Performance Evaluation of Internal Verifier in Reducing Pending Inpatient Claims of BPJS Kesehatan at Muhammadiyah Hospital North Sumatra 2022

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Abstract

This study evaluates the effectiveness of internal verifiers at Muhammadiyah Hospital North Sumatra in minimizing delayed inpatient claims submitted to BPJS Kesehatan, Indonesia's national health insurance agency. A mixed-methods sequential explanatory design was employed, combining quantitative data from 2020 (prior to verifier recruitment) and 2022 (post-recruitment) with qualitative insights from interviews with internal verifiers, coders, and other stakeholders, as well as a review of claim files processed by the hospital's BPJS Unit. Interview protocols were adapted from a 2018 study at Koja Hospital, North Jakarta, and data were analyzed using the Miles and Huberman approach, with findings integrated across methods. Source triangulation ensured validity and reliability. Results showed that internal verifiers significantly reduced the proportion of delayed claims despite an overall increase in submissions, with the highest rate of pending claims dropping from 25.6% in 2020 to 17.9% in 2022. Of the 2022 delays, 31.2% were due to BPJS Kesehatan system errors or confirmation processes, indicating that only two-thirds stemmed from hospital-related issues. Qualitative analysis identified key contributors to delays, including diagnostic coding errors, inconsistent understanding among BPJS verifiers, incomplete documentation, limited staff knowledge, and human resource inaccuracies. The presence of internal verifiers improved claim management and hospital revenue by increasing eligibility and accelerating approvals. To further optimize claim processing, strategies such as enhancing coding accuracy, improving staff competency, ensuring documentation completeness, and adopting electronic systems with supportive incentives are recommended.

Keyword: Internal verifier, pending claims, performance

INTRODUCTION

Under Indonesia's National Health Insurance scheme (Jaminan Kesehatan Nasional, JKN), administered by BPJS Kesehatan (Indonesia's national health insurance agency), services provided by Advanced Referral Health Facilities (Fasilitas Kesehatan Rujukan Tingkat Lanjut, FKRTL) are reimbursed based on INA-CBGs rates, as outlined in Ministry of Health Regulation No. 3 of 2023 (Kementerian Kesehatan RI, 2023). This regulatory framework emphasizes that claim payments rely on accurate administrative procedures and complete clinical documentation. Despite these standards, many claim files are returned as pending, primarily due to incomplete medical records and inaccurate diagnosis or procedure coding, as reported by Airlangga University Hospital and Dr. Soedirman Kebumen Regional General Hospital (Maulida & Djunawan, 2022). Recent data from Dr. Moewardi Regional General Hospital also illustrates the scale of the issue, with 4,878 pending files, representing

approximately 16.3 percent of inpatient submissions, which created additional workload for the casemix unit to revise and resubmit claims (Utami et al., 2024). The claims process involves internal verifiers who assess the completeness and accuracy of coding prior to validation and electronic submission through the V-Claim system, highlighting their critical role in preventing delays (Taslim et al., 2024). At the national level, given the large participant population, the efficiency of the claims process is essential for sustaining hospital operations and maintaining financial stability, as emphasized in the JKN Statistics Book for 2016 to 2021 published by the National Social Security Council (DJSN) and BPJS Kesehatan (DJSN, 2022).

Recent studies consistently report that pending inpatient claims under the JKN scheme are primarily caused by incomplete medical records and inaccurate ICD-10 or ICD-9-CM coding. The proportion of pending files varies across healthcare facilities, such as the 12 percent of inpatient claims submitted in December 2021 at Universitas Airlangga Hospital and recurring coding and administrative deficiencies observed at RSUD Dr. Soedirman Kebumen (Maulida & Djunawan, 2022). At RSUD Dr. Moewardi, the transition to an electronic medical record system did not fully resolve the issue. In 2023, a total of 4,878 inpatient claim files submitted to BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia's national health insurance agency, representing 16.29 percent of submissions, were recorded as pending (Utami et al., 2024). Analytical studies focusing on diagnostic completeness and coding accuracy indicate that frequent causes of pending status include errors in identifying the principal diagnosis and misclassification of diagnostic codes (Oktamianiza et al., 2024). Evaluations of the claims process highlight the gatekeeping function of

internal verifiers, who conduct clinical and coding checks prior to submission, thereby reducing the need for rework and minimizing delays (Nasution et al., 2023). However, these findings are largely context-specific, as most existing studies are based on single-site evaluations conducted outside RSU Muhammadiyah North Sumatra. To date, no publicly available performance assessment has been conducted for this hospital's internal verifiers during the 2022 service year, which forms the central focus of the present study (Maulida & Djunawan, 2022).

