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The Impact of Universal Health Coverage (UHC) Implementation on Access and Quality of Primary Health Care in Indonesia: A Scoping Review of Policy and System Transformation (2015–2025)

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ABSTRACT

The review used a scoping design to map how Indonesia's JKN system has shaped access to and quality of primary care. It relied on JBI guidance and PRISMA-ScR standards, using the 5A access model and the Institute of Medicine's quality domains to frame the analysis. A systematic search of Scopus and PubMed (2015–2025) captured studies on JKN policy tools such as capitation, gatekeeping, digital health, and chronic care programs. Articles were screened in two stages, charted in a structured table, and synthesized thematically to reflect regional patterns, policy effects, and equity variations across Indonesia. Ethical approval was not required. The review found 35 eligible studies from 236 initial records, covering diverse designs and regions across Indonesia. Overall, JKN has expanded primary care use and strengthened financing, but equity in service quality still lags, especially in remote provinces. Gatekeeping is taking shape, yet over-referral and weak clinical capacity persist. Programs like capitation, PROLANIS, and digital tools have improved processes, though outcomes in non-communicable and maternal health remain modest. Patient experience is uneven, with issues of privacy, communication, and long waits. Regional gaps are clear, and poorer or subsidized groups continue to face lower-quality care despite higher utilization..

1. INTRODUCTION

Equitable, high-quality, and sustainable health is the cornerstone of national development. Since Universal Health Coverage (UHC) was established as one of the targets of the Sustainable Development Goals (SDGs) in 2015, many middle-income countries have sought to expand health insurance coverage while maintaining fiscal sustainability and service quality. Indonesia represents one of the world's largest health financing transformations with the launch of the *Jaminan Kesehatan Nasional* (JKN, National Health Insurance) in 2014 (Wenang et al., 2021). The program consolidated more than 300 fragmented insurance schemes into a single national social protection system and now covers over 95% of the population (BPJS Kesehatan, 2025). However, this expansion raises a critical question: to what extent has JKN's implementation truly improved the quality of access and primary health care (PHC) services?

JKN is expected not only to broaden membership but also to strengthen the role of first-level facilities as the frontline of Indonesia's health system (Barber et al., 2025). Through *capitation* and performance-based capitation (*kapitasi berbasis kinerja*—KBK), the policy is designed to promote efficiency, improve referral behavior, and enhance preventive and promotive orientations within communities (Eichler et al., 2018). Yet, evidence across studies remains mixed. While the utilization of primary care facilities has roughly doubled compared to higher-level facilities—indicating that gatekeeping functions are taking hold—imbalances in human resources and infrastructure continue to erode quality equity, particularly in remote and impoverished regions (Wenang et al., 2021).

In service delivery, improved access has not been consistently followed by better clinical quality. For example, in cancer care, the availability of general practitioners at primary care facilities correlates with reduced unnecessary referrals and improved upstream coverage. However, cross-district patient migration and excessive referrals to class-A hospitals still reflect downstream inefficiencies (Schaefers et al., 2022). Similarly, for tuberculosis management, most uncomplicated cases are still treated in hospitals—indicating financial disincentives and limited clinical capacity at the primary level (O'Connell et al., 2025).

The quality of primary care should not be assessed solely by visit frequency but also by the system's ability to guarantee the five dimensions of access as articulated in the 5A framework—availability, accessibility, accommodation, affordability, and acceptability—and the six dimensions of quality defined by the Institute of Medicine (IOM): safe, effective, patient-centered, timely, efficient, and equitable (Donabedian, 2005). Studies indicate that availability and affordability have improved through membership and capitation schemes, yet acceptability and patient-centeredness remain constrained by consultation privacy, limited communication, and perceptions of primary care as a "second-class" service (Pratiwi et al., 2022; Mulyanto et al., 2023).

Moreover, geographic and social disparities continue to be structural challenges to achieving UHC in Indonesia. Wenang et al. (2021) identified three PHC inequity clusters: (1) *remote high-poor* regions (Papua, Maluku, NTT) characterized by severe human resource and infrastructure deficits; (2) *remote low-poor* regions (Sulawesi, Kalimantan) demonstrating moderate progress in accommodation but unstable clinical quality; and (3) *non-remote urban* regions (Java–Bali–Sumatra) with greater efficiency and timeliness but declining equity due to socioeconomic gaps. Handayani et al. (2023) further showed that *Penerima Bantuan Iuran* (PBI, premium assistance beneficiaries) utilize primary services twice as often as non-PBI members, yet they experience longer waiting times and lower clinical quality—signifying that financial access does not automatically translate into equitable quality.

