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Quality improvement in primary health care: a comparative analysis of divergent pathways in Cuba and Thailand

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ABSTRACT

This study examines the comparative dynamics of industrial policy and entrepreneurial culture in Ethiopia and Vietnam, two countries with shared histories of state-led development yet distinct trajectories in fostering private sector growth and innovation. Despite their common aspirations for structural transformation, both nations have pursued divergent pathways shaped by

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foundational policy choices, institutional design, and approaches to cultivating entrepreneurial culture. The research employs a comparative case study methodology, drawing on policy documents, reform initiatives, academic research, and scholarly analyses spanning from the Đổi Mới period (1986) to contemporary developments in 2026. Vietnam stands as a remarkable development success story, transitioning from one of the world's poorest nations to a middle-income economy within a single generation following the 1986 Đổi Mới reforms . The Đổi Mới policy's transition from a state-controlled centralized economy to a market-oriented framework created the foundation for Vietnam's manufacturing-led growth. Recent institutional innovations reflect a sophisticated approach to entrepreneurial ecosystem development. Resolution 68-NQ/TW (May 2025) repositions the private sector as a key engine of the economy, abolishing the "application-permit" mechanism, guaranteeing business freedom in areas not prohibited by law, and cutting at least 30% of administrative procedures . The Startup Nation project, launched in 2025, ambitiously aims to make entrepreneurship accessible to all citizens, targeting the development of 10,000 startups and 1 million one-person enterprises by 2030 . The strategic "quadