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Pusyankes: A Conceptual Framework for Integrated Primary Care Combining People-Centered Medical Home, Population Health Management, and Value-Based Health Care in Indonesia's JKN Context

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ABSTRACT

Background: Despite enrolling over 278 million members, Indonesia's National Health Insurance (JKN) allocates only 11.2% of expenditure to primary care, which lacks the organizational features required to generate system-level benefits. No existing framework integrates People-Centered Medical Home (PCMH), Population Health Management (PHM), and Value-Based Health Care (VBHC) within the JKN context. **Objective:** This study introduces *Pusyankes* as an integrated primary care model and distinguishes between nominal and functional primary care. **Methods:** A three-stage conceptual development approach was applied: synthesis of PCMH, PHM, and VBHC literature; gap analysis against JKN structural constraints; and operational specification to generate testable predictions. **Results:** Pusyankes comprises five dimensions: team-based longitudinal care (PCMH), proactive three-tier population management (PHM), hybrid VBHC financing projecting IDR 22–32 million/month per 2,000-member panel, a seven-domain performance system, and a phased implementation pathway. Three testable predictions are proposed: physician income viability within 24 months, ≥15% reduction in avoidable referrals, and ≥20% improvement in chronic disease outcomes. **Conclusion:** Pusyankes provides a structured pathway to transform nominal primary care into functionally effective delivery. Prospective pilot evaluation is required to validate its impact within the JKN system.

Highlights:

- *Pusyankes* is the first integrated primary care framework for Indonesia's JKN, combining PCMH, PHM, and VBHC into an operational model that shifts focus from nominal to functional primary care delivery.
- The model operationalizes proactive population health management and demand substitution through three-tier risk stratification, supported by a hybrid financing scheme projecting IDR 22–32 million/month per 2,000-member panel, enabling physician income viability.
- Three testable predictions—financial viability within 24 months, ≥15% reduction in avoidable referrals, and ≥20% improvement in chronic disease outcomes—establish a clear empirical validation pathway beyond conceptual frameworks.

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INTRODUCTION

International evidence consistently demonstrates that health systems organized around strong primary care achieve better population health, lower costs, and greater equity.[1,2,3] However, a critical challenge facing many Low- and Middle-Income Countries (LMICs) adopting Universal Health Coverage (UHC) is that the expansion of insurance coverage often outpaces the development of operational quality. Primary care's system-level benefits have been documented across multiple country contexts and income levels: countries with stronger primary care systems exhibit lower all-cause mortality, better management of chronic conditions, and higher population satisfaction with health services.[4,5] The mechanisms underlying these outcomes are well-characterized: first-contact accessibility, longitudinal patient-provider relationships, comprehensiveness, and coordination across care levels.[4] Critically, these mechanisms are organizational achievements — not automatic properties of primary care facility registration — requiring deliberate architectural design of service delivery, team structure, financing, and accountability systems.[1,6]

Indonesia's National Health Insurance program (*Jaminan Kesehatan Nasional*, JKN) represents one of the largest single-payer coverage expansions globally, reaching 278.1 million enrolled members by December 2024.[7] JKN's architecture is explicitly primary care-oriented: every member registers with a designated primary care facility (*Fasilitas Kesehatan Tingkat Pertama*, FKTP) as the mandatory gateway, with specialist referrals requiring FKTP authorization.[8,9] However, JKN's operational reality diverges from this design. The majority of expenditure continues to be concentrated at the referral level, with more than 80% of spending absorbed by secondary and tertiary care, while primary care and promotive–preventive services receive a substantially smaller share[7] Agustina et al.'s landmark review[8] documented JKN's coverage achievements alongside persistent quality and equity gaps; Pisani et al.[9] identified political economy constraints on JKN reform. Both analyses, however, did not systematically address the organizational determinant of underperformance: Indonesian primary care facilities, as currently configured, lack the organizational architecture that converts registered FKTP status into genuinely effective primary care delivery.