In chronic care, the *PROLANIS* program has improved adherence to process indicators and visit frequency, but it has not led to significant gains in clinical outcomes such as glycemic or blood pressure control (Mulyanto et al., 2023; Prabowo et al., 2023). Similar disparities persist across hypertension and diabetes programs, particularly between urban and rural areas (Astuti et al., 2024). In maternal health, most maternal deaths occur within health facilities, reflecting bottlenecks in clinical quality for sepsis and hypertensive disorder management (Anggondowati et al., 2022). These findings underscore that UHC's main challenge lies not merely in expanding access but in ensuring equitable and sustainable clinical quality.

System modernization through digitalization—such as P-Care, Sisrute, and telemedicine—has begun to enhance timeliness, efficiency, and referral coordination. O'Connell et al. (2025) found that digitalization expedited tuberculosis case reporting and reduced service costs by up to 36%. Nevertheless, limitations in digital infrastructure and workforce competence, particularly in rural areas, hinder the full potential of this transformation. Likewise, the *National Formulary* (*Formularium Nasional*, Fornas) policy has improved the availability and safety of essential medicines (International Pharmaceutical Federation, 2021), yet stock-outs and supply-chain variations persist in remote regions, potentially undermining clinical effectiveness.

Taken together, empirical evidence over the past decade illustrates a dual trajectory of UHC/JKN in Indonesia—an impressive expansion of access unmatched by equitable quality distribution. Geographic inequities, facility-level capacity variations, and disparities in patient experiences remain barriers to achieving true UHC. Thus, a comprehensive synthesis is needed to map existing evidence and identify knowledge gaps in policy and practice at the PHC level. Accordingly, this *scoping review* aims to map the scientific evidence on the impact of UHC/JKN implementation on the quality of access and service delivery in Indonesia's primary health care (PHC/FKTP) from 2014 to 2025. Specifically, this review explores : Which UHC/JKN policy

components most influence the 5A and IOM dimensions; (i) Regional and vulnerable-group variations in these effects; (ii)Trends early JKN and UHC era implementation; and remaining evidence gaps for future research agendas.The findings are expected not only to provide an empirical evidence map but also to generate evidence-informed insights to guide policy reforms toward a stronger, fairer, and more sustainable primary health care system.

2. METHOD

2.1 Study Design

This review employed a scoping review approach to map and synthesize evidence on how Indonesia's National Health Insurance (JKN) has influenced access and quality of primary health care. The approach was chosen because the UHC–PHC topic encompasses diverse policy levers, heterogeneous study designs, and mixed empirical findings across regions. The methodology followed the Joanna Briggs Institute guidance for scoping reviews, while reporting was aligned with PRISMA-ScR standards to ensure transparency and reproducibility. The review pre-specified the analytical framework, data sources, screening criteria, data charting, and synthesis procedures to maintain methodological rigor.

2.2 Conceptual Framework and Analytic Approach

Analysis was guided by two complementary frameworks. Access was analyzed through the 5A framework—availability, accessibility, accommodation, affordability, and acceptability—while quality of care was assessed according to the Institute of Medicine's six domains: safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity. These frameworks were applied to key JKN policy components influencing primary health care, including coverage expansion, capitation and performance-based capitation, gatekeeping and referral arrangements, the National Formulary, digital health innovations such as P-Care and telemedicine, and the chronic disease management program PROLANIS. This integrated framework enabled a comprehensive understanding of how JKN policy instruments shape access, service quality, clinical outcomes, and patient experiences in primary care settings.

2.3 Search Strategy

A systematic search was conducted in Scopus and PubMed databases. The search covered publications from 1 January 2015 to 31 December 2025 to align with the implementation and consolidation phases of JKN within Indonesia's UHC agenda. Searches were performed in October 2025. For PubMed, the strategy combined Medical Subject Headings (MeSH) and Title/Abstract terms encompassing four conceptual clusters: (1) the country identifier Indonesia; (2) UHC and JKN terminology such as "Universal Health Coverage", UHC, "National Health Insurance", JKN, BPJS, capitation, gatekeeping, referral, and P-Care; (3) primary care–related terms such as "primary health care", "primary care", puskesmas, "first level care", "family practice", and clinic; and (4) access and quality outcome terms reflecting the 5A and IOM frameworks—access, availability, accessibility, accommodation, affordability, acceptability, quality, effectiveness, safety, patient-centeredness, timeliness, efficiency, and equity. Filters for English language and publication year were applied. For Scopus, equivalent Boolean combinations were adapted to the TITLE-ABS-KEY structure with the same four conceptual clusters, restricted to English-language publications between 2015 and 2025. Full search strings are detailed in Supplementary Material S1 to enable replication.

2.4 Study Selection

Study screening followed PRISMA-ScR procedures in two stages. Titles and abstracts were first screened for relevance to JKN and primary care in Indonesia and for inclusion of at least one access or quality dimension. Potentially eligible full-text articles were then reviewed against predefined inclusion and exclusion criteria. Studies were included if they (1) presented original empirical findings using quantitative, qualitative, or mixed methods; (2) focused on JKN or UHC in relation to first-level facilities; (3) examined at least one 5A or IOM quality domain; (4) were

conducted in Indonesia; and (5) were published in English during the study period. Policy briefs, commentaries, and non-empirical papers were excluded, as were hospital-only or private-sector studies lacking clear linkage to primary care. Two reviewers independently performed screening and resolved disagreements by consensus to minimize bias.

