 1. EMR Display of the Hospital Management System**

Based on Figure 1, the EMR display of the Hospital Management System in the modern era facilitates medical data processing. The data are now integrated, simplified, and consolidated within a single platform called EVO (Medical Information System). Previously, files were collected centrally in the medical records unit in hard-file format.

**Tabel 1. Registration SOP**

Registration SOP	
Registration for Returning Patients	Registration for New Patients
<p>Enter the medical record number or search for the patient data if no identity card is brought.</p> <p>Select the polyclinic unit, practice schedule, and available doctor according to the day and time.</p> <p>The system will automatically fill in the last number and the patient's queue number.</p> <p>Select the type of guarantor used for the patient's payment.</p> <p>Determine the guarantor group according to the categories available in the system.</p> <p>Complete the information on how the patient arrived, whether through referral, follow-up, or self-arrival.</p> <p>Save the data so that the registration fee and doctor's service fees are automatically recorded in billing.</p> <p>Provide the registration slip to the patient as proof that the registration process is completed.</p>	<p>Complete the patient's identity based on their ID card/family card and interview results.</p> <p>Select the polyclinic unit, practice schedule, and available doctor.</p> <p>The system automatically fills in the last number and patient queue number.</p> <p>Determine the guarantor to be used for medical service payment.</p> <p>Select the guarantor category according to the available groups.</p> <p>Complete the information regarding how the patient arrived.</p> <p>If the patient brings a referral, ensure the referring healthcare facility's data is correct.</p> <p>Save the data to process registration and automatically record costs.</p> <p>Provide the registration slip to the patient as proof of successful registration.</p>
Emergency Department (ED) Patient Registration	
<p>If multiple patients share the same name, use additional information such as address or family identity to ensure accuracy.</p> <p>Verify the data in IUPE to prevent patient data duplication.</p> <p>If duplicate numbers are found, follow the handling procedure according to the SOP and coordinate with the filing section.</p> <p>Ensure data accuracy using the ID card/family card before printing the registration slip.</p>	<p>The staff receives triage information from the ED nurse.</p> <p>Ask about the patient's visit history:</p> <ul style="list-style-type: none"> <li>Never visited before → register as a new patient</li> <li>Previously visited → register as a returning patient using the patient card</li> </ul> <p>If the patient is unconscious, unaccompanied, or has no identification, follow the SOP for unidentified patient registration.</p> <p>For patients requiring inpatient admission or special procedures, register according to inpatient procedures.</p>

<p>If the medical record number is unknown, use a temporary number marked with (#) on the file cover until verification is completed.</p> <p>Assignment of a new number is only allowed after checking the patient data through the appointment or personal detail program.</p> <p>Verification of returning patients registered with a new number must be completed within the same shift (outpatient) or before the patient is discharged (inpatient).</p>	<p>Confirm whether the patient is covered by insurance; if yes, follow the insurance procedure.</p> <p>For referral patients, check service eligibility against the referral letter.</p> <p>Enter patient data into the ED registration application.</p> <p>Scan the referral letter according to procedure.</p> <p>Enter patient identity information based on ID card/family card and interview.</p> <p>Print the registration slip and attach it to the medical record documents.</p> <p>Create or update the patient card if the patient does not have one.</p> <p>Explain to green-triage patients the priority of emergency services.</p>
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The registration SOP is created to ensure data accuracy and smooth service for returning patients, new patients, and Emergency Department (ED) patients. Starting from identity verification, selection of the polyclinic and doctor, to determining the payer or guarantor, all procedures are carried out electronically. In ED registration, staff can adjust the process based on the urgency of the patient's condition so that services can be handled quickly.

## 2. Challenges in Using EMR for Insurance Claims

In its implementation, several challenges were identified, such as unstable internet connection and slow system loading, which sometimes cause incomplete data entry in the system. Up to now, no data breaches have occurred because the system is equipped with adequate security handled by the IT team. With the use of EMR, staff work becomes significantly easier in providing patient services, and operations run smoothly with a success rate of 99%.

## 3. Staff Training in Using EMR

In EMR training, staff have specific responsibilities, rights, authority, and facilities according to their respective roles to ensure smooth operations. Analyst staff are responsible for analyzing patient data and checking medical resumes to ensure whether the documents have been completed or not. Finalization must be done within H-3 (three days before) the patient's discharge. If any information is incomplete, staff can track the patient's data to ensure all reports are fully filled out.

