

The Impact of Universal Health Coverage Implementation on the Increase in Patient Referrals at the Poso Regional General Hospital

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Abstract: Universal Health Coverage (UHC) has transformed health service utilization patterns across Indonesia, particularly through the Jaminan Kesehatan Nasional (JKN) program administered by BPJS Kesehatan. This study examines the impact of UHC implementation on the increase in patient referrals at Poso Regional General Hospital (RSUD Poso), Central Sulawesi, Indonesia. Using a mixed-methods approach combining retrospective secondary data analysis and cross-sectional survey, data were collected from 2020 to 2024 covering 6,418 referral cases in 2024 alone. Results indicate a significant and progressive increase in patient referrals, from a rate of 12.0% in 2020 to 21.7% in 2024, representing a cumulative growth of approximately 190%. The proportion of JKN-based referrals rose from 73.6% to 89.2% over the same period. The most prevalent referral diagnoses involved cardiovascular diseases, neoplasms, and diabetes mellitus. Improvements in referral documentation compliance (67.3% to 88.2%) and reduced hospital waiting time (4.2 to 2.7 days) were also observed. These findings confirm that UHC implementation has substantially expanded access to higher-level hospital services at RSUD Poso, while simultaneously highlighting challenges of healthcare capacity management in remote areas. Strengthening primary care gatekeeping functions and expanding hospital capacity are recommended as key policy responses.

Keywords: Universal Health Coverage, Patient Referral, BPJS Kesehatan, RSUD Poso, JKN, Hospital Utilization, Indonesia

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INTRODUCTION

Universal Health Coverage (UHC) represents one of the most transformative global health policy frameworks of the twenty-first century. Endorsed by the United Nations Sustainable Development Goals (SDGs) under Goal 3.8, UHC aims to ensure that all individuals and communities receive the health services they need without suffering financial hardship. For low- and middle-income countries (LMICs), the transition toward UHC carries profound implications for health system architecture, particularly for hospital referral networks. Indonesia launched its national UHC initiative known as Jaminan Kesehatan Nasional (JKN) on January 1, 2014, under the management of the Social Security Administering Body for Health (BPJS Kesehatan). Since its inception, this program has grown exponentially, covering over 270 million participants by 2024 and becoming the largest single-payer national health insurance program in the world.

The JKN framework introduces a tiered referral system wherein patients must first seek care at primary health facilities (Fasilitas Kesehatan Tingkat Pertama, FKTP), such as community health centers (Puskesmas) and general practice clinics, before being referred to secondary or tertiary hospitals. This gatekeeping mechanism is designed to optimize health resource utilization, prevent unnecessary overcrowding at specialist facilities, and distribute the burden of care more equitably across the health system. However, as UHC coverage expands and health-seeking behavior among previously uninsured populations increases, regional hospitals have faced a growing and often unanticipated surge in patient referral volumes.

Poso Regional General Hospital (Rumah Sakit Umum Daerah Poso, or RSUD Poso) is the primary referral hospital for Poso Regency, located in the Central Sulawesi Province of Indonesia — a geographically vast and relatively remote area. The hospital serves as the backbone of healthcare delivery for a population with historically limited access to health services, compounded by geographic barriers including mountainous terrain and poor road infrastructure. Prior to JKN, a significant proportion of the local population remained uninsured or relied on informal health financing mechanisms, limiting their utilization of formal health services, including hospitals. The UHC rollout has fundamentally altered this dynamic, removing financial barriers and enabling previously excluded populations to access hospital services via the referral pathway.

Empirical evidence from across Indonesia demonstrates that JKN has significantly increased hospital inpatient utilization, with studies documenting higher rates of service use among JKN participants compared to non-participants, especially in disadvantaged and remote areas. Research by Wulandari et al. (2024) found that national health insurance played a decisive role in hospital utilization patterns in disadvantaged regions of Indonesia, with insured populations demonstrating significantly higher utilization rates than uninsured counterparts. Similar trends have been observed in hospital-level studies, where referral volumes from primary care facilities spiked considerably following the expansion of insurance coverage, straining existing hospital infrastructure and human resources.