2.5 Data Charting and Synthesis

Eligible studies were systematically charted into a structured table capturing citation details, study design, objectives, setting, population, JKN components assessed, mapped 5A and IOM dimensions, main findings, effect directions and magnitudes (where available), study limitations, and policy implications. Thematic synthesis was employed. First, studies were grouped by JKN policy component to identify intra-component patterns (coverage expansion, capitation/KBK, gatekeeping/referral, formulary and medicines, digital health, and chronic care management). Second, findings were mapped across the 5A and IOM dimensions to detect which aspects of access and quality were most consistently affected. Finally, cross-regional and subgroup analyses were performed to highlight geographical heterogeneity and equity differences across Indonesia's health system.

2.6 Ethics and Transparency

As this review synthesized existing published literature, no new ethical approval was required. The process emphasized methodological transparency through independent dual screening, consensus-based data extraction, and publication of the full charting table as supplementary material to enhance reproducibility and auditability. Reporting adheres to PRISMA-ScR guidelines consistent with best practices for scoping reviews on UHC reforms

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3. RESULT AND DISCUSSION

3.1 Study Selection and Characteristics

The systematic search yielded a total of 236 records, comprising 183 articles retrieved from Scopus and 53 from PubMed. After removing duplicates and assessing record completeness, 121 full-text articles were screened for eligibility, of which 35 met all inclusion criteria and were retained for the final synthesis. The overall selection process is illustrated in the PRISMA flow diagram (Figure 1). The included studies employed diverse research designs, including cross-sectional analyses, quasi-experimental evaluations, mixed-method case studies, and qualitative inquiries. The geographic scope of the studies covered both urban and rural contexts, spanning Java–Bali, Sumatra, Kalimantan, Sulawesi, Nusa Tenggara, Maluku, and Papua. Most publications were released between 2018 and 2025, aligning with the consolidation phase of Indonesia's National Health Insurance (JKN) implementation toward Universal Health Coverage (UHC).

3.2 General Impact of UHC/JKN on Access and the Quality of Primary Health Care

The implementation of Indonesia's National Health Insurance (JKN) has transformed the health financing system from fragmented coverage schemes into a more unified and comprehensive national framework. However, equitable quality has not yet been fully achieved. Nationally, the utilization of primary health care facilities (FKTP) has surpassed advanced hospital facilities (AHF), suggesting that gatekeeping functions are gradually taking hold. Yet, disparities in human resources and infrastructure continue to erode equity in service quality, particularly in remote and low-income provinces (Wenang et al., 2021). In cancer care, the presence of general practitioners in primary care correlates with reduced unnecessary referrals and greater upstream service coverage. Conversely, cross-provincial patient migration and frequent up-referrals to tertiary hospitals indicate downstream inefficiency (Schaefers et al., 2022). For tuberculosis, services remain hospital-centered, with many non-complicated cases still referred from primary care—signaling a combination of payment disincentives and insufficient clinical capacity at the primary level (O'Connell et al., 2025). Patient experience is also uneven; limited consultation privacy and poor communication undermine acceptability and hinder patient-centeredness and even safety (Pratiwi et al., 2022).