Operationally, incomplete clinical documentation and inaccurate ICD coding contribute to file returns, resulting in pending status and repeated submission cycles. These issues lengthen processing time and increase administrative burdens for casemix and coding teams (Zahra et al., 2024). Financially, pending claims delay reimbursement and disrupt hospital cash flow, a pattern consistently observed in both systematic and single-site analyses conducted in Indonesia (Sari & Hidayat, 2023). As the volume of pending claims increases, hospitals face

additional workload and longer turnaround times, as files must be corrected, verified with clinical units, and resubmitted (Utami et al., 2024). In contrast, pre-submission clinical and coding checks conducted by internal verifiers, supported by clear standard operating procedures and targeted training, serve as a gatekeeping mechanism that reduces rework and lowers the likelihood of pending claims (Taslim et al., 2024). Given the national scale of JKN participation, healthcare facilities with a high BPJS Kesehatan case mix are particularly vulnerable to these financial and operational consequences. This context reinforces the importance of evaluating internal verifier performance at RSU Muhammadiyah North Sumatra during the 2022 service year (DJSN, 2022).

Field observations at Muhammadiyah Hospital in North Sumatra indicate that patient visits are predominantly composed of BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia's national health insurance agency, participants, with the highest claim volume originating from inpatient services. When claim files are returned as pending due to incomplete documentation, administrative ineligibility, or inaccurate diagnosis or procedure coding, the hospital's cash flow is disrupted and the claim processing cycle is extended. Within the operational workflow, the Case-Mix Unit assigns internal verifiers to serve as quality control gatekeepers prior to claim submission. However, since the implementation of the JKN scheme at this facility, no formal assessment has been conducted to evaluate the effectiveness or measurable performance of this role in reducing pending claims. Accordingly, this study aims to assess the performance of internal verifiers in minimizing pending inpatient claims submitted to BPJS Kesehatan at Muhammadiyah Hospital North Sumatra during the 2022 service year. The findings are intended to inform improvements in the verification process and strengthen claim management practices in similar Advanced Referral Health Facilities (FKRTLs).

METHODS

This study employed a mixed-methods approach using Creswell's explanatory sequential design, which begins with the collection and analysis of quantitative data, followed by qualitative inquiry that builds upon the quantitative findings. The quantitative phase assessed claims management performance before and after the introduction of internal verifiers by collecting all submitted inpatient claim files and pending claim files across two periods: January to December 2020 (prior to the introduction of internal verifiers) and January to December 2022 (approximately six months after their implementation). The study was conducted between March and April 2025 at the Social Security Administering Agency, BPJS

Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia's national health insurance agency, and the Casemix Unit of Muhammadiyah Hospital in North Sumatra, Medan. The quantitative population comprised all claim submission minutes and pending claim files from both periods, using a total sampling technique. The qualitative component involved in-depth purposive interviews with coders and internal verifier physicians responsible for coding, grouping Indonesian Case-Based Groups (INA-CBGs), and verifying the completeness of claim documentation. Quantitative data collection was conducted through the extraction of routine hospital records, including the number of pending inpatient claims, the nominal value of those claims, and the total number of inpatient claims submitted each month in 2020 and 2022. Qualitative data was obtained through in-depth interviews and document reviews of pending claim files to identify contributing factors, such as coding errors, missing administrative documents specific to claims, and limited understanding of updated BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia's national health insurance agency, regulations. Data collection instruments included secondary data extraction forms, which covered hospital profiles, claim submission minutes, and pending claim files, as well as interview guidelines adapted from previous research and tailored to the context of this hospital. Validity was enhanced through source triangulation by comparing file data, coder interviews, and internal verifier perspectives, along with brief member checks conducted with key informants. Quantitative analysis employed a descriptive comparative approach, calculating the monthly percentage of pending claims and comparing trends between 2020 and 2022. Qualitative analysis followed the Miles and Huberman model, which includes data reduction, data presentation, and conclusion drawing, to generate explanatory themes related to process barriers and potential improvements.

The main variables measured in this study included the number of pending claims, the nominal value of pending claims, the percentage of pending claims relative to total claims, the types of coding errors, the absence of administrative documents specific to claims, and the level of understanding of updated BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia's national health insurance agency, regulations. Ethical considerations were addressed through formal approval from hospital management, the provision of information and informed consent to all participants, and the anonymization of identities and protection of data confidentiality.

RESULTS

The study was conducted at the BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia's national health insurance agency, and the Casemix Unit of Muhammadiyah Hospital in North Sumatra. Data were collected from pending inpatient claims submitted to BPJS Kesehatan in 2020 and 2022, alongside interviews with selected informants. These informants were individuals responsible for the verification, coding, and submission of inpatient claims, as well as the resolution of pending claims at the BPJS Kesehatan Unit of Muhammadiyah Hospital in North Sumatra. They were considered to have substantial knowledge of the factors contributing to pending inpatient claims and the role of internal verifier physicians in reducing their occurrence at the hospital. The following section presents the list of informants selected for this study.