The relationship between UHC and hospital referral rates is multidimensional. On one hand, UHC eliminates the financial deterrent to seeking care, enabling patients with chronic and complex conditions to finally access specialist services. On the other hand, weaknesses in primary care capacity including limited diagnostic equipment, insufficient numbers of skilled health workers, and inadequate drug formularies lead to higher than necessary referral rates, with many patients referred for conditions that could be managed at the primary level. Studies evaluating referral ratios at Indonesian primary health centers found that non-specialist referrals remain a persistent challenge under the JKN system, undermining the cost-efficiency that the tiered referral model was designed to achieve.

Internationally, similar patterns have been observed. In Kenya, the implementation of the UHC pilot program increased facility-based health service utilization markedly, while simultaneously exposing capacity gaps at the first referral hospital level. In India, the state of Karnataka's digital referral framework, developed alongside UHC objectives, demonstrated that electronic referral systems could streamline the patient flow but did not eliminate the underlying demand pressures generated by insurance-driven utilization increases. These experiences provide valuable comparative insights for understanding the Indonesian context.

Despite the growing body of evidence on UHC's impact on health service utilization at the national and provincial level in Indonesia, very limited empirical data exist for remote and conflict-affected areas such as Poso Regency in Central Sulawesi. The region has historically suffered from socioeconomic underdevelopment, post-conflict population displacement, and weak health infrastructure, all of which create unique contextual factors that may amplify the impact of UHC on hospital referral volumes.

Furthermore, the interaction between UHC implementation and referral system dynamics at RSUD Poso has not been systematically studied, representing a notable gap in the literature.

The novelty of this study lies precisely in this contextual specificity. While existing studies have predominantly focused on urban hospitals or large provincial referral centers in densely populated Java, this research contributes new evidence from a Type B regional hospital operating in a post-conflict, remote, and socioeconomically vulnerable setting in Eastern Indonesia. By tracking longitudinal referral trends across a five-year period (2020–2024), disaggregating referral data by insurance status, referral type, and diagnostic category, and assessing compliance and quality indicators, this study provides a comprehensive and granular picture of how UHC implementation has reshaped the referral ecosystem at RSUD Poso. The findings have direct relevance for health system planning in similar peripheral hospital settings across Indonesia and the broader ASEAN region.

Furthermore, this study is novel in its analytical integration of patient flow data with qualitative insights from healthcare providers, offering a mixed-evidence base that goes beyond aggregate statistics. By examining not only the volume of referrals but also their clinical appropriateness, documentation completeness, and associated patient outcomes, this research contributes to a more nuanced understanding of how UHC implementation affects hospital service quality not merely quantity in resource-limited environments. Addressing this evidence gap is critical for informing targeted policy interventions to strengthen the referral system, enhance primary care gatekeeping, and ensure that the promise of universal access translates into equitable, efficient, and high-quality health service delivery for the people of Poso and communities like it across Indonesia.

METHODOLOGY

Study Design

This study employed a mixed-methods design, combining quantitative retrospective data analysis with a cross-sectional survey approach. The quantitative component utilized secondary data from the hospital management information system (SIMRS) and BPJS Kesehatan claim records at RSUD Poso for the period January 2020 through December 2024. The qualitative component involved structured key informant interviews with hospital administrators, clinical department heads, and BPJS Kesehatan officers.

Study Site and Population

The study was conducted at RSUD Poso, a Type B General Regional Hospital located in Poso Regency, Central Sulawesi Province, Indonesia. RSUD Poso serves as the primary referral hospital for the regency and receives referrals from 17 Puskesmas (community health centers) and affiliated primary care clinics across the region. The study population comprised all patient referral records registered at RSUD Poso from 2020 to 2024, totaling 20,227 referral episodes. No sampling was applied to the secondary data; all records were included in the analysis.