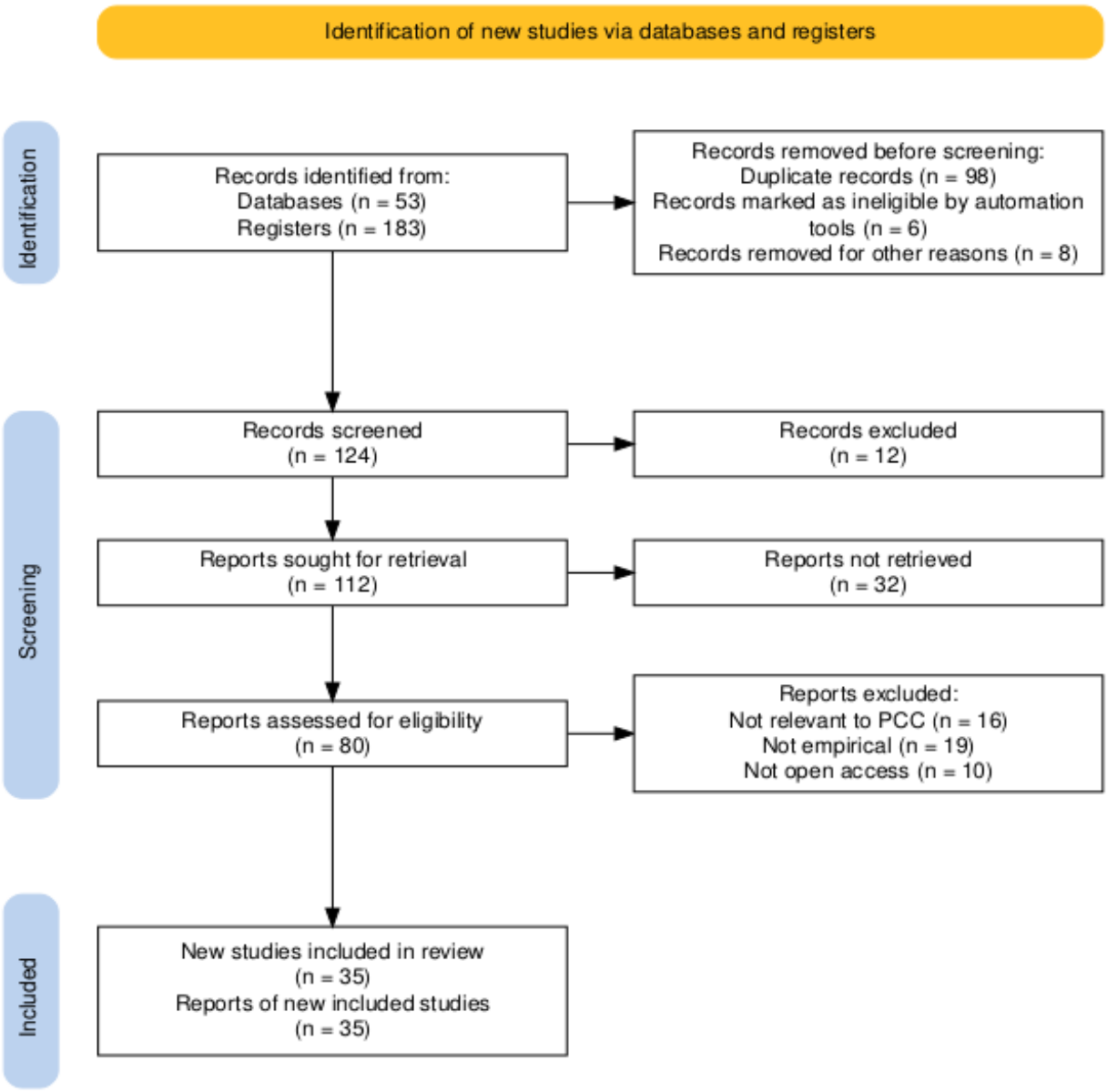

Figure 3.1 PRISMA flow chart

Financing reforms have improved processes, but clinical outcomes remain only partially achieved. Capitation and performance-based capitation (KBK) have increased service contact frequency, strengthened preventive and promotive activities, and reduced under-spending. However, over-referral patterns have not consistently declined, and effects on clinical outcomes remain relatively modest (Eichler et al., 2018; Barber et al., 2025). In non-communicable disease management, particularly the PROLANIS program, process compliance has improved, but HbA1c and blood pressure control remain low and vary substantially between urban and rural areas—reflecting the influence of clinical capacity, health literacy, and community support (Mulyanto et al., 2023; Prabowo et al., 2023). In maternal health, the fact that most maternal deaths occur in health facilities highlights issues of clinical quality along the referral chain (sepsis and pregnancy-induced hypertension), rather than merely access (Anggondowati et al., 2022).

Table 1: General Impact of UHC/JKN on the 5A Access Dimensions and the IOM Quality Domains

Domain	Impact and Mechanism	Indicators / Locus	Reference
Availability	Upstream service availability increased, but disparities in human resources and infrastructure in remote regions constrain comprehensive care.	Low doctor/nurse ratios in Papua and NTT; high workload in urban primary care centers.	Wenang et al. (2021)
Accessibility	Membership, particularly among subsidized groups (PBI), reduced financial barriers and expanded reach, though geographic obstacles remain.	Higher utilization at FKTP compared with hospitals; long travel distance and transport challenges in island areas.	Wenang et al. (2021)
Accommodation	Gatekeeping clarified service flow and referral hierarchy, yet back-referral mechanisms remain weak.	Back-referral rates below 5% for several services.	Schaefers et al. (2022)
Affordability	The JKN scheme reduced out-of-pocket expenditures and improved budget absorption efficiency through KBK.	Decrease in under-spending; tuberculosis treatment costs lowered.	Eichler et al. (2018); O'Connell et al. (2025)
Acceptability	Inconsistent consultation privacy and weak provider–patient communication lowered service acceptability.	Long queues and inadequate consultation space.	Pratiwi et al. (2022)