Kruk et al.'s quality health systems framework[4] distinguishes between health system coverage — whether people can access care — and health system quality — whether the care delivered generates the health improvements people need. Indonesia has achieved the former; however, the latter remains a persistent challenge at the primary care level, particularly in terms of service quality and effectiveness.[8] The organizational gap is threefold. First, **relational architecture:** most puskesmas operate on open-queue, any-available-physician models that preclude the longitudinal patient-physician relationships central to primary care effectiveness.[4,5] Second, **population management:** service delivery remains predominantly reactive and complaint-based, with limited implementation of proactive population health management approaches, reducing the system's capacity to prevent disease progression and avoid unnecessary referrals.[10,11] Third, **outcome accountability:** JKN's flat-rate capitation provides no financial incentive for quality improvement, innovation, or chronic disease management investment, creating a volume-over-value dynamic that perpetuates the financing paradox.[6,8]

The international literature offers three validated frameworks that individually address components of this organizational gap. The Patient-Centered Medical Home (PCMH) addresses relational architecture and care team structure.[12,13] Population Health Management (PHM) addresses proactive population-level care management and risk stratification.[14,15] Value-Based Health Care (VBHC) addresses outcome measurement and financial accountability alignment.[16,17] No published framework, however, integrates all three into a single operationally specified primary care model designed for a JKN-type mandated primary care environment. This integration gap is the problem this paper addresses.

This paper introduces *Pusyankes* (*Pusat Pelayanan Kesehatan Primer*) as the first integrated conceptual framework combining PCMH, PHM, and VBHC for Indonesia's JKN environment. The paper's central analytical contribution is the distinction between *nominal primary care* — FKTP registration status, capitation receipt, and formal gatekeeping role — and *functional primary care* — care delivery that generates the relational continuity, proactive population management, and outcome accountability

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through which primary care theory predicts health system benefits. Indonesia has invested substantially in the former; Pusyankes provides the organizational blueprint for achieving the latter.

METHODS

Conceptual Model Development Methodology

This paper employs a conceptual model development approach following established methodologies for conceptual research design,[18] comprising three stages. Stage 1 — **theoretical foundation synthesis:** systematic review of PCMH, PHM, and VBHC literatures to extract core principles, evidence bases, and operational requirements; and identification of the structural complementarities that justify their integration. Stage 2 — **gap analysis:** systematic mapping of each framework's principles against documented JKN primary care structural deficits, to specify which gap each framework component addresses and how. To ensure methodological rigor, these JKN deficits were explicitly identified through established empirical reviews (e.g., Agustina et al. and Kruk et al.) and the analysis of official BPJS expenditure reports, rather than theoretical assumptions Stage 3 — **operational specification with mechanism articulation:** translation of integrated principles into concrete, implementable organizational specifications; articulation of the causal mechanisms through which each component is anticipated to generate outcomes; and generation of falsifiable testable predictions that constitute the empirical evaluation agenda. This methodological approach is appropriate for conceptual research aimed at developing theoretically grounded frameworks in contexts where empirical implementation data are not yet available.

People-Centered Medical Home: Theoretical Foundation

The Patient-Centered Medical Home (PCMH) model, as defined by the Agency for Healthcare Research and Quality (AHRQ) and the Patient-Centered Primary Care Collaborative, reorganizes primary care delivery around five core attributes: comprehensive care, patient-centered orientation, coordinated care, accessible services, and systems-based quality and safety.[12,13] Evidence from evaluations of PCMH implementation demonstrates associations with reduced emergency department utilization, lower hospitalization rates, improved chronic disease management, and higher patient satisfaction across diverse settings.[19] The underlying mechanism is continuity of care through a designated personal physician, whereby sustained longitudinal relationships enhance trust, informational continuity, and care coordination, enabling earlier detection of health deterioration and more effective self-management support.[3,4] Bitton et al.'s multi-country analysis[4] confirms that PCMH's core attributes — first-contact continuity and comprehensiveness in particular — generate health system benefits across income-level contexts, providing the LMIC applicability rationale for Pusyankes' PCMH component.