Data Collection

Quantitative data were extracted from three sources: (1) the hospital's electronic SIMRS database, which records all outpatient and inpatient visits; (2) BPJS Kesehatan claim data accessible through the SIMRS interface; and (3) referral registers maintained by hospital admission and outpatient departments. Variables collected included referral volume by year, referral type (emergency, elective, back-referral), primary diagnosis by ICD-10 code, insurance status (JKN vs. non-JKN), referral documentation completeness, and average patient waiting time from referral issuance to specialist consultation. Qualitative data were obtained through structured in-depth interviews with 12 key informants conducted between March and April 2025.

Data Analysis

Quantitative data were analyzed using IBM SPSS Statistics version 26.0. Descriptive statistics including frequencies, percentages, means, and standard deviations were computed for all variables. Trend analysis was performed using linear regression to assess the statistical significance of annual changes in referral rates. The significance threshold was set at $p < 0.05$. Qualitative data from interviews were analyzed using thematic analysis following the Braun and Clarke framework, with coding performed iteratively until thematic saturation was reached.

Research Framework

The conceptual framework guiding this study posits that UHC implementation operates through two primary mechanisms to increase hospital referral volumes: (1) the demand-side mechanism, whereby insurance coverage removes financial barriers and increases health-seeking behavior among previously uninsured populations; and (2) the supply-side mechanism, whereby the tiered referral system institutionally directs patients from primary care to hospitals when conditions exceed primary care capacity. UHC coverage expansion (through JKN enrollment) acts as the primary driver, catalyzing increased health-seeking behavior and institutionalizing the tiered referral pathway. Contextual moderating factors — including geographic accessibility, primary care capacity, and health literacy — influence the magnitude and composition of the resulting referral flow at RSUD Poso.

RESULTS AND DISCUSSION

Trends in Patient Referral Volume (2020–2024)

The analysis of RSUD Poso referral data from 2020 to 2024 reveals a consistent and statistically significant increase in both the absolute number and proportional rate of patient referrals (Table 1). In 2020, the hospital recorded 2,214 referrals from a total of 18,452 outpatient visits, representing a referral rate of 12.0%. By 2024, the volume of referrals had escalated to 6,418 out of 29,561 total outpatient visits — a referral rate of 21.7%, representing a near-doubling of the proportional referral burden over five years.

Table 1. Patient Referral Trends at RSUD Poso, 2020–2024

Year	Total Outpatient Visits	Total Referrals	Referral Rate (%)	BPJS/JKN Referrals	Growth (%)
2020	18,452	2,214	12.0	1,630	—
2021	20,137	2,856	14.2	2,215	+29.0
2022	23,481	3,742	15.9	3,104	+31.0
2023	26,903	4,997	18.6	4,337	+33.5
2024	29,561	6,418	21.7	5,723	+28.4

Source: RSUD Poso SIMRS Database & BPJS Kesehatan Claim Records, 2020–2024

The year-on-year growth in referral volumes was most pronounced between 2022 and 2023 (+33.5%), coinciding with the expansion of UHC coverage under the government's program to achieve 100% JKN enrollment at the district level. Linear regression confirmed a statistically significant upward trend in referral rates over the study period ($\beta = 2.38$, 95% CI: 1.85–2.91, $p < 0.001$). These findings are consistent with the broader Indonesian literature demonstrating that JKN expansion is associated with

increased hospital utilization, particularly in previously underserved regions. Wulandari et al. (2024) similarly documented elevated hospital inpatient use in disadvantaged areas following national health insurance coverage expansion, underscoring the demand-stimulating effect of financial protection under UHC.

The proportion of JKN-covered referrals also increased substantially over the observation period, rising from 73.6% of all referrals in 2020 to 89.2% in 2024. This convergence of referral volume growth with JKN enrollment growth provides compelling evidence that UHC implementation — specifically through the removal of financial barriers — is the primary driver of the observed referral surge. This aligns with findings by Kosasih et al. (2022), who documented significant changes in health-seeking behavior following UHC implementation in Indonesia, with insured populations demonstrating markedly higher rates of formal health facility utilization compared to pre-insurance periods.

Referral Patterns by Type and Diagnostic Category

Disaggregation of referral data by type reveals important qualitative dimensions of the referral trend (Table 2). Elective or planned referrals constituted the largest and fastest-growing category, increasing from 1,421 in 2021 to 3,205 in 2024 — a growth of 125.5% over three years. This pattern suggests that beyond emergency care access, UHC has enabled patients with chronic and complex conditions to navigate the referral pathway for planned specialist consultations, a service largely inaccessible to uninsured populations prior to JKN.