Safe/Effective	Clinical standards improved in selected programs, yet outcomes in NCD and maternal health remain suboptimal.	Stagnant HbA1c/blood pressure indicators; sepsis and pregnancy-induced hypertension remain leading causes.	Mulyanto et al. (2023); Anggondowati et al. (2022)
Timely/Efficient	P-Care and telemedicine enhanced reporting timeliness and referral coordination, improving overall efficiency.	Faster tuberculosis reporting; treatment episode costs reduced by approximately 36%.	O'Connell et al. (2025)
Equitable	Coverage among subsidized members increased, but quality remains lower compared with non-PBI groups, and the urban–rural gap has widened.	Longer waiting times for PBI members compared with non-PBI.	Wenang et al. (2021)

3.3 Components of UHC/JKN Influencing the 5A and IOM Domains

Membership expansion has enhanced financial access and reach but has not automatically translated into perceived quality improvements. Coverage expansion—particularly among premium-assisted (PBI) members—has increased affordability and accessibility, yet suboptimal waiting times, privacy, and communication have reduced acceptability and patient-centeredness, leaving quality equity only partial (Wenang et al., 2021). Capitation and performance-based capitation (KBK) have improved efficiency and process timeliness but inconsistently reduced over-referral and have had limited effects on clinical outcomes due to small, uniform, and non–risk-adjusted incentives (Eichler et al., 2018; Barber et al., 2025). Gatekeeping and tiered referrals have clarified care pathways (accommodation) but perceptions of 'second-class care' and clinician administrative burden undermine patient-centeredness, causing many cases suitable for primary care to flow to hospitals (Pratiwi et al., 2022; O'Connell et al., 2025). Digital tools such as P-Care and telemedicine have improved coordination and back-referral efficiency and reduced costs for tuberculosis and chronic disease management, though their overall impact depends on clinical readiness and governance (O'Connell et al., 2025). The National Formulary and pharmaceutical governance have improved medicine availability and safety, yet supply disruptions and substitution variability in remote areas hinder clinical effectiveness (International Pharmaceutical Federation, 2021). PROLANIS has increased process adherence, but clinical outcomes (HbA1c and blood pressure) remain inconsistent—especially in rural areas—reflecting gaps in clinical capability and community support (Mulyanto et al., 2023; Prabowo et al., 2023).

Table 2: Key Component of UHC/ JKN in Relation to 5A and IOM Frameworks

UHC/JKN Component	Dominant 5A and IOM Dimensions	Mechanism and Direction of Influence	Reference
Membership (PBI/non-PBI)	Affordability, Accessibility; Equitable (partial)	Membership expansion widens financial access, particularly for PBI members, but long queues, limited privacy, and weak communication reduce acceptability and patient-centeredness, resulting in partial quality equity.	Wenang et al. (2021)
Capitation / Performance-based Capitation (KBK)	Accommodation, Timely; Efficient	KBK strengthens promotive–preventive care, regular contact, and efficient fund absorption, but over-referral remains high and clinical outcomes modest due to small, uniform, non–risk-adjusted incentives.	Eichler et al. (2018); Barber et al. (2025)
Gatekeeping / Tiered Referral	Accessibility, Accommodation; Timely, Patient-centered (limited)	Referral pathways have become clearer, but perceptions of secondary quality and administrative burden reduce comfort and patient engagement; many manageable cases still flow to hospitals.	Pratiwi et al. (2022); O'Connell et al. (2025)
P-Care / Telemedicine	Timely; Efficient, Effective	Digitalization accelerates reporting and back-referral for TB and NCDs and reduces costs per episode;	O'Connell et al. (2025)

		overall effect depends on readiness of workforce, infrastructure, and governance.	
National Formulary / Pharmacy	Availability; Safe	Standardized formularies and pharmaceutical governance strengthen medicine availability and safety; however, stockouts and substitutions in remote regions limit conversion to clinical effectiveness.	International Pharmaceutical Federation (2021)
PROLANIS (Diabetes / Hypertension)	Accommodation; Effective (partial)	Visits and adherence have increased, yet HbA1c and BP outcomes remain inconsistent, particularly in rural areas, underscoring the need for clinical mentoring and community-based follow-up.	Mulyanto et al. (2023); Prabowo et al. (2023)
Cancer (Role of GP in Primary Care)	Accessibility; Efficient	Availability of general practitioners correlates with reduced unnecessary referrals and earlier detection; however, high up-referral and patient migration across provinces cause downstream inefficiency.	Schaefers et al. (2022)

3.4 Regional and Vulnerable Group Variations

The distribution of primary health care under JKN remains uneven, forming three geographical inequality clusters. Remote high-poverty regions (Papua, Maluku, NTT) exhibit weak availability and accessibility, with low workforce ratios and high referral rates (Wenang et al., 2021).