Population Health Management: Theoretical Foundation

Population Health Management extends clinical care from the individual patient to the entire registered population panel, using data-driven risk stratification to deploy proactive, differentiated interventions calibrated to risk level.[14] Core operational components of PHM include a comprehensive panel registry documenting the health status of all registered members, risk stratification approaches to classify populations by level of need, and proactive outreach systems that engage individuals before the onset of acute care episodes.[1,3] Evidence from integrated primary care systems, including large-scale implementations in the NHS England, demonstrates that proactive population-based management is associated with reductions in avoidable hospitalizations and improved chronic disease outcomes.[20] PHM's relevance to the JKN context is further underscored by Indonesia's growing burden of non-communicable diseases—such as hypertension, type 2 diabetes, dyslipidemia, and chronic respiratory conditions—which are major contributors to preventable referral-level utilization when inadequately managed at the primary care level.[21]

Value-Based Health Care: Theoretical Foundation

Value-Based Health Care, as theorized by Porter and Lee,[16] defines health system value as outcomes achieved per monetary unit of care expended, reorienting provider incentives from activity volume to outcome achievement. Porter and Larsson's operationalization[17] specifies three implementation requirements: standardized, validated outcome measurement; integrated practice units organized around

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patient conditions rather than medical specialties; and value-based payment that rewards superior outcomes over time. In the primary care context, VBHC translates to measuring HbA1c control, blood pressure management, and preventive care coverage alongside financial performance. This accountability infrastructure simultaneously enables quality improvement and generates the evidence base for policy advocacy of quality-differentiated capitation — directly relevant to JKN reform. Valentijn et al.'s longitudinal study of integrated care projects[22] demonstrates that outcome-oriented accountability mechanisms are the strongest predictor of sustained improvement in integrated primary care organisations, providing the VBHC component's empirical grounding.

Framework Integration Rationale

The three parent frameworks are structurally complementary rather than competing: PCMH defines the *relational architecture* of care delivery — who delivers care and in what sustained relationship[12,13]; PHM defines the *population management strategy* — what conditions are managed proactively across the entire panel, not just among presenting patients;[1,14] VBHC defines the *accountability system* — how success is measured and how provider incentives are aligned with outcome achievement.[16,17] A facility implementing only PCMH delivers excellent relational care but lacks systematic population management. One implementing only PHM manages the population but without the personalized care continuity that drives engagement. One applying only VBHC measures outcomes without the organizational structures needed to improve them. The integration of all three constitutes an organizational system that is simultaneously patient-centred, population-managing, and outcome-accountable — the three conditions the international literature identifies as necessary for functional primary care.[4,6,22]

Limitations

Four limitations are acknowledged. First, financial projections are estimates based on current BPJS capitation rates subject to policy revision and local market variation; prospective financial modelling with sensitivity analysis is needed before implementation decisions. Second, the PHM risk stratification system assumes HIS and SATUSEHAT data completeness that may not be uniformly achievable across Indonesian settings, particularly outside major urban centres. Third, the Pusyankes model is designed for entrepreneurially oriented primary care physicians with capacity to invest in facility development or attract investor partnership; adaptation for government-employed physicians in public puskesmas settings requires separate organizational specification. Implementing this exact financial model instantly within government-owned public facilities (*Puskesmas*) will encounter significant institutional barriers. *Puskesmas* operate under strict regional government budgets (APBD) and are staffed by civil servants (PNS) with fixed salary structures, making the proposed five-stream hybrid financing legally and administratively complex to distribute as direct physician incentives. Therefore, government facilities may need to adopt Pusyankes modularly. For instance, public *Puskesmas* could fully adopt the PHM three-tier risk stratification system and PCMH care coordination roles to improve clinical outcomes, even without implementing the entrepreneurial financial components. Fourth, the three-phase implementation pathway assumes regulatory conditions permitting private FKTP quality differentiation that may require policy reform preceding implementation, with associated timeline uncertainty. This paper presents a conceptual specification and falsifiable evaluation agenda, not empirical evidence of effectiveness.

Ethical Considerations

This paper presents a conceptual framework and does not involve primary data collection from human subjects. Ethical approval is not required for this study design. The prospective pilot implementation described in the implementation pathway will require ethics committee approval before data collection commences.