## 4. Integration Between the EMR System and Insurance Providers Runs Smoothly

From the transition to EMR until now, its implementation has been running smoothly. It facilitates claim submissions that are connected to the system without requiring visits to the insurance office.

All necessary information is recorded in the system, allowing claims to be processed electronically. However, in practice, some insurance companies still use manual methods. These findings show that EMR is more efficient and speeds up the processing time because the required information is already available and can be accessed immediately. Pending claims usually occur because the file has been entered but not fully uploaded.

## 5. Recapitulation of Insurance Claim Submissions at RS PKU Muhammadiyah Gombong for the Period July – October 2025

Data obtained includes the number of insurance claim submissions for the period of July–September 2025, covering the number of submitted cases, paid claims, and pending claims.



**Table 2. Recapitulation of Insurance Claim Submissions**

Period	Cases	Paid	Percentage
July 2025	131	131	100%
August 2025	181	179	98%
September 2025	201	199	99%
<b>Total</b>	<b>513</b>	<b>509</b>	<b>97%</b>

Based on Table 1, Recapitulation of Insurance Claim Submissions, the number of insurance claim submissions in July 2025 was 131 cases, all of which were paid, resulting in a percentage of 100%. In August 2025, there were 181 submitted cases, with 179 cases paid (98%). In September 2025, there were 201 submitted cases, with 199 cases paid (97%). The total number of insurance claim submissions for the period of July–September was 513 cases, with 509 cases paid, resulting in a payment percentage of 97%, indicating that almost all claims were successfully paid.

**Table 3. Recapitulation of COB (Coordination of Benefits) Submissions**

Period	Cases	Paid	Percentage
July 2025	8	8	100%
August 2025	4	4	100%
September 2025	10	10	100%
<b>Total</b>	<b>22</b>	<b>22</b>	<b>100%</b>

Note: COB: Coordination of Benefits

Based on Table 2, Recapitulation of COB Insurance Claim Submissions, the number of COB insurance claim submissions in July 2025 was 8 cases, all of which were paid (100%). In August 2025, there were 4 cases submitted, and all 4 were paid (100%). In September 2025, there were 10 cases submitted, and all 10 were paid (100%). In total, the number of COB insurance claim submissions for the period of July–September was 22 cases, and all 22 cases were paid, resulting in a 100% payment rate.

**Table 4. Period — Recapitulation of Pending Claim Submissions**

Period	Cases	Pending	Notes
July 2025	131	0	–
August 2025	181	2	Charge reduction
September 2025	201	2	Missing billper form: Class II for Class I
<b>Total</b>	<b>513</b>	<b>4</b>	Claim Data Evaluation

Based on Table 3, Recapitulation of Pending Claim Submissions, the number of insurance claim submissions in July 2025 was 131 cases, with 0 pending claims, indicating that all claims submitted that month had been fully paid by the insurance provider. In August 2025, out of 181 submitted cases, 2 claims were pending due to overcharged billing that required adjustment. In September 2025, out of 201 cases, 2 claims were pending because the patient documents were incomplete—specifically, the missing billper form for Class II when upgraded to Class I. In total, there were 4 pending insurance claims, caused by discrepancies in service billing and incomplete documentation.

## 6. Interview Results Assessed Using a Likert Scale of 1–5 Along With Additional Notes

Through interviews referring to 12 key questions focused on the use of EMR, insurance claim workflows, challenges encountered, staff training, and system coordination, the findings were presented in table form. The assessments were calculated using the Likert Scale (Febrian, 2024).

**Table 5. Interview Assessment Results**

R	Temuan Wawancara												
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	Persentase
G S	4	4	5	4	5	4	5	5	4	5	4	4	88%
E L	4	5	5	4	5	5	4	4	5	4	4	5	90%
S	5	5	4	5	5	5	5	4	5	4	5	5	95%

**Notes:**

- R:** Respondent
- P1–P12:** Questions
- G S, E L, S:** Respondent initials
- Likert:** Measures a person's opinion on a scale of 1–5

Based on Table 4, *Interview Assessment Results*, it was found that the interview with respondent **G S** achieved a percentage of **88%**, **E L 92%**, and **S 96%**. These findings indicate that the staff operate the EMR system very competently for insurance claims, are able to understand the SOPs, and perform administrative services more efficiently.