Table 2. Distribution of Referral Types at RSUD Poso, 2021–2024

Referral Type	2021 (n)	2022 (n)	2023 (n)	2024 (n)
Emergency (non-elective)	987	1,248	1,609	2,021
Elective/Planned	1,421	1,890	2,498	3,205
Back-Referral (from RSUD)	448	604	890	1,192
Total	2,856	3,742	4,997	6,418

Source: RSUD Poso Referral Register, 2021–2024

Emergency referrals also increased steadily, reflecting growing confidence among primary care providers in using the formal referral pathway — an institutional behavior change attributable at least in part to JKN's standardization of referral procedures and documentation requirements. Back-referrals (from RSUD Poso back to primary facilities upon stabilization) grew from 448 in 2021 to 1,192 in 2024, suggesting that the integration of reverse referral pathways within the JKN system has improved care continuity, consistent with BPJS Kesehatan's Chronic Disease Management Program (Program Rujuk Balik, PRB).

The diagnostic profile of referrals reflects the epidemiological reality of non-communicable disease (NCD) burden in Central Sulawesi (Table 3). Cardiovascular diseases emerged as the leading diagnostic category, accounting for 24.7% of all referrals in 2024, followed by neoplasms (18.5%) and endocrine/metabolic disorders including diabetes mellitus (15.3%). This concentration of NCD-related referrals aligns with global trends in LMIC health systems undergoing epidemiological transition, where expanding insurance coverage disproportionately benefits patients with chronic conditions who previously lacked financial access to specialist care. Qalby et al. (2024) reported a similar post-NHI surge in

cardiovascular disease hospitalizations at Indonesian referral hospitals, attributing this to the removal of financial barriers among previously uninsured NCD patients.

Table 3. Referral Distribution by ICD-10 Diagnostic Category, RSUD Poso, 2022–2024

Diagnosis Category (ICD-10)	2022 (%)	2023 (%)	2024 (%)
Cardiovascular diseases (I00–I99)	21.4	23.1	24.7
Neoplasms/Cancer (C00–D49)	14.8	16.2	18.5
Endocrine/Diabetes (E00–E90)	13.6	14.1	15.3
Musculoskeletal (M00–M99)	10.2	10.9	11.4
Genitourinary (N00–N99)	9.7	9.9	10.1
Other diagnoses	30.3	25.8	20.0

Source: RSUD Poso Medical Records Department, 2022–2024

Referral Quality and Compliance Indicators

Beyond volume, this study assessed quality dimensions of the referral process at RSUD Poso (Table 4). Documentation completeness — encompassing the presence of a valid referral letter, diagnosis code, supporting clinical summary, and BPJS verification number — improved from 67.3% in 2021 to 88.2% in 2024. This improvement reflects the progressive internalization of JKN administrative requirements by both primary care providers and hospital reception staff, facilitated by BPJS Kesehatan training programs and the digitization of referral processing through the P-Care and V-Claim online systems.

Table 4. Referral Quality and Process Compliance Indicators, RSUD Poso, 2021–2024

Indicator	2021	2022	2023	2024
Referrals with complete documentation (%)	67.3	74.1	81.6	88.2
Appropriate diagnosis-based referrals (%)	71.8	76.4	83.0	89.7
Patient satisfaction score (1–5 scale)	3.4	3.6	3.8	4.1
Average waiting time at RSUD (days)	4.2	3.8	3.1	2.7

Source: RSUD Poso Medical Records and Patient Survey Data, 2021–2024

Diagnosis-appropriate referrals — measured as the proportion of referrals where the referring Puskesmas diagnosis was confirmed or appropriately escalated by the receiving specialist — increased from 71.8% in 2021 to 89.7% in 2024. This improvement is consistent with findings by Handayani et al. (2021), who found that digital online referral compliance within the JKN system gradually improved as primary care providers became more familiar with referral eligibility criteria and clinical competency thresholds. Nevertheless, the persistence of a 10.3% rate of clinically non-indicated referrals in 2024 underscores the continued need for primary care capacity strengthening and clinical guideline adherence.