PROPOSED OPERATIONAL MODEL: THE PUSYANKES CONCEPTUAL FRAMEWORK

The foundational conceptual contribution of this model is the distinction between **nominal primary care** and **functional primary care**. *Nominal primary care* describes a facility holding FKTP registration status, receiving JKN capitation, and formally serving as members' first-contact point — meeting the administrative and financing criteria for 'primary care' without necessarily delivering it in any meaningful clinical or organizational sense. *Functional primary care* describes care delivery that provides

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the longitudinal, comprehensive, coordinated, and first-contact care that the international primary care literature identifies as the organizational mechanisms through which primary care generates health and efficiency benefits.[4,5]

This distinction reframes the dominant Indonesian health policy question. Current JKN monitoring asks 'how many FKTPs are registered and how many members do they serve?' — a nominal measurement. The functionally relevant question is 'how many FKTPs are organized to deliver longitudinal relational care, proactive population management, and outcome-accountable services?' The answer, based on current organizational models, is close to zero. Kruk et al.'s quality health systems framework[6] distinguishes coverage from quality on precisely these grounds: Indonesia has achieved primary care coverage; it has not yet achieved primary care quality. Table 1 maps five structural organizational gaps sustaining this coverage-quality divide to specific Pusyankes design responses.

Table 1. Structural Organizational Gaps in JKN Primary Care and Pusyankes Framework Responses

Structural Gap	Current State (JKN FKTP)	Pusyankes Response	Framework
Volume-based episodic reactive care	Walk-in, any-physician, complaint-driven; no registered panel management	PCMH designated personal physician + PHM three-tier proactive panel management	PCMH + PHM
Financial unviability of primary care practice	Flat-rate capitation insufficient for quality investment; no supplementary model	Five-stream hybrid financing: JKN capitation + non-capitation claims + performance premium + occupational health + health programs	VBHC + Finance
Absent primary care career pathway	No prestige, career advancement, or income comparable to specialisation	Clinical leadership roles; panel-growth income trajectory; entrepreneurial ownership model	Governance + PCMH
No scalable, replicable quality model	Each FKTP operates independently; no quality framework; no benchmarking	Modular, franchise-ready specifications; public-private partnership pathway; learning network	Implementation architecture
Absent outcome accountability	No quality measurement; capitation not linked to clinical or population health outcomes	Seven-domain VBHC performance measurement system; performance-linked revenue streams	VBHC

Source: Author's framework synthesis based on JKN structural analysis. FKTP = Fasilitas Kesehatan Tingkat Pertama; PCMH = People-Centered Medical Home; PHM = Population Health Management; VBHC = Value-Based Health Care.

Team-Based Longitudinal Care: PCMH Operationalization

Pusyankes operationalizes PCMH through the designated personal physician model: each registered panel member is assigned to a specific physician who assumes longitudinal health management responsibility for that member — not merely management of presenting complaints at each visit. This is

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the foundational organizational departure from the puskesmas model, in which patients are seen by whoever is available, precluding the relational continuity that Kringos et al.[4] identify as the mechanism through which primary care generates population health benefits. Bitton et al.'s multi-country evidence[3] confirms that this relational continuity attribute is associated with health benefits across income-level contexts, providing direct applicability rationale for the Indonesian setting.

The designated physician leads a five-role care team (Table 2) operationalizing PCMH's comprehensiveness and coordination attributes. The Care Coordinator role is particularly critical: this position operationalizes PHM-PCMH integration by maintaining the panel registry and conducting proactive outreach — activities that are invisible in a reactive episodic model but central to a proactive population management model. Extended hours (7 AM–9 PM weekdays; 8 AM–2 PM weekends), same-day urgent appointments, and asynchronous SATUSEHAT-compliant teleconsultation operationalize PCMH's superb access attribute, directly differentiating Pusyankes from open-queue puskesmas models.