Remote low-poverty regions (Sulawesi, Kalimantan) demonstrate progress in accommodation (inpatient primary care and P-Care documentation), though clinical quality fluctuates due to variations in staff competency and medicine supply (Wenang et al., 2021). Non-remote urban regions (Java–Bali–Sumatra) display high timeliness and efficiency but decreasing equity due to socioeconomic gaps and bypassing of primary care (Schaefers et al., 2022). Among subsidized groups (PBI), service utilization is twice that of non-PBI members, yet waiting times are longer and consultation privacy and communication poorer, reducing acceptability and patient-centeredness (Wenang et al., 2021). National claims data show longer hospital stays and higher costs for low-income groups at similar disease severity, indicating unequal clinical quality and inefficiencies (Handayani et al., 2023). Facility readiness in rural and island areas remains lower despite broader accreditation (Haemmerli et al., 2021)

Table 3: Regional and Vulnerable Group Variations

Cluster / Group	Affected 5A / IOM Dimensions	Findings	Reference
Remote high-poverty (Papua, Maluku, NTT)	Availability, Accessibility ↓; Timely, Efficient ↓	Severe workforce and infrastructure shortages; long distances and difficult transport cause high referral rates and weak gatekeeping, limiting primary care's ability to retain cases.	Wenang et al. (2021)
Remote low-poverty (Sulawesi, Kalimantan)	Accommodation ↑; Effective fluctuating	Inpatient services and P-Care documentation improve pathways, but clinical quality remains unstable due to varying staff competencies and medicine availability.	Wenang et al. (2021)
Non-remote urban (Java–Bali–Sumatra)	Timely, Efficient ↑; Equitable ↓	Better resources and infrastructure support efficiency, but socioeconomic disparity and bypassing behavior reduce equity in care.	Schaefers et al. (2022)

Subsidized group (PBI)	Accessibility, Affordability ↑; Acceptability, Patient-centered ↓	Higher use frequency but poorer privacy, communication, and waiting experience lead to partial quality equity.	Wenang et al. (2021)
Rural / island regions	Availability, Safety ↓	Service readiness and staff competency remain below urban levels; accreditation expansion has not yet closed the quality gap.	Haemmerli et al. (2021)

3.5 Reform Timeline and Emerging Trends (2015-2025)

Indonesia's health system reform since 2015 shows a gradual shift from access expansion to financial efficiency and, more recently, to digital quality improvement in primary care. The reform trajectory can be grouped into four interlinked phases. The first phase (2014–2016) marked rapid expansion in JKN membership, with increased use of primary care facilities over referral hospitals—a sign that gatekeeping functions began to take shape. However, primary care clinical and managerial readiness lagged behind, showing substantial variation in capacity and quality (Wenang et al., 2021). The second phase (2017–2019) focused on consolidation and efficiency through performance-based capitation, strengthening preventive care, patient contact, and reducing under-spending (Eichler et al., 2018), though coordination between care levels remained weak (Schaefers et al., 2022).

The third phase (2020–2021) coincided with the COVID-19 pandemic, testing JKN's resilience. Disruptions to chronic disease programs were significant, yet digital platforms such as P-Care and Sisrute enhanced reporting speed and maintained service timeliness under movement restrictions (Mulyanto et al., 2023; Prabowo et al., 2023). The post-pandemic phase (2022–2025) transitioned toward efficiency and digital-driven quality improvement. Strategic purchasing in tuberculosis care shifted non-complicated cases from hospitals to primary care, saving costs and improving timeliness (O'Connell et al., 2025). Telemedicine further improved continuity of chronic care, though optimal outcomes depend on clinical governance readiness. Cross-country evidence emphasizes that uniform, non–risk-adjusted performance incentives may weaken motivation among low-capacity providers; thus, future financing reforms should adopt risk-adjusted, progressive, and transparent incentive structures (Barber et al., 2025)

Table 4: Reform Timeline and Key Signals (2015-2025)

Phase	Central Component	Reform Focus	Dominant IOM Domains	Key Signals	References
2015–2016	JKN membership expansion	Population-wide coverage expansion	Equitable; Timely	Utilization at first-level primary care surpassed advanced hospital facilities, signalling early gatekeeping; yet primary care clinical readiness lagged and remained uneven across regions.	Wenang et al. (2021)
2017–2019	Performance-based capitation (KBK)	Efficiency and stronger promotive–preventive orientation	Efficient; Effective (process)	Under-spending declined and regular patient contacts increased; nonetheless, over-referral to higher-level hospitals remained high in many services.	Eichler et al. (2018)
2020–2021	P-Care and Sisrute digital platforms	Digitalization and system resilience during COVID-19	Timely; Efficient	Reporting accelerated and referral tracking improved; continuity of chronic NCD care was disrupted during the pandemic period.	Mulyanto et al. (2023); Prabowo et al. (2023)
2022–2025	Strategic purchasing for tuberculosis; telemedicine	Primary care strengthening and cost efficiency	Efficient; Effective	Non-complicated TB cases shifted from hospitals to primary care and per-episode costs fell by	O'Connell et al. (2025); Barber et al. (2025)

			approximately thirty-six percent; risk-adjusted performance incentives are needed to sustain gains.	