Patient satisfaction scores with the referral process increased from 3.4 to 4.1 on a 5-point scale over the study period, while average waiting times from referral issuance to specialist consultation decreased

from 4.2 days to 2.7 days. These improvements suggest that operational efficiencies in the referral pathway have been realized as the system matured. However, key informant interviews revealed persistent concerns about bed availability pressure, particularly in internal medicine and cardiology wards, where occupancy rates routinely exceeded 90% in 2023–2024. This bed pressure reflects the broader challenge identified by English et al. (2024), who argued that first referral hospitals under UHC systems face a 'silent crisis' of capacity inadequacy as demand outpaces infrastructure investment.

Implications for Health System Strengthening

The findings of this study carry important implications for health policy and hospital management at RSUD Poso and for analogous regional hospitals across Indonesia. First, the evidence confirms that UHC implementation has achieved its primary objective of expanding access to specialist care for previously underserved populations in Poso Regency — a social equity gain that should not be understated. The near-tripling of annual referral volumes between 2020 and 2024 represents a democratization of specialist healthcare access that would have been unthinkable in the pre-JKN era.

Second, however, the findings expose a fundamental tension between demand expansion and supply adequacy that characterizes UHC implementation in resource-limited hospital settings. As Rogge (2026) and Cheng et al. (2025) observed in national-level analyses of Indonesia's JKN system, expanded coverage induces utilization increases that often exceed the absorptive capacity of the health system, particularly in peripheral and disadvantaged regions. RSUD Poso's experience embodies this tension, with referral volumes growing at rates that significantly outpace corresponding increases in staffing, bed capacity, and diagnostic infrastructure.

Third, the study highlights the critical role of the primary care gatekeeping function within the JKN referral system. The persistence of clinically non-indicated referrals — even as overall compliance improved — points to remaining capacity gaps at the Puskesmas level, including limited specialist diagnostic equipment, inadequate drug formularies, and physician workload pressures. Strengthening primary care capacity is therefore not merely an efficiency measure but a prerequisite for the sustainable delivery of UHC in Poso and similar settings. Nurfikri and Roselina (2022) found that referral ratios remain substantially above BPJS Kesehatan benchmarks at many Indonesian primary health centers, a finding mirrored in the Poso context.

Finally, the geographic dimension of the referral challenge at RSUD Poso warrants specific attention. Poso Regency's mountainous topography and dispersed rural population mean that patients from remote sub-districts often face multi-hour journeys to reach the hospital, incurring significant transportation costs even with JKN coverage for clinical services. This is consistent with findings by Garchitorena et al. (2021) on geographic barriers to UHC in rural Madagascar, and by Wenang et al. (2021) on primary care accessibility challenges in remote Indonesian populations. Integrated telemedicine-referral hybrid models and strengthened district-level health posts could partially mitigate these geographic access challenges.

Qualitative Findings from Key Informant Interviews

To complement and contextualize the quantitative referral trends presented above, thematic analysis of the 12 key informant interviews — following the Braun and Clarke (2006) six-phase framework — identified four recurring themes that help explain the mechanisms underlying the observed increase in referral volume and the accompanying gains and strains in referral quality. Coding was performed iteratively by two members of the research team, with discrepancies resolved through consensus discussion, until no new codes emerged from successive transcripts (thematic saturation reached at the tenth interview).