Table 1. Research Informants

Position	Education	Length of Work History According to Field of Position
Internal Verification Doctor	General Practitioner Profession	7 years
Coder	General Practitioner Profession	7 years
Coder	D3 Medical Records	2 years 7 months

The entire process of submitting inpatient service claims is managed by the Case-Mix Unit of Muhammadiyah Hospital in North Sumatra. In 2021, the hospital appointed an internal verification doctor to help ensure timely claim submissions to BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia's national health insurance agency, and to reduce the number of pending claims. Table 1 presents the informants involved in this study, while the following section outlines the data on pending inpatient claims at Muhammadiyah Hospital in 2020 and 2022.

Table 2. Pending Inpatient Claims Submitted to BPJS Kesehatan

Service Month	Year of Service 2020		Year of Service 2022	
	Σ Inpatient Claims	Σ Pending Claims	Σ Inpatient Claims	Σ Pending Claims
January	116	16	145	26
February	129	33	136	22
March	150	24	93	7
April	85	12	144	21
May	69	7	151	18
June	107	22	241	21
July	117	20	268	18
August	102	8	331	30
September	91	18	375	21
October	87	21	422	29
November	80	8	347	13
December	83	8	389	30

**Source: Pending Claim Verification Result ,Muhammadiyah Hospital North Sumatra, (2025)*

Table 3. Percentage of Pending Inpatient Claims Submitted to BPJS Kesehatan

Service Month	Pending Claim Nominal Percentage	
	Year 2020	Year 2022
January	16.8%	21.6%
February	32.6%	19.1%
March	19.0%	10.8%
April	15.4%	17.9%
May	12.6%	16.9%
June	26.5%	8.5%
July	24.5%	8.2%
August	8.6%	11.7%
September	20.9%	6.8%
October	25.6%	7.6%
November	13.1%	4.9%
December	9.8%	9.7%

**Source: Pending Claim Verification Result, Muhammadiyah Hospital North Sumatra (2025)*

Based on the data presented in Table 3, the percentage of pending inpatient claims decreased in 2022 following the appointment of an internal verification doctor, compared to 2020 when no internal verifier was assigned. In 2020, the highest percentage of pending claims reached 32.6 percent, while the lowest was 8.6 percent. In 2022, the highest percentage declined to 21.6 percent in January, and the lowest dropped to 4.9 percent in November.

Table 4. Reasons for Pending Inpatient Claims Submitted to BPJS Kesehatan

Month of Service	Pending Claim Nominal Percentage	
	Year 2020	Year 2022
Indication of hospitalization	13.9%	2.4%
Completeness of medical resume contents and supporting files	20.7%	15.9%
Diagnostic coding does not comply with manual coding rules	25.3%	8.3%
Primary Diagnostic (DU) and Secondary Diagnostic (DS) coding is exchanged	14.6%	3.9%
Combination codes that are coded separately	4.2%	1.5%
Diagnostic coding errors	8.9%	28.0%
Action coding errors	4.6%	3.9%
Input of diagnostic or action coding that is not in the resume	1.1%	1.4%
Not in accordance with BPJS Kesehatan circular regulations	2.5%	3.3%
Confirmation issues or errors from BPJS Kesehatan	4.2%	31.2%

**Source: Pending Claim Verification Result, Muhammadiyah Hospital North Sumatra (2025)*

When Muhammadiyah Hospital submits inpatient claims to BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia's national health insurance agency, the claims are initially verified by BPJS Kesehatan verifiers. Not all claims are accepted immediately; some are categorized as pending and returned to the hospital for re-examination by internal verifiers. Based on the data in Table 4, in 2020, prior to the appointment of internal verification doctors, the leading cause of pending claims was diagnostic coding that did not

comply with manual coding rules (25.3 percent), followed by incomplete medical resumes and supporting documents (20.7 percent), and the exchange of primary and secondary diagnoses (14.6 percent). In 2022, after internal verification doctors were assigned, the most frequent cause of pending claims shifted to confirmation issues or errors from BPJS Kesehatan (31.2 percent), followed by diagnostic coding errors (28 percent) and incomplete medical resumes or supporting files (15.9 percent).

Qualitative data were obtained through interviews with selected informants. The interview questions were adapted from previous research conducted at Koja Hospital (Indonesia et al., 2019). The responses below reflect the perspectives of informants directly involved in the verification and submission of inpatient claims at Muhammadiyah Hospital in North Sumatra.

BPJS Kesehatan Pending Inpatient Claim Files at Muhammadiyah Hospital, North Sumatra

> " Pending claims in 2022 were quite low, despite a significant increase in the number of claims filed. This is likely due to the internal verifier's pre-claim verification process. Previously, many pending claims were cited for hospitalization indications due to unclear hospitalization introductions and incomplete examinations. Ultimately, the pending claims were simply referred to as observational diagnoses. However, since the introduction of the verifier, this has significantly decreased." (Informant 2)
>
> " The internal verifier has been in place since 2022 and has been very helpful in the claims process at Muhammadiyah Hospital in North Sumatra. Although claims increased approximately threefold compared to 2020, the number of pending claims has been minimized. In fact, most pending claims in 2022 were confirmed by BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia's national health insurance agency. For example, the symptoms and medical history were clearly stated and aligned with the coding manual and Agreement BA, but perhaps they were not thoroughly reviewed, leading to confirmation requests or counter-questioning." (Informant 3)
>
> " Pending claims at Muhammadiyah Hospital in North Sumatra in 2022 were quite minimal compared to the large number of claims submitted. Most of these claims were pending due to reasons from BPJS Kesehatan, such as simple requests for confirmation, even though the information was clearly stated in the claim form. This may have resulted from misinterpretation or the need for reconfirmation." (Informant 1)

Based on the interview results, the presence of internal verifiers since 2022 has significantly reduced the number of pending claims, despite a threefold increase in claim volume. The remaining pending claims are generally related to administrative confirmations, often due to the clarity or visibility of information, rather than deficiencies in clinical documentation.