3.6 Evidence Gaps for the Research Agenda

Although access and process efficiency have improved, concrete evidence on population-level clinical outcomes remains limited. Key evidence gaps include weak linkage between process adherence and clinical results in PROLANIS, lack of maternal clinical quality audits across referral chains, and limited data on digital health's impact on referral accuracy and cost reduction. Vulnerable populations—such as persons with disabilities, informal workers, migrants, and indigenous communities—are underrepresented in quality evaluations. Pharmaceutical supply chains in remote areas remain fragile, with inconsistent medicine availability and safety. Finally, the design of performance incentives remains flat and risk-insensitive, reducing behavioral motivation among low-capacity facilities. Strengthening evidence in these domains is crucial to guide risk-adjusted, equity-oriented, and outcome-driven health reforms.

Table 5: Evidence Gaps and Future Research Agenda

Evidence Area	Availability of Studies	Quality of Evidence	Identified Gaps	Recommended Research Direction
Clinical Outcomes of PROLANIS (HbA1c / Blood Pressure)	High (≥8 studies)	Process-focused; limited outcome evidence	Existing studies primarily evaluate process adherence, with few longitudinal or outcome-based assessments. No national-level evaluations linking PROLANIS intensity to measurable health outcomes are available.	Conduct multi-regional quasi-experimental studies incorporating risk adjustment to examine the relationship between PROLANIS implementation intensity and changes in HbA1c or blood pressure over 12–24 months.

Maternal Clinical Quality	Moderate (4 studies)	Descriptive observational	No comprehensive audit exists linking referral-chain quality with clinical outcomes and adherence to maternal care protocols.	Implement multi-facility clinical audits connecting primary-to-tertiary referral data with outcome measures (e.g., management of preeclampsia, sepsis, or postpartum hemorrhage).
P-Care and Telemedicine	Low (3 studies)	Descriptive and fragmented	The impact of digital tools on diagnostic accuracy, cost reduction, and back-referral performance has not been quantified at the national level.	Perform big-data linkage analysis integrating JKN claims, Sisrute, and P-Care logs to evaluate effects on diagnostic precision, referral turnaround, and episode-level costs.
Vulnerable Populations (Disability, Migrant, Informal Workers)	Very Low (<3 studies)	Limited qualitative insights	Very few evaluations assess acceptability and patient-centeredness for vulnerable groups, particularly those facing physical, social, or occupational barriers.	Conduct patient experience surveys and participatory co-design studies exploring flexible service hours and accessibility for informal and marginalized populations.
Pharmaceutical Supply and Formulary Implementation	Moderate (5 studies)	Implementation-focused; limited generalizability	Adaptive logistics models between primary care	Pilot and evaluate adaptive logistics models such as

in Remote Areas		facilities have not been developed or tested; persistent stockouts and substitution issues remain in hard-to-reach areas.	pooled stock systems, seasonal pre-positioning, and performance-based supply contracts to improve last-mile medicine delivery.

This scoping review demonstrates that Indonesia's National Health Insurance (JKN), as a key instrument for achieving Universal Health Coverage (UHC), has successfully expanded financial access and utilization of primary health care (PHC) services. However, the consolidation of clinical quality remains incomplete. National evidence indicates that the utilization of PHC facilities now exceeds advanced hospital facilities, signaling that gatekeeping mechanisms are gradually functioning. Nevertheless, disparities in health workforce distribution and infrastructure continue to undermine equity in service quality, particularly in remote and resource-limited provinces (Wenang et al., 2021). In cancer services, the presence of general practitioners in PHC is associated with a reduction in unnecessary referrals and broader early detection coverage. Conversely, patient migration across provinces and high rates of up-referrals to tertiary hospitals reveal inefficiencies at downstream levels (Schaefers et al., 2022). In tuberculosis, the concentration of care at hospitals and continued referral of uncomplicated cases from PHC facilities indicate both payment disincentives and insufficient clinical capacity in primary care (O'Connell et al., 2025). From a patient-experience perspective, weak consultation privacy and inconsistent clinical communication compromise acceptability, patient-centeredness, and even safety (Pratiwi et al., 2022).

The Indonesian experience aligns with trends observed in several low- and middle-income countries (LMICs), where UHC implementation initially prioritizes financial protection and coverage expansion before achieving consistency in clinical quality. Similar to Kenya and the Philippines, Indonesia's reform yielded measurable improvements in affordability and accessibility, yet outcomes in chronic disease control and maternal mortality remain modest (Boerma et al., 2023). Capitation and performance-based payment systems improved efficiency—reducing under-spending and strengthening promotive-preventive services—but showed limited impact on clinical outcomes and referral coordination (Eichler et al., 2018; Barber et al., 2025). This reflects a broader pattern observed in Ghana and Thailand, where administrative and financial efficiencies preceded gains in health outcomes. Regional disparities in Indonesia also parallel inequities documented in sub-Saharan Africa, where geographic remoteness and infrastructure deficits impede equitable quality under UHC (Ouma et al., 2022).