Table 2. Pusyankes Care Team: Roles, Functions, and Framework Alignment

Role	Primary Function	Framework Alignment	Qualification
Personal Physician (Dokter Pribadi)	Longitudinal patient relationship; clinical decision-making; care coordination across all tiers; panel health responsibility	Core PCMH relationship; PHM clinical lead for Tier 1 (high-risk) panel members	General Practitioners with primary care and PHM training
Care Coordinator	Panel registry maintenance; proactive outreach for Tiers 1–2; referral tracking; chronic disease follow-up scheduling	PHM operational hub; care transitions; panel risk stratification updates	D3/Bachelor of Public Health or Nursing
Health Educator	Structured group education programs; self-management support for chronic disease; Tier 3 community health promotion	PHM Tier 3 population health promotion; PCMH comprehensiveness	Bachelor of Public Health (Health Promotion) or equivalent
Medical Records & IT Officer	EMR/SIMRS management; SATUSEHAT integration; panel registry database; VBHC indicator data extraction	Data infrastructure enabling PHM risk stratification and VBHC outcome measurement	D3/D4 of Medical Records
Administrative & Finance Officer	BPJS claims administration; billing; monthly financial performance reporting; performance premium documentation	VBHC financial metrics; revenue stream management	Bachelor of Public Health or Management and Administration

Source: Author's framework specification. D3 = Diploma III; D4 = Diploma IV; SIMRS = Sistem Informasi Manajemen Rumah Sakit; SATUSEHAT = national health data integration platform (Kemenkes RI).

Proactive Panel Management: PHM Operationalization

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PHM transforms Pusyankes from a reactive complaint-management facility into a proactively managing population health organization. The operational core is a three-tier risk stratification system applied monthly to the entire registered panel, enabling differentiated intensity of intervention calibrated to risk level.[1,14]

Tier 1 (High Risk, ~5% of panel): members with active multi-morbidity (diabetes + hypertension + dyslipidaemia), recent emergency department visits, or demonstrated poor chronic disease control. Receive monthly structured care coordination contact, quarterly multidisciplinary team review, and intensified clinical monitoring between appointments.

Tier 2 (Moderate Risk, ~20% of panel): members with a single chronic condition or significant risk factors (pre-diabetes, borderline hypertension, metabolic syndrome with obesity). Receive bi-monthly proactive outreach contact, structured chronic disease group education programs, and quarterly clinical monitoring.

Tier 3 (Low Risk, ~75% of panel): members with no identified chronic conditions. Receive annual health screening, age-appropriate preventive care (immunisation, cancer screening, metabolic risk assessment), and access to health promotion programs.

The clinical rationale for this architecture is the demand substitution mechanism: proactive intervention for higher-risk population groups can prevent disease progression that would otherwise lead to avoidable utilization of referral-level services. Evidence from large-scale primary care system reforms, including those implemented by NHS England, indicates that strengthened primary care networks and proactive population management are associated with reductions in avoidable hospital utilization and improved chronic disease outcomes.[1,20] In the context of JKN, this mechanism directly targets preventable drivers of referral-level expenditure, as non-communicable diseases such as diabetes and hypertension remain leading contributors to specialist utilization when inadequately managed at the primary care level.[21]

Hybrid Outcome-Linked Financing: VBHC Operationalization

The Pusyankes financing model (Table 3) operationalizes VBHC by constructing revenue streams that align provider income with outcome achievement rather than service volume. The financial viability projection for a 2,000-member panel is derived from publicly verifiable data: at current BPJS capitation rates of IDR 6,000–8,000 per member per month (non-rural areas, 2024 rate schedule), a 2,000-member panel generates IDR 12–16 million monthly capitation base. Supplementary streams — non-capitation JKN claims, occupational health contracts estimated at IDR 5–10 million for 2–3 corporate contracts, and structured health programs — project total monthly revenue of IDR 22–32 million by Year 2.

This revenue range exceeds urban general practitioner income and approaches specialist entry-level remuneration, directly addressing the income disincentive that drives physician drainage to specialisation. The critical policy implication is that financial viability is achievable within the current JKN framework without requiring policy reform — only the panel size and supplementary revenue activation that an organized, quality-focused primary care model can attract. The proposed performance premium (Stream 3) requires JKN capitation quality differentiation — a policy reform for which Pusyankes outcome data would constitute the evidence base. All projections are based on current official rates and should be validated through prospective financial modelling before implementation decisions.