Obstacles in the Coding Process

> " The coding process was initially difficult because medical records and resumes were still manual, making diagnoses and procedures hard to read. These procedures were often delayed due to incorrect diagnosis and procedure coding. Furthermore, before we had an internal verifier, we did not understand the correct codes for each diagnosis. Now that we have an internal verifier, our coding can be corrected to conform to manual coding standards." (Informant 3)
> " The obstacle is that medical records and resumes are still manual, so some writing is often illegible or even omitted. Then, the attending physician (DPJP) writes down several diagnoses. Previously, we only input what the DPJP wrote, without considering the distinction between primary and secondary diagnoses. After the internal verifier was appointed, someone began double-checking the primary diagnosis based on the initial admission history and the resources allocated during the service." (Informant 2)
> " The coding process may also be hampered by delays in receiving medical records from the records department. Because the system is manual, some codes are missed during submission. Therefore, before closing a claim, it must be double-checked to ensure that the number of participant eligibility letters (SEPs) issued matches the number of claims coded. Many codes are entered incorrectly due to illegible writing, and some surgical procedures are not listed in the medical resume. Since 2022, the number of claims has continued to increase, requiring us to work faster to meet submission deadlines. As a result, many coding errors occur due to rushing, such as entering 83.6 instead of 86.3." (informant 1)

Informants reported that coding barriers primarily stemmed from manual medical records that were difficult to read or incomplete. These issues led to inconsistent identification of primary and secondary diagnoses, omission of procedures, delays in file circulation, discrepancies between the number of participant eligibility letters and claims, and coding errors caused by high workloads. Since the introduction of internal verifiers, coding errors have decreased due to rechecks that follow established coding guidelines and confirmation of the primary diagnosis based on initial patient history and the most resource-intensive aspects of care.

Obstacles in the Verification Process

> " There are still many problems in the verification process, the most problematic being the medical resume, which is difficult to read and incomplete. Many details are often omitted, such as the results of important examinations that support the indication for hospitalization and diagnosis, the documentation of procedures such as surgery, and the therapies administered. If the issue relates to illegible or incomplete writing by the attending physician (DPJP), confirmation must be made directly with the DPJP. However, the DPJP is not scheduled to be present every day, so confirmation must wait until they are available. Several diagnoses also require follow-up laboratory tests and therapy evaluations, which must be attached to the claim file, but these are often forgotten, requiring a search through the medical records. Another obstacle involves changes to BPJS Kesehatan regulations, which require careful adjustment. For example, newborns without special care are now reimbursed according to Class 3, even if their BPJS Kesehatan membership is not Class 3, which was not previously the case. Additionally, for tuberculosis diagnoses, the new regulations require documentation in the Tuberculosis Information System (SITB), so claims must be checked carefully before submission. " (informant 1)

Informants reported that verification barriers primarily stemmed from medical resumes that were difficult to read or incomplete. Missing documentation of examination results, surgical procedures, and therapies often necessitated confirmation with the attending physician, whose limited availability delayed the process. Follow-up documents, such as laboratory tests and therapy evaluations, were frequently omitted and had to be retrieved manually. In addition, changes in BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia's national health insurance agency, regulations required careful adjustments. For instance, claims for newborns without special care were reimbursed at Class 3 rates regardless of membership class, and tuberculosis claims required verification through the Tuberculosis Information System.