The findings underscore that expanding coverage without equal attention to service quality risks perpetuating systemic inequities. Financial protection measures should be accompanied by targeted investments in human resource distribution, facility readiness, and digital infrastructure. Persistent inequities between subsidized (PBI) and non-subsidized members—evident in waiting times, privacy, and communication quality—suggest that patient experience must be integrated as a core metric within national UHC performance evaluations. Payment mechanisms should transition from uniform capitation to risk-adjusted and performance-linked incentives that reward both efficiency and quality. Strengthening referral governance, enhancing back-referral mechanisms, and embedding digital clinical decision-support tools in PHC are essential to reducing over-referral, improving continuity of care, and promoting efficiency across the system.

This review identifies critical research gaps that constrain the evidence base for UHC implementation in Indonesia. Future studies should employ longitudinal or quasi-experimental designs to examine the relationship between program intensity and measurable clinical outcomes in chronic disease management, particularly HbA1c and blood pressure control within PROLANIS. Maternal health research should move beyond descriptive facility audits toward integrated evaluations linking referral processes, protocol adherence, and outcomes such as preeclampsia and sepsis management. The impact of digital innovations such as P-Care and telemedicine on diagnostic accuracy, referral coordination, and cost efficiency requires national-level data integration between JKN claims, Sisrute, and PHC clinical records. Furthermore, vulnerable populations—including persons with disabilities, informal workers, migrants, and remote communities—remain underrepresented in quality-of-care assessments and should be prioritized in equity-focused research. Experimental policy trials should also evaluate risk-adjusted, progressive incentive models that can meaningfully influence provider behavior and system performance.

This review provides a comprehensive synthesis of Indonesia's progress toward Universal Health Coverage using the 5A and IOM frameworks. Its strength lies in the integration of financial, clinical, and experiential dimensions, offering a multidimensional view of how JKN influences primary health care delivery. Nevertheless, the review is constrained by the limited availability of longitudinal and outcome-based studies, and the restriction to English-language publications indexed in Scopus and PubMed. Variability in study design and outcome definitions may have introduced heterogeneity that limits cross-study comparability. Despite these limitations, the synthesis provides actionable insights for policymakers and researchers, serving as a foundation for advancing quality-oriented UHC reforms in Indonesia and comparable LMIC contexts.

4. CONCLUSION

Indonesia's journey toward Universal Health Coverage through the National Health Insurance (JKN) scheme represents one of the most ambitious social protection reforms in the Global South. The evidence synthesized in this review shows that while JKN has successfully broadened financial protection and expanded the utilization of primary health care (PHC), the consolidation of service quality remains uneven. Substantial progress has been made in affordability and accessibility, but the dimensions of acceptability, effectiveness, and equity continue to exhibit structural gaps—particularly between urban and remote settings. The persistence of over-referral, weak back-referral mechanisms, and variations in clinical capacity suggest that the strengthening of primary care must now evolve from coverage expansion to quality transformation. These findings reaffirm that the true success of UHC lies not merely in the number of citizens insured but in the consistent delivery of high-quality, equitable, and patient-centered care across all population groups.

To sustain and deepen UHC achievements, Indonesia's health system reforms should now focus on three interconnected domains—governance and accountability, financing and incentives, and service quality improvement. First, governance structures should be strengthened to enhance accountability and coordination between primary and referral levels. Institutionalizing routine quality audits, implementing transparent reporting through digital dashboards, and aligning national and subnational monitoring systems are essential to ensure that quality metrics accompany coverage indicators. Second, financing mechanisms should transition from uniform capitation payments to risk-adjusted and performance-linked models. Incentive designs must reward both efficiency and clinical quality, emphasizing chronic disease control, maternal safety, and continuity of care. Strategic purchasing mechanisms can be further leveraged to redistribute resources toward underperforming and underserved regions. Third, investments in digital infrastructure, telemedicine, and decision-support systems must be expanded to close clinical gaps in remote areas. Programs such as P-Care, Sisrute, and PROLANIS should evolve toward fully integrated platforms connecting clinical data, referral tracking, and patient feedback. Strengthening the competencies of PHC teams—

through continuous professional development, supportive supervision, and community-based engagement—will be critical to ensuring equitable quality improvements. The research agenda should prioritize longitudinal and multi-sectoral studies linking policy design to measurable population outcomes. Evaluating digital health interventions, risk-adjusted payment schemes, and the experiences of vulnerable populations will provide the evidence base for Indonesia's transition from a coverage-oriented to a quality-driven UHC system. The lessons drawn from this trajectory can inform other LMICs pursuing equitable and sustainable pathways to universal health care.

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