Table 3. Pusyankes Five-Stream Financing Model: Mechanisms and Sustainability Logic

Revenue Stream	Mechanism	JKN Alignment	Sustainability Logic
JKN Capitation (RJTP)	Per-member-per-month (PMPM) from BPJS; IDR 6,000–8,000/member/month (non-rural, 2024 rate schedule)	Standard FKTP entitlement; panel-proportional; predictable monthly base revenue	2,000-member panel: IDR 12–16 M base/month; scaling mechanism creates direct financial incentive to grow and retain panel membership

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Revenue Stream	Mechanism	JKN Alignment	Sustainability Logic
JKN Non-Capitation Claims	Fee-for-service claims for specific JKN-covered services outside capitation scope (laboratory, minor procedures)	Eligible under existing BPJS claims framework; no regulatory change required	Revenue diversification without additional cost burden on patients; activates underutilised JKN entitlements
Performance Premium (proposed)	Outcome-linked supplement for achieving defined VBHC metrics: HbA1c ≤7% control rate, BP ≤130/80 rate, avoidable referral rate reduction	Requires JKN policy reform; constitutes primary advocacy target of Phase 3 implementation pathway	Directly aligns provider financial incentives with BPJS expenditure management goals; justifies sustained quality investment
Occupational Health Services	Corporate employee annual health screening; occupational health risk management; health certification for local employers	Outside JKN scope; permissible supplementary service under existing FKTP regulation	Estimated IDR 5–10 M/month from 2–3 corporate contracts; stable non-insurance revenue stream
Structured Health Programs	Chronic disease self-management groups; structured wellness programs; health promotion membership packages	Complementary to JKN preventive services; additive not duplicative	Community engagement; panel member activation; preventive care revenue that reduces future acute care demand

Source: Author's framework specification. Capitation rates based on BPJS Kesehatan 2024 schedule. Revenue projections are estimates; prospective validation is required. PMPM = Per Member Per Month; JKN = Jaminan Kesehatan Nasional.

Performance Measurement System: VBHC Accountability

The seven-domain Pusyankes performance measurement system (Table 4) operationalizes VBHC's standardized outcome measurement requirement.[17] Indicators were selected against three criteria: measurability within existing Indonesian primary care data infrastructure (HIS, SATUSEHAT, BPJS claims data); demonstrated sensitivity to primary care organizational quality in published PHM and PCMH evaluations; and direct relevance to JKN policy priorities — the avoidable referral rate indicator translates directly into BPJS expenditure management metrics, creating a mechanism through which Pusyankes quality investment can be demonstrated to have systemic financial impact.

The seven-domain system serves three simultaneous functions: it generates the quality improvement feedback loop for internal care team performance review; it produces the outcome evidence required for BPJS capitation quality differentiation advocacy; and it constitutes the pre-registered outcome framework for Pusyankes pilot evaluation, enabling rigorous comparison against matched FKTP controls. Valentijn et al.'s longitudinal study[22] of integrated primary care organisations identifies outcome-oriented accountability systems as the strongest sustained predictor of quality improvement — validating the VBHC measurement architecture as the most evidence-grounded component of the Pusyankes operational design.

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Table 4. Pusyankes Seven-Domain Performance Measurement System

Domain	Key Indicator	Target Benchmark	Data Source & Frequency
Clinical Outcomes	HbA1c <7% in diabetic registered panel members	≥60% of diabetic members at 12 months	Laboratory records linked to SIMRS panel registry; quarterly review
Clinical Outcomes	Blood pressure <130/80 mmHg in hypertensive registered panel	≥65% of hypertensive members at 12 months	Clinical records; SIMRS; quarterly review
Preventive Care	Immunisation coverage across full registered panel	≥90% of age-eligible members annually	Immunisation registry; SATUSEHAT integration; annual audit
Care Utilisation	Avoidable referral rate: preventable specialist referrals as proportion of total referrals	<15% of total referrals at 24 months; baseline-adjusted	BPJS claims data; semi-annual review with matched FKTP comparison
Patient Experience	Validated patient satisfaction score (adapted instrument from national standard)	≥85th percentile of national primary care benchmark	Quarterly patient survey; validated tool administered by independent party
Access	Proactive outreach contact rate: proportion of Tier 1–2 panel members reached per quarter	≥80% of Tier 1–2 members contacted per quarter	Care coordinator records cross-referenced with panel registry; monthly reporting
Financial Viability	Net operating margin; physician-equivalent income from Pusyankes operations	Breakeven by Month 18; physician income >IDR 20 M/month by Month 24	Monthly financial management system; independent financial review at Month 12 and 24