Causes of Coding Errors in Inpatient Claim Files Resulting in Pending Status

> " The reasons for pending claims vary each month, depending on the BPJS Kesehatan verifier. Although the verifiers are the same individuals, they have different interpretations of coding. For example, if someone consistently uses code A, which is considered valid according to the coding manual, the claim is accepted. However, if the code changes, the next claim may be marked as pending. Before internal verifiers were assigned, the most common reason for pending status was that the submitted code did not comply with the manual's coding guidelines, and the indications for hospitalization were inconsistent. The primary diagnosis we submitted was often rejected and instead suggested as a secondary diagnosis." (Informant 3)
>
> " Now, most of the issues stem from the verification side. For example, the medical records are complete, and all tests, laboratory results, X-rays, and medication lists are included. Yet, claims are still marked as pending due to confirmation issues, with the diagnosis deemed inconsistent with the agreed-upon criteria. For instance, a diagnosis of pneumonia is questioned, even though the symptoms, examinations, lab results, chest X-rays, and antigen tests clearly rule out Covid-19. This has been a recurring issue, especially in the post-pandemic period of 2022." (Informant 2)
>
> " Currently, many pending claims involve missing surgical reports and laboratory results. This is not due to a lack of verification, but rather the manual nature of the process. Files are first verified, then scanned by another team, and finally submitted to BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia's national health insurance agency, as soft copies. This can result in files being left behind. Secondary diagnoses submitted based on medical records are sometimes deemed inappropriate for the resources used and are requested to be removed. Errors also occur in coding the primary diagnosis. According to the latest BPJS Kesehatan circular, for example, tuberculosis diagnoses require documentation in the Tuberculosis Information System (SITB). If this documentation is pending, observation coding such as Code Z is recommended. Pending cases also arise due to differing interpretations among BPJS Kesehatan verifiers. In one month, a claim submitted with code A was recommended to use code B. The following month, the same case was submitted with code B, but a different verifier marked it as pending and requested code A instead." (informant 1)

Informants indicated that pending inpatient claims were primarily caused by inconsistencies in coding interpretation among BPJS Kesehatan verifiers, weaknesses in documentation due to manual processes, and incomplete or illegible medical summaries. Additional factors included missing surgical reports and laboratory results, files not properly scanned or transmitted, and policy changes requiring specific documentation. These changes, such as mandatory evidence in the Tuberculosis Information System, often led to adjustments in primary and secondary diagnoses or the use of observation codes.

Inpatient Service Claim File Flow System at Muhammadiyah Hospital, North Sumatra

> "The process is good, but it is still manual and does not use electronic medical records" (Informant 2)
> "It's quite good. Each related unit carries out its duties and responsibilities well." (Informant 3)
> " The process for inpatient claims is good, but there are shortcomings in each inpatient service unit when completing medical records. For example, the admission documentation from the Emergency Department, surgical reports, delivery reports, and medical summaries are often incomplete. Details such as the date and time are frequently overlooked, even though they are crucial for submitting claims. As a result, additional time is needed to complete these details. These should be finalized before being submitted to the medical records department and then forwarded to the Casemix Unit." (Informant 1)

Informants reported that the inpatient claim file flow system at Muhammadiyah Hospital in North Sumatra was generally well-coordinated, with each unit fulfilling its responsibilities. However, the system remained manual, which contributed to delays. These delays were primarily caused by incomplete documentation, including admission records, surgical and delivery reports, and medical summaries. In particular, missing details such as dates and times often required additional effort before files could be submitted to the medical records department and subsequently to the claims management unit.

Role of Internal Verifier at the BPJS Kesehatan Unit of Muhammadiyah Hospital, North Sumatra

> " It is very helpful and effective in reducing pending claims. Internal verifiers are more familiar with manual coding rules and actively participate in seminars and regulatory updates organized by BPJS Kesehatan. In addition, information is shared directly through regular meetings with all relevant parties to highlight key focus areas in claims processing. This enables collaborative efforts to reduce pending claims." (Informant 2)
>
> " It is very helpful, especially given the current volume of claims. Coders can concentrate on entering data into the application system, which is then reviewed by internal verifiers. This minimizes the number of pending claim files held by BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia’s national health insurance agency. Verifiers now also contact the attending physician (DPJP) or relevant service units directly when claim files are unclear or incomplete, allowing for timely confirmation and completion. This helps ensure that claims are submitted according to the schedule set by BPJS Kesehatan." (Informant 3)

Informants reported that internal verifiers played a key role in reducing pending claims by conducting thorough reviews based on coding guidelines, staying updated on regulatory changes, and facilitating coordination across hospital units. Coders were able to focus on data entry, while internal verifiers ensured completeness through direct communication with the attending physician. As a result, claims were submitted on time in accordance with the schedule established by BPJS Kesehatan.

Coder at the BPJS Kesehatan Unit of Muhammadiyah Hospital, North Sumatra

> " Although the coders have not yet attended training for Indonesian Case-Based Groups (INA-CBGs), they are able to determine the appropriateness of coding based on the medical resume. They are quick learners, have a strong understanding of the coding process, and are familiar enough with the system to input codes efficiently. However, for diagnoses and procedures that are rarely encountered, coders experience some difficulty adjusting to INA-CBGs codes, as INA-CBGs use English terminology, whereas medical resumes use medical terms in Indonesian." (informant 1)

Despite not having received formal training, coders were able to assign codes quickly and accurately by referencing medical summaries. The primary challenge emerged when dealing with uncommon diagnoses and procedures, as the English terminology used in INA-CBGs did not always correspond with the medical terms found in Indonesian medical records.

