INPLASY

INPLASY202690046

doi: 10.37766/inplasy2026.9.0046

Received: 10 September 2026

Published: 10 September 2026

From Claims to Care: Mapping Fraud Risks in Rehabilitation Services for People with Disabilities under Indonesia's National Health Insurance

Putra, MADT; Mokhtar, MH; Sario, JA.

Corresponding author:
Muhammad Adib Dwi Tamma Putra

adibdwitamma@gmail.com

Author Affiliation:
Department of Physical Medicine and Rehabilitation, Faculty of Medicine, Universitas Sriwijaya.

ADMINISTRATIVE INFORMATION

Support - No support.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202690046

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 10 September 2026 and was last updated on 10 September 2026.

INTRODUCTION

Review question / Objective Primary review question: What fraud risks have been identified in rehabilitation services for people with disabilities, and how can these risks be addressed within Indonesia's National Health Insurance (JKN) system?

Secondary questions: (1) What types of fraud, improper claims, inappropriate utilization, or claims-integrity problems have been reported in rehabilitation services? (2) At which stages of the rehabilitation and financing/claims pathways do these risks arise? (3) What clinical, organizational, professional, documentation, coding, or financing factors contribute to these risks? (4) What mechanisms have been described for prevention, detection, assessment, and response? (5) How do identified risks relate to the existing JKN anti-fraud framework? (6) What opportunities exist to strengthen claims integrity while protecting access to clinically necessary rehabilitation?

Rationale Rehabilitation is an essential component of health systems and may be required repeatedly or over extended periods by people with disabilities. At the same time, rehabilitation claims may involve repeated encounters, treatment duration, clinical documentation, coding, and ongoing reassessment, creating points at which the service delivered and the submitted claim must remain accurately aligned. Healthcare fraud literature has identified a range of fraudulent and inappropriate claims practices, but rehabilitation-specific evidence is relatively limited and heterogeneous.

Indonesia's National Health Insurance (JKN) has an established framework for preventing and addressing healthcare fraud. However, the extent to which rehabilitation-specific claims-integrity risks have been described and how these risks can be mapped to the existing JKN framework remain insufficiently synthesized. A scoping review is therefore appropriate to map the available evidence across different study designs,

rehabilitation services, healthcare financing systems, and policy contexts.

The review also seeks to distinguish confirmed or reported fraud from potential fraud risks, improper payments, inappropriate utilization, and documentation or coding problems. This distinction is important because an inappropriate or non-compliant claim does not necessarily demonstrate intentional fraud.

The review aims to identify opportunities for strengthening rehabilitation-related claims integrity within the existing JKN anti-fraud ecosystem while avoiding unnecessary barriers to legitimate rehabilitation access.

Condition being studied The review concerns healthcare fraud and claims-integrity risks associated with rehabilitation services for people with disabilities. Rehabilitation includes physical therapy, occupational therapy, speech and language therapy, medical rehabilitation, inpatient and outpatient rehabilitation, and related rehabilitation services. The Indonesian context of particular interest is the National Health Insurance (JKN) system, while evidence from other publicly or insurance-financed healthcare systems is included to provide comparative and contextual evidence.

METHODS

Search strategy Electronic databases and supplementary sources searched included PubMed/MEDLINE, PubMed Central (PMC), Scopus, Web of Science, Embase, CINAHL, and ProQuest, together with relevant Indonesian policy and institutional sources, including the Ministry of Health, BPJS Kesehatan, Indonesian journals, and institutional repositories. Reference lists of relevant sources were also screened.

The primary search combined rehabilitation terms with fraud, claims-integrity, improper-payment, and inappropriate-utilization terms. Rehabilitation terms included: rehabilitation, "medical rehabilitation", "physical rehabilitation", physiotherap*, "physical therap*", "occupational therap*", "speech therap*", "speech-language therap*", "rehabilitation service*", "rehabilitation care", "inpatient rehabilitation", and "outpatient rehabilitation".