Source: Author's specification based on PCMH, PHM, and VBHC measurement standards. SATUSEHAT = national health data integration platform; SIMRS = Sistem Informasi Manajemen Rumah Sakit.

Implementation Pathway: Evidence-Contingent Scaling

The three-phase implementation pathway is designed as a progressive, evidence-contingent scaling model. Each phase proceeds only upon evidence from the preceding phase, maintaining scientific accountability throughout.

Phase 1 — **Proof of concept (Year 1–2):** a single Pusyankes unit is established as a rigorously evaluated proof of concept. The unit enrolls approximately 500 members in the first 6 months, scaling to 1,500–2,000 by Year 2 end. Evaluation employs a prospective, pre-registered, mixed-methods design: quantitative comparison of clinical outcomes and utilization against matched FKTP controls using BPJS administrative claims data; qualitative interviews with patients, physicians, and care team members to examine implementation fidelity and mechanisms. Primary quantitative outcomes: financial breakeven by Month 18; avoidable referral rate vs matched controls at 24 months; HbA1c and blood pressure control at 24 months.

Phase 2 — **Replication and learning network (Year 3–5):** positive proof-of-concept findings, the model may be extended through multiple implementation pathways, including independently managed

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primary care units and collaborative arrangements involving organizational or institutional support for infrastructure and operational systems. In these configurations, clinical leadership remains with primary care physicians, while implementation support mechanisms may vary depending on local context and resource availability. Concurrently, a structured learning network can be established to facilitate cross-site outcome benchmarking, shared quality improvement initiatives, and coordinated evidence generation to inform health system policy and future scale-up considerations.

Phase 3 — **System integration advocacy (Year 5+):** network-scale implementation data constitute the evidence base for JKN policy advocacy: capitation quality differentiation incorporating Pusyankes outcome metrics; medical education curriculum reform embedding PHM and VBHC competencies; FKTP accreditation standard revision to require population management and outcome accountability systems. These implications should be interpreted as areas for further empirical evaluation rather than prescriptive policy recommendations. More broadly, existing evidence on primary care systems in low- and middle-income countries suggests that performance gaps are often associated with organizational design, care coordination, and incentive structures, underscoring the importance of strengthening service delivery architecture alongside technological development.

Theoretical Contributions

Pusyankes advances the JKN primary care literature in two respects. The **first contribution** is the nominal-functional distinction itself — a conceptual tool that has broad applicability beyond Indonesia. Any UHC system in which coverage expansion has outpaced organizational quality development faces the same gap between FKTP registration (nominal) and effective primary care delivery (functional). The distinction provides a measurable, policy-relevant framing: rather than counting facilities, health systems should measure the proportion of facilities delivering the organizational conditions that generate primary care health system benefits.

The **second contribution** is the PCMH-PHM-VBHC integration framework itself. The three parent frameworks have been applied individually in Indonesian health system contexts — PCMH principles in isolated facility design, PHM in national public health programming, VBHC in hospital quality initiatives — but never as an integrated operational model for primary care delivery. The integration rationale is theoretically grounded: PCMH provides the relational architecture, PHM the population management strategy, VBHC the accountability system. Together, they constitute the minimum organizational system necessary for functional primary care. This conceptual structure is applicable to any LMIC health system seeking to operationalize functional primary care within a mandatory insurance-based financing architecture.