Obstacles That Must Be Resolved to Reduce Pending Inpatient Claims at Muhammadiyah Hospital, North Sumatra

> " Obstacles that need to be addressed first might include facilitating coders and verifiers to attend coding training or seminars organized by BPJS Kesehatan or other agencies related to claims and Indonesian Case-Based Groups (INA-CBGs) regulations. Staff should be rotated to ensure that we do not miss the latest updates regarding BPJS Kesehatan regulations and circulars. The use of electronic medical records should also be implemented to simplify coding input and expedite the claims submission process." (Informant 2)
>
> " Obstacles that need to be addressed include increasing the responsibility of each inpatient service unit for completing medical records. This also involves reminding the attending physician (DPJP) to write complete and clear medical summaries, as these are crucial for determining accurate coding. It may also be necessary to recruit additional coders if the number of claims continues to increase, allowing for greater focus and thoroughness rather than rushing." (Informant 3)
>
> " Actually, the number of pending claims is relatively low compared to the total number of claims filed. However, we still aim to maintain this trend and, if possible, reduce it further so that hospital operations and cash flow can run smoothly. Current challenges include reducing errors caused by the hospital, such as incomplete or unclear medical resumes and supporting documents, which lead to pending claims due to documentation gaps or diagnosis confirmation issues. Implementing electronic medical records as soon as possible would be beneficial.." (Informant 1)

Informants emphasized that reducing pending inpatient claims depends primarily on improvements at the hospital level. These include enforcing the completeness and clarity of medical records and summaries across all service units, accelerating the implementation of electronic medical records, and providing regular training for coders and internal verifiers on Indonesian Case-Based Groups (INA-CBGs) regulations and updated policies from BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia’s national health insurance agency. Additionally, increasing the number of coding staff in response to rising claim volumes was seen as essential to maintaining accuracy, minimizing errors, and supporting a stable hospital cash flow.

DISCUSSION

Performance of Internal Verifiers in Reducing Pending Inpatient Claims at Muhammadiyah Hospital, North Sumatra

Following the appointment of an internal verification doctor, the study period demonstrated a clear reduction in the proportion of inpatient claims returned as pending, despite a substantial increase in overall claim volume. This indicates improved first-pass approval performance (Tables 2 and 3). The monthly trend became more stable, with fewer spikes in pending claims and more consistent reductions sustained across service months, suggesting that pre-submission checks were effective throughout the year (Table 3). The pattern of underlying causes also shifted from hospital-controlled deficiencies, such as incomplete documentation, incorrect assignment of primary and secondary diagnoses, and non-compliance with coding guidelines, toward confirmation issues originating from BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia's national health insurance agency (Table 4). These findings support the interpretation that the internal verifier served as a gatekeeping mechanism that reduced hospital-origin errors. The remaining pending claims were primarily related to external confirmation, indicating that claim quality improved without compromising submission timeliness.

Building on the finding of fewer pending claim files despite a higher volume of submissions, similar patterns have been reported across hospitals in Indonesia. Internal pre-submission verification and documentation checks have been shown to reduce claim returns caused by incomplete records and miscoded diagnoses or procedures (Maulida & Djunawan, 2022). Hospitals that institutionalize collaborative review between verifiers and coders, along with targeted corrections, also report lower rates of pending claims. Studies highlight coding accuracy and completeness of supporting evidence as the primary factors driving improvement (Zahra et al., 2024). Notably, the implementation of electronic medical records (EMR) alone does not eliminate pending claims. Without disciplined control over attachments and standardized verification workflows, facilities continue to experience returns due to missing documentation and code revisions(Utami et al., 2024). Strengthening human resources, through training for coders and verifiers, refreshers on coding manuals and BPJS Kesehatan circulars, and routine feedback, has been associated with fewer code-related rejections and improved first-pass approval rates, reinforcing the role of internal verification in enhancing claim quality(Prihatin et al., 2024). Furthermore, several hospitals have observed a shift in the causes of pending claims from hospital-controllable deficiencies to confirmation and interpretation

issues originating from BPJS Kesehatan (Zahra et al., 2024). This aligns with the findings of the present study and underscores the residual role of inter-party adjudication.

Grounded in these findings, hospitals should institutionalize and allocate resources for internal pre-submission verification as a permanent quality checkpoint within the claims workflow. This includes pairing verifier and coder reviews with targeted corrections to systematically prevent documentation gaps and miscoding that lead to claim returns (Maulida & Djunawan, 2022). Standardization is essential: hospitals should adopt written standard operating procedures and pre-submission checklists that are explicitly aligned with Permenkes No. 3/2023 (Indonesian Case-Based Groups standards) and the latest coding agreements and bulletins, ensuring that clinical evidence requirements and diagnosis or procedure selection rules are uniformly applied before submission (Kementerian Kesehatan RI, 2023). Human resource capacity should be strengthened through ongoing training for coders and verifiers, along with regular briefings on coding manuals and BPJS Kesehatan circulars. Facilities that implement these refreshers report fewer code-related rejections and more timely, higher-quality submissions (Taslim et al., 2024). Process discipline should be complemented by digital enablement, including the use of electronic medical record templates and controls for attachment completeness. Where feasible, integration with the SATUSEHAT claims module can help standardize data exchange. However, it is important to recognize that electronic medical record adoption alone does not eliminate pending claims without strong verification governance (Utami et al., 2024). Finally, performance should be monitored through a concise dashboard that tracks indicators such as pending claim rate, turnaround time, and paid-claim ratio, in order to support cash-flow sustainability in alignment with the national Jaminan Kesehatan Nasional (JKN) framework (DJSN, 2022).