Fraud and claims-integrity terms included: fraud, fraudulent, "healthcare fraud", "health care fraud", "health insurance fraud", "insurance fraud", "fraud risk*", "fraudulent claim*", "false claim*", "false billing", "fraudulent billing", "improper billing", "improper claim*", "improper payment*", upcoding, unbundling, "phantom billing", "services not rendered", "medically unnecessary", "unnecessary service*", "duplicate billing", and "duplicate claim*".

A supplementary sensitivity search combined rehabilitation terms with "incorrect coding", "billing error*", "claims error*", and documentation. Controlled vocabulary and database-specific syntax were adapted to each database. Disability, health insurance, health financing, reimbursement, and payment terms were not required as mandatory concepts in the primary search to reduce the risk of missing relevant rehabilitation evidence.

The review considered evidence published from January 2000 through the final search date in 2026 and included English- and Indonesian-language sources.

Participant or population The population includes people with disabilities and/or patients receiving rehabilitation services, including populations receiving physical therapy, occupational therapy, speech and language therapy, medical rehabilitation, inpatient rehabilitation, outpatient rehabilitation, and related rehabilitation services. Relevant healthcare providers, rehabilitation professionals, facilities, insurers, administrators, and other actors are also considered when their roles are directly relevant to rehabilitation fraud, claims integrity, improper claims, or inappropriate utilization.

Intervention Not applicable. This is a scoping review and does not evaluate a single clinical intervention. The concept being mapped is fraud risk and claims integrity in rehabilitation services, including prevention, detection, assessment, and response mechanisms.

Comparator Not applicable. This scoping review does not require a comparator intervention or control group.

Study designs to be included Quantitative and qualitative primary studies, mixed-methods studies, observational studies, records-based or health-services research, methodological studies using healthcare claims data, systematic reviews, scoping reviews, policy and regulatory documents, institutional reports, audit reports, and other substantive evidence sources containing sufficient information relevant to rehabilitation fraud, improper claims, inappropriate utilization, or claims integrity.

Eligibility criteria Inclusion criteria: Evidence published from January 2000 through the final search date in 2026; English or Indonesian language; evidence concerning rehabilitation services and fraud, fraudulent claims, improper payments, inappropriate utilization, billing, coding, documentation, professional misconduct, claims integrity, or related healthcare-financing risks; and evidence containing sufficient information for data extraction. Evidence from Indonesia and other healthcare financing systems was eligible where relevant to the review question.

Exclusion criteria: Sources unrelated to rehabilitation; sources addressing healthcare fraud without a relevant rehabilitation component; rehabilitation studies without information relevant to fraud, claims integrity, improper claims, inappropriate utilization, or related financing risks; editorials, opinion pieces, news or promotional materials without sufficient substantive evidence; duplicate records; and sources containing insufficient information for extraction.

Information sources PubMed/MEDLINE; PubMed Central (PMC); Scopus; Web of Science; Embase; CINAHL; ProQuest; Indonesian Ministry of Health and other relevant government sources; BPJS Kesehatan and relevant JKN policy sources; Indonesian journals and institutional repositories; and reference lists of relevant publications.

Main outcome(s) The primary outcome of the review is a descriptive map of rehabilitation-related fraud and claims-integrity risks. The review identifies and categorizes: (1) types of fraud or potential fraud risks; (2) improper claims, inappropriate utilization, and documentation or coding problems; (3) stages of the clinical rehabilitation and financing/claims pathways at which risks arise; (4) contributing clinical, organizational, professional, documentation, coding, and financing factors; (5) detection and monitoring mechanisms; and (6) prevention, assessment, and response mechanisms. No pooled effect measure or quantitative prevalence estimate is planned.

Additional outcome(s) Additional outcomes include the relevance of identified risks to Indonesia's JKN anti-fraud framework, evidence gaps, policy implications, and opportunities for strengthening rehabilitation claims integrity while protecting access to clinically necessary rehabilitation. The review also synthesizes the evidence into a proposed Rehabilitation Integrity Framework for JKN based on Prevent, Detect, Assess, and Respond.