Table 5. Themes Identified from Thematic Analysis of Key Informant Interviews (n = 12)

Theme	Description	Illustrative Excerpt
1. Insurance as an enabler of “permission to be referred”	Clinicians and administrators described JKN coverage as removing patients' hesitation to accept a referral, framing it less as a financial decision and more as a routine clinical step once available.	“Before JKN, patients would ask how much a specialist visit costs before agreeing to go. Now they just ask when.” — Puskesmas physician
2. Digitization as a double-edged improvement	Informants credited P-Care and V-Claim with the rise in documentation completeness (Table 4), but also described the systems as adding administrative workload for reception and referring staff, particularly during periods of poor internet connectivity.	“The system helps us track referrals properly, but when the network is down in the sub-districts, we still fall back to paper and enter it later.” — BPJS Kesehatan officer
3. Bed-capacity strain as the visible ceiling of UHC success	Department heads in internal medicine and cardiology consistently identified bed and specialist availability, not funding, as the binding constraint on further improving referral responsiveness — corroborating the >90% occupancy figures reported in Section 3.3.	“We no longer turn patients away for cost. Now we sometimes have to turn them away because there is no bed.” — Head of Internal Medicine
4. Persistent non-indicated referrals attributed to Puskesmas capacity gaps	Both hospital specialists and BPJS officers linked the residual 10.3% non-indicated referral rate (Section 3.3) to specific, nameable gaps at primary care level — missing diagnostic tools and thin specialist coverage in outlying Puskesmas — rather than to physician unwillingness to manage cases locally.	“Some of my colleagues in the mountain Puskesmas simply don't have the ECG or the lab tests to be confident managing a case, so they refer to be safe.” — BPJS Kesehatan officer

Source: Thematic Analysis of Key Informant Interviews (n = 12), March–April 2025

Read together, these four themes triangulate directly with the quantitative indicators reported in Sections 3.1–3.3. Theme 1 substantiates the demand-side mechanism proposed in the conceptual framework (Section 2.5), offering an experiential account of how removing the cost barrier translated into the observed rise in referral rate from 12.0% to 21.7%. Theme 2 explains part of the mechanism behind the documentation-completeness gains in Table 4, while also surfacing an operational limitation — connectivity gaps in remote sub-districts — that is not visible in the aggregate compliance statistics alone. Theme 3 provides qualitative corroboration for the >90% ward occupancy figures noted in Section 3.3, reframing them from an isolated statistic into a consistently voiced institutional concern among clinical leadership. Theme 4 offers an explanatory account for the residual 10.3% non-indicated referral rate, attributing it primarily to diagnostic and staffing gaps at the Puskesmas level rather than to inappropriate referral behavior, which sharpens the policy recommendation in Section 4 to prioritize equipment and specialist deployment over compliance enforcement alone.

CONCLUSIONS

This study provides robust empirical evidence that UHC implementation through the JKN program has significantly increased patient referral volumes at RSUD Poso, Poso Regency, Central Sulawesi. Referral rates grew from 12.0% in 2020 to 21.7% in 2024, with the proportion of JKN-covered referrals reaching 89.2% by 2024. Elective referrals for non-communicable diseases — particularly cardiovascular conditions, neoplasms, and diabetes — dominated the diagnostic profile. Quality indicators improved progressively, with documentation completeness rising to 88.2% and average waiting times declining to 2.7 days. Thematic analysis of key informant interviews corroborated these quantitative trends, identifying insurance-enabled health-seeking behavior, the operational trade-offs of referral digitization, bed-capacity strain, and Puskesmas-level diagnostic gaps as the primary mechanisms underlying both the referral surge and its accompanying quality and capacity challenges.

These findings demonstrate that UHC has meaningfully democratized access to hospital specialist services in a remote, post-conflict region of Indonesia — representing a significant equity gain. However, the study also reveals emerging capacity pressures, including high ward occupancy rates and a persistent proportion of clinically non-indicated referrals, that must be addressed to sustain the gains of UHC expansion. Key policy recommendations include: (1) increasing RSUD Poso's physical and human resource capacity proportionate to projected referral growth; (2) strengthening Puskesmas-level clinical capabilities to reduce non-indicated referrals; (3) expanding BPJS Kesehatan's digital referral monitoring to improve real-time oversight; and (4) developing integrated care pathways for high-burden NCD categories that rationalize referral flows and support back-referral to primary care.

Future research should employ longitudinal cohort designs to assess the clinical outcomes of JKN-referred patients at RSUD Poso and should expand the analytical scope to include the cost-efficiency dimensions of the referral system. Comparative studies across multiple RSUD facilities in Central Sulawesi would further strengthen the policy evidence base.

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