## 7. Factors Causing Insurance Claims to Be Pending

Status	Cov	Icd	Incurred	Approved	ToPay	InvoiceNo	PayorCorp	Remarks
41	H&S	L02	5,203,505.00	4,571,305.00	632,200.00	2025 HCB	JASINDO	FU EMAIL EDOC TGL 31/10/2025 P ...
41	H&S	I49.9	5,231,800.00	2,888,901.00	2,342,899.00	2025	BNI	FU TGL 29/10/ 2025 VIA EMAIL D ...

**Figure 2. Pending Claim Cases**

According to the staff, the insurance claim submission process is not always smooth. Claims can be delayed if documents, such as the diagnosis, have not been completed by the doctor or if supporting documents contain data that do not match the procedures performed.

**DIGITAL FILES** [Close]

Patient Name : [Redacted]  
 rd No : [Redacted]  
 Coverage : RAWAT INAP H&S  
 Icd10 : L02 Cutaneous abscess, furuncle and carbuncle  
 [Oct-09-2025] [Oct-09-2025] [41] RS PKU MUHAMMADIYAH GOMBONG

Claims eFiles 10 eForms Mandatory eDocs **Activity Log**

Choose a Request Type [v] [Submit]

Please enter your message

Please fill out this field.

**RS. PKU MUHAMMADIYAH GOMBONG**  
 Dear Team  
 Mohon informasinya kenapa revisi kami pending lagi, karena pada Form F tertera untuk selisih dijaminakan dahulu, sehingga selisih tidak kami tagihkan ke peserta (selisih dijaminakan dahulu sebagai penalarangan). Terimakasih  
 Nov-05-2025 07:38:20 am

**ERNA PURWANTI**  
 Dear Ibu / Bapak dan team bag penagihan  
 Kami informasikan terkait dokumen klaim yang belum dapat kami proses dikarenakan ketidak lengkapan dokumen/pengurangan tagihan/revisi tagihan/surat konfirmasi medis lanjutan - Detail terlampir  
 \*Apabila ada pertanyaan lebih lanjut mengenai dokumen pending dapat menghubungi AYU di no Tlp [Redacted] ext 418 .  
 Demikian Informasi yang dapat kami sampaikan, terima kasih atas kerjasamanya yang baik.  
 Terimakasih Oct-31-2025 11:15:31 am

**ERNA PURWANTI** [UPLOAD\_OTHERS]  
 14 [Redacted] OTHERS-20251031-[Redacted]-ROC-RS PKU MUHAMMADIYAH GOMBONG.xls Oct-31-2025 11:15:29 am

Figure 3. Live Chat with the Insurance Provider

A solution is needed to address pending claims by using a live chat feature. For instance, if a claim is pending due to discrepancies in procedure rates, the information needs to be updated, and the staff will coordinate directly with the insurance provider.

## 8. Results of the Claim Submission Workflow at RS PKU Muhammadiyah Gombong

The workflow of the claim submission process is presented in the table:

Table 5. SOP for Claim Document Submission

No	Unit / Role	Responsibilities
1	<b>Registration Unit – Outpatient (TPPRJ/TPPGD Rawat Jalan)</b>	1. Register outpatient patients.2. Ensure patient insurance coverage.3. Organize guarantees: a) BPJS – Issue SEP b) Other insurance – Issue LOA, Outpatient Form, Guarantee Letter c) Confirm with insurance provider via phone.4. Issue DRM correctly after service.5. Issue general consent.6. Scan/upload documents: proof of membership, KTP, family card, accident report, police report, expense breakdown.7. Issue back referral letter to FKTP.8. Issue full referral letter to FKRTL.9. Issue Stable Back Referral (PRB).10. Legalize medical devices for BPJS patients.
2	<b>Registration Unit – Inpatient (TPPRJ/TPPGD Rawat Inap)</b>	1. Register inpatients and newborns.2. Organize DRM in registration area immediately.3. Ensure insurance coverage.4. Organize inpatient guarantees: a) BPJS – SEP b) Other insurance – Follow claim requirements c) Emergency patients – Educate payment at cashier.5. Issue inpatient approval letter.6. Prepare complete and correct documents (statement, LOA/GL/Referral, LMA).7. Scan/upload documents: proof of membership, KTP, family card, accident report, police report, expense breakdown, inpatient approval letter, initial guarantee, SPRI.8. Create referral