Data management Records were managed through deduplication followed by title/abstract screening and full-text eligibility assessment. Data were charted using predefined extraction fields covering study characteristics, population, rehabilitation type, healthcare financing context, relevant actor, pathway stage, type and status of risk, mechanism, supporting evidence, detection mechanism, consequences, prevention or response measures, JKN relevance, and policy implications. Duplicate records were removed before screening. Extracted information was synthesized descriptively and thematically rather than quantitatively pooled.

Quality assessment / Risk of bias analysis Because this was a scoping review designed to map the breadth and characteristics of heterogeneous evidence, methodological quality was not used as an exclusion criterion. The review extracted study design and evidence type and considered differences in evidence directness and methodological characteristics during interpretation. Confirmed fraud, reported misconduct, inappropriate claims, potential fraud risks, and contextual or methodological evidence were distinguished during synthesis. No pooled quantitative estimate was calculated.

Strategy of data synthesis Data were synthesized using descriptive and thematic approaches. Extracted evidence was first mapped according to rehabilitation type, population, financing context, actor, pathway stage, and risk status. Risks were then grouped into recurring domains: services not rendered or phantom billing; service–claim mismatch; treatment-time, treatment-volume, and medical-necessity concerns; documentation and coding problems; and provider, organizational, and professional factors. Findings were mapped across two interconnected pathways: the clinical rehabilitation pathway and the financing/claims pathway. Detection and response mechanisms were synthesized and mapped to the existing JKN anti-fraud framework. The evidence was then integrated into a proposed Prevent–Detect–Assess–Respond Rehabilitation Integrity Framework for JKN. No meta-analysis or pooled prevalence estimation was performed.

Subgroup analysis No formal statistical subgroup analysis was performed. Where relevant, evidence was compared descriptively by rehabilitation type, healthcare financing context, geographical setting, type of actor, pathway stage, and fraud or claims-integrity risk category.

Sensitivity analysis No formal quantitative sensitivity analysis was performed because this was a scoping review using heterogeneous evidence and narrative/thematic synthesis without meta-analysis. Robustness was considered descriptively by comparing findings across different evidence types and settings.

Language restriction English and Indonesian.

Country(ies) involved Indonesia; comparative evidence from other countries was included.

Other relevant information This is a retrospective registration of a completed but unpublished scoping review. The review was completed before registration because protocol registration was not undertaken at the beginning of the review. This registration is intended to provide a transparent public record of the methods used. The review was conducted using a population–concept–context framework and JBI scoping-review methodology and was reported with reference to PRISMA-ScR. The review distinguishes confirmed or reported fraud from potential fraud risks, improper payments, inappropriate utilization, and documentation or coding problems. No individual-level patient data were collected or analyzed.

Keywords rehabilitation; healthcare fraud; claims integrity; health insurance; disability; National Health Insurance; Indonesia; scoping review.

Dissemination plans The findings will be disseminated through publication in a peer-reviewed public health or health-services research journal and through relevant scientific conferences and academic or policy forums. The findings are intended to inform researchers, rehabilitation providers, healthcare organizations, health insurers, auditors, and policymakers involved in strengthening healthcare claims integrity while maintaining access to clinically necessary rehabilitation.

Contributions of each author

Author 1 - Muhammad Adib Dwi Tamma Putra - Conceptualization, development of the research question, methodology, literature search, study selection, data extraction, data curation, formal analysis, synthesis of findings, visualization, writing—original draft, and writing-review and editing.
Email: adibdwitamma@gmail.com

Author 2 - Mohd Helmy Mokhtar - Methodology, interpretation of rehabilitation and healthcare-system evidence, validation of data interpretation, critical review of the findings, and writing-review, formatting and editing.
Email: helmy@ukm.edu.my

Author 3 - Jay A Sario - Methodology, interpretation of healthcare policy and claims-integrity evidence, critical appraisal of the conceptual framework, supervision of manuscript refinement, and writing-review and editing.
Email: docjayasario@gmail.com