Testable Predictions

The Pusyankes framework generates three falsifiable predictions constituting the pre-registered empirical evaluation agenda. All three specify operationally measurable outcomes, defined timeframes, and explicit comparison conditions — features that distinguish this from aspirational frameworks that articulate goals without generating testable hypotheses:

Prediction 1 — **Financial viability:** a 2,000-member Pusyankes panel will achieve net monthly revenue sufficient for primary care physician income exceeding IDR 20 million/month (approximately USD 1,250–2,000, depending on exchange rates), based on combined capitation base (IDR 12–16 M) plus supplementary revenue streams. This threshold would make primary care income competitive with urban general practitioner practice and approach specialist entry-level remuneration.

Prediction 2 — **Demand substitution:** Pusyankes units will demonstrate ≥15% lower avoidable referral rates versus matched FKTP controls at 24 months of operation, measured by BPJS administrative claims data using pre-specified preventable specialist referral categories. This prediction is grounded in evidence from population health management and integrated care interventions, including initiatives implemented by NHS England, which demonstrate that proactive identification and management of high-risk populations can reduce avoidable hospital utilization and improve care coordination.[20] These findings are consistent with broader evidence showing that preventable hospitalizations are often attributable to conditions that could be effectively managed at the primary care level through timely and coordinated intervention.[23]

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Prediction 3 — **Chronic disease outcomes:** Pusyankes panel members with hypertension or type 2 diabetes will demonstrate ≥20% improvement in controlled disease status (HbA1c <7%; BP <130/80) versus individual baseline at 24 months of Pusyankes care, using HIS clinical records and laboratory data. If any prediction is disconfirmed in rigorous pilot evaluation, the framework requires substantive revision — a scientific accountability that strengthens rather than weakens credibility.

CONCLUSION

Pusyankes is introduced as the first theoretically grounded, operationally specified integrated primary care framework for Indonesia's JKN environment, synthesising People-Centered Medical Home, Population Health Management, and Value-Based Health Care into a coherent organizational model. The paper's central contribution is the nominal-functional primary care distinction, which reframes Indonesian health policy from counting FKTP facilities to measuring whether those facilities deliver the relational continuity, proactive population management, and outcome accountability that generate primary care's health system benefits.

The PCMH-PHM-VBHC integration addresses the three-dimensional organizational gap in Indonesian primary care: PCMH provides the relational architecture through designated personal physician continuity; PHM provides the population management strategy through three-tier proactive risk stratification; VBHC provides the accountability system through seven-domain outcome measurement and outcome-linked financing. The hybrid five-stream financing model demonstrates a financially viable pathway making primary care physician income competitive with specialist practice at 2,000-member panel size — directly addressing the income disincentive that drives physician drainage from primary care to specialisation.

Three falsifiable predictions — financial viability by Month 24, at least 15% avoidable referral reduction, and at least 20% chronic disease outcome improvement — constitute the pre-registered empirical research agenda. Immediate priorities are prospective pilot implementation with pre-registered protocol and matched FKTP controls, cost-effectiveness analysis from the BPJS perspective, and qualitative implementation research examining physician adoption barriers. If confirmed, Pusyankes outcomes provide the evidence base for three high-leverage JKN policy reforms: capitation quality differentiation, medical curriculum reform embedding PHM and VBHC competencies, and FKTP accreditation standard revision. These three reforms together constitute the minimum policy package to move Indonesia from nominal to functional primary care at national scale.

ABBREVIATIONS

AHRQ: Agency for Healthcare Research and Quality
BPJS: Badan Penyelenggara Jaminan Sosial Kesehatan (National Health Insurance Administrator)
EMR: Electronic Medical Record
FKTP: Fasilitas Kesehatan Tingkat Pertama (Primary-level Health Facility)
HIS: Health Information System
JKN: Jaminan Kesehatan Nasional (National Health Insurance Program)
LMIC: Low- and Middle-Income Country
NCD: Non-Communicable Disease
PCMH: People-Centered Medical Home
PHM: Population Health Management
PMPM: Per Member Per Month (capitation rate unit)
SATUSEHAT: National health data integration platform (Kemenkes RI)
UHC: Universal Health Coverage
VBHC: Value-Based Health Care

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The authors declare no conflict of interest.

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