Performance of Internal Verifier Doctor in Improving BPJS Kesehatan Claim Quality at Muhammadiyah Hospital North Sumatra

Following the introduction of an internal verification doctor, the quality of claims submitted to BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia's national health insurance agency, improved across three observable dimensions: documentation completeness, diagnostic and procedural coding accuracy, and submission timeliness. First, pre-submission reviews systematically identified and corrected omissions in medical summaries and supporting attachments, such as laboratory results, imaging reports, and operative documentation. Unclear entries were clarified directly with the attending physician prior to submission, resulting in a more consistent evidentiary trail across service units (Tables 2 to 4; interview excerpts). Second, collaboration between the verifier and coders

strengthened case summarization and diagnosis selection, reducing misclassification of primary and secondary diagnoses, minimizing deviations from coding guidelines, and improving alignment with Indonesian Case-Based Groups (INA-CBGs) standards and current circulars (Table 4; interview excerpts). Third, coordination led by the verifier—through routine briefings and on-demand confirmations—enabled coders to focus on data entry while maintaining timely submissions, even as claim volume increased. This indicates that improvements in claim quality did not compromise submission schedules (Tables 2 and 3; interview excerpts). The remaining pending claims were primarily related to external confirmation or interpretation rather than hospital-controlled deficiencies, suggesting that the internal verifier effectively served as a gatekeeping mechanism that enhanced file readiness at the point of submission (Table 4; interview excerpts).

Consistent with the finding that the internal verification doctor improved documentation completeness, coding accuracy, and submission timeliness, hospitals that implement structured pre-submission reviews also report fewer claim returns caused by incomplete records and miscoding. This pattern was observed in a recent analysis conducted at RSUD Kota Bandung (Nursyiam & Wahab, 2024). In a different setting, an inpatient study at Army Hospital Dr. Soepraoen classified the causes of pending claims into coding, administrative, and medical factors, and recommended tighter collaboration between verifiers and coders along with targeted training process improvements that reflect the mechanisms operating at Muhammadiyah Hospital(Salima & Zein, 2023). Evidence from Medan further highlights the importance of documentation completeness and diagnostic coding accuracy in determining claim quality. A series of studies conducted between 2024 and 2025 at RSU X and RSUD Dr. Pirngadi linked pending claims to missing attachments and errors in diagnosis selection, reinforcing the value of internal clinical and coding cross-checks (Syahputri et al., 2024). At the verification interface, research from RSD K.R.M.T. Wongsonegoro found that administrative completeness was positively correlated with approval by BPJS Kesehatan verifiers, supporting the use of standardized standard operating procedures and checklists similar to those applied by the internal verifier at Muhammadiyah Hospital (SULANDJARI, 2023). Finally, multi-institutional reports caution that workload and staffing constraints can sustain residual pending claims even when standard operating procedures are in place. This observation is consistent with the confirmation-related pending claims found in the present study and provides a management rationale for aligning staff capacity with increasing claim volumes(Kusuma Rahayu et al., 2025).

Building on these findings, hospitals should formalize the role of the internal verification doctor as a permanent pre-submission quality checkpoint. Key responsibilities such as documentation auditing, clinical cross-checking, and coordination with coders should be codified in written standard operating procedures and checklists that are explicitly aligned with the medical record standards mandated by Permenkes No. 24/2022. This ensures that evidentiary completeness becomes a mandatory prerequisite for claim submission (Kementerian Kesehatan RI, 2022). Sustained improvement also requires investment in human resources, including regular training for coders and verifiers, refreshers on coding manuals and BPJS Kesehatan circulars, and structured feedback mechanisms. Recent hospital studies have linked these efforts to reduced code-related rejections and improved first-pass approval rates (Sri Mulya et al., 2024). Finally, hospital managers should align staffing capacity with workload demands, including scheduling and establishing escalation channels with BPJS Kesehatan for rapid clarification. High claim volumes under tight deadlines can perpetuate residual pending claims even when standard operating procedures are in place, making adequate resourcing and inter-party coordination essential for maintaining submission timeliness and protecting hospital cash flow (Kusuma Rahayu et al., 2025).

Factors Causing Pending Inpatient Claims and Efforts to Improve Claim Management at Muhammadiyah Hospital North Sumatra

Drawing on hospital administrative records and interview evidence, pending inpatient claims at Muhammadiyah Hospital in North Sumatra were primarily caused by hospital-side process deficiencies concentrated in three areas. First, documentation completeness and readability of handwritten medical records and discharge summaries were inconsistent, with frequent omissions of examination results, operative reports, and time or date fields. Second, diagnostic and procedural coding accuracy was affected by incorrect assignment of primary and secondary diagnoses and inconsistent adherence to current coding manuals and circulars. Third, file-handling lapses during compilation and scanning led to attachments being unmatched with the coded claim (Tables 2 to 4; interview excerpts). These vulnerabilities were exacerbated by increasing claim volumes, tight monthly submission deadlines, and limited training for coders. The absence of structured electronic medical record templates also contributed to variability in documentation quality (Tables 2 to 4; interview excerpts). In response, the introduction of an internal verification function established routine pre-submission reviews, direct clarifications with attending physicians, checklist-based completeness audits, and focused coordination with coders. These measures improved

evidentiary readiness and reduced hospital-controlled discrepancies without compromising submission timeliness. The remaining pending claims were predominantly related to confirmation or interpretation issues from BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), indicating that the internal verifier effectively enhanced file quality at the point of submission (Tables 2 to 4; interview excerpts).

The findings of this study regarding the primacy of human-factor limitations, such as coder knowledge, workload, and uneven understanding of evolving regulations, documentation gaps from manual records, and variation in BPJS Kesehatan verifier interpretation are consistent with recent multi-site evidence in Indonesia. A study conducted at a district hospital in Kediri found that coding accuracy and file completeness were the strongest predictors of whether claims were marked as pending. This study empirically linked documentation quality to verification outcomes and recommended targeted accuracy checks prior to submission(Sri Wahyuni et al., 2024). Similar patterns were observed at Ibnu Sina Hospital, where the implementation of hospital-side verification and periodic coordination with BPJS Kesehatan coincided with a reduction in pending claims. However, residual disputes continued to cluster around coding conventions and incomplete attachments, particularly under workload pressure and regulatory changes(Hasbullah et al., 2024). A qualitative 5M appraisal at Bogor City Hospital also identified the dominant root cause of pending claims in the "Man" element skills, staffing, and process discipline arguing that weaknesses in this area propagate to "Method," "Material," and "Machine." This reinforces the attribution of pending claims to human-system interfaces rather than purely administrative rules (Eriati, 2025). Research conducted at a private hospital in Sukoharjo emphasized similar improvement strategies, including adherence to structured standard operating procedures, upskilling of coders and verifiers, and tighter pre-submission reviews to reduce pending claims caused by incomplete medical summaries and miscoding (Haq & Werdani, 2025). Complementing these findings, a 2025 study highlighted that the performance of verifiers and coders, including training, refreshers, and oversight, significantly influences pending rates, supporting the recommendation for continuous competency development and staffing strategies that are responsive to workload demands (Kusuma Rahayu et al., 2025).

To address hospital-side determinants of pending claims, facilities should formalize the role of the internal verifier as a permanent pre-submission quality checkpoint. Checklist-driven reviews should be codified to enforce medical record completeness and evidentiary attachment requirements, in accordance with the standards outlined in Permenkes No. 24/2022 (Kementerian Kesehatan RI, 2022). In parallel, hospital managers should invest in the

upskilling of coders and verifiers, with a focus on determining primary and secondary diagnoses and adhering to current coding rules. This reflects evidence from a military hospital that categorized the causes of pending claims into coding, medical, and administrative factors, and recommended targeted accuracy checks prior to submission (Salima & Zein, 2023). Because claim approval is highly sensitive to the completeness and correctness of submitted documentation, hospitals should conduct routine refresher briefings on BPJS Kesehatan circulars and perform regular audits of local standard operating procedures to prevent file returns and maintain submission timeliness (Arsy & Gunawan, 2024). Digital enablement should be used to support, rather than replace, process discipline. Electronic medical record templates for mandatory data elements and controlled attachment workflows can help reduce legibility and omission issues, as documented in procedural studies of hospital claim processes(Ramadanis et al., 2024). Moreover, payer and provider interfaces increasingly rely on digital verification systems such as Vedika, which may increase the detection of deficiencies unless documentation governance and clarification channels are strengthened. This underscores the need for joint case reviews and rapid resolution of queries (Agustino & Meliala, 2024). Finally, local evidence from a large municipal hospital shows that standardizing administrative completeness improves verification outcomes, supporting the need to align staffing and scheduling capacity in casemix and coding units as claim volumes continue to rise (Mukaromah & Wahab, 2024).

CONCLUSIONS

This study demonstrates that the internal verifier plays a significant role in reducing pending inpatient claims at Muhammadiyah Hospital in North Sumatra, even as the volume of submissions continues to increase. Improved inpatient claim management contributes to greater financial returns for the hospital, as eligible and promptly clarified claims support timely reimbursement from BPJS Kesehatan (Badan Penyelenggara Jaminan Sosial Kesehatan), Indonesia’s national health insurance agency.

The main factors contributing to pending claims were limited staff knowledge, incomplete claim documentation, and variability in human resource accuracy. To address these challenges, hospitals are encouraged to strengthen coder competence, implement electronic medical records, conduct routine workload analyses, and provide additional incentives. These strategies are recommended to improve staff loyalty, enhance coding precision, and elevate overall claim management performance in the face of rising submission volumes.

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