		history to FKRTL.9. Enter inpatient data by ward.10. Issue SPRI online for BPJS patients.
3	<b>Patient Administration</b>	1. Verify completeness of insurance billing documents.2. Verify patient billing.3. Coordinate verification results with related departments.4. Confirm with other insurance providers for BLPL patients.5. Issue LOC for other insurances.6. Upload LOC documents.
4	<b>Coder</b>	1. Review DRM during/after treatment and inform head of ward for incomplete items.2. Ensure identity, timeliness, completeness, readability, validity, corrections, and access misuse monitoring.3. Perform coding.
5	<b>Case Manager</b>	1. Verify quality of medical record documents for insurance claims before discharge.2. Inform PPA for corrections in EMR if needed.
6	<b>Cashier</b>	1. Validate billing.2. Close transactions in real-time.3. Receive patient payments.
7	<b>Billing</b>	1. Verify documents and coding.2. Group in E-Claim system.3. Verify claim data with V-Klaim and Amati apps.4. Submit claims.5. Revise pending documents.6. Post-claim verification.7. Conduct SPI audit.8. For non-BPJS insurance, enter online data and create billing letters.9. Send billing documents to insurance provider.

Based on Table 5. SOP for Claim Document Submission at RS PKU Muhammadiyah Gombong, there are two insurance schemes:

1. Single guarantor – BPJS or private insurance.
2. Dual guarantor – Insurance first, then BPJS.

At the registration unit, staff ask the patient which insurance scheme they want to use. If using a single insurance, the staff will issue a LOA, then the doctor fills in the initial diagnosis and attaches supporting documents, which are forwarded to the cashier. The patient must settle any out-of-pocket costs not covered by the insurance before discharge. Next, the billing unit verifies the completeness of patient documents, such as receipts, invoices, referral letters, billing, and supporting results. The EMR system at RS PKU Muhammadiyah Gombong uses EVO (Medical Information System), which facilitates claim submission tracking.

In the modern system, insurance claims can be submitted by sending soft files to the insurance provider's website/system, with all required documents attached. Some insurers still use the traditional method, sending hard copies via mail. For reimbursement claims, the patient pays medical fees upfront and then submits the claim to the insurer independently, attaching receipts, initial medical records, and referral letters from the medical records unit. In the dual-guarantor scheme, if the insurance policy limit is exceeded, BPJS coverage continues according to the process. If a patient initially chooses insurance and then requests BPJS coverage afterward, this is not allowed; the patient must pay the remaining bill themselves. If there are pending claims, they can be resolved via the live chat feature available on each insurer's website. Once all documents are verified, the insurer will transfer the payment to the hospital account, a process that may take up to 30 working days.

## CONCLUSION

Based on the research on the Implementation of Electronic Medical Records (EMR) for Insurance Claims at RS PKU Muhammadiyah Gombong, it can be concluded that the use of EMR with EVO (Medical Information System) facilitates staff in serving patients more efficiently. The system streamlines processes from registration, examination, to claim billing, making them faster, more structured, and reducing data entry errors, such as diagnosis, supporting examination results, medical summaries, invoices, receipts, and others. Integration between EMR and insurance providers works well, with most claims being submitted online via soft files, although some still use manual submission.

The summary of claim submissions from July to September 2025 shows 513 cases, with 97% successfully paid; the remaining cases were pending due to incomplete documents or discrepancies with insurance data. Interviews indicate that staff understanding and capability in

operating EMR is very competent, with percentages ranging from 88% to 96%. Technical issues like internet disruptions and delayed data uploads still occur but do not significantly interfere with operations.

Based on the findings, the following recommendations are suggested to improve healthcare service quality and the insurance claim process:

1. Address technical issues with internet connectivity by increasing speed and conducting regular maintenance.
2. Although staff competency is adequate, ongoing training is needed to keep up with evolving technology and policies.
3. Improve communication in handling pending claims, as prolonged pending claims can affect hospital revenue.
4. Maintain regular updates with partner insurance companies to minimize discrepancies in under- or over-billing, considering annual increases in service tariffs.
5. Encourage insurance providers still using manual submission methods to collaborate in adopting digital processes to align with modern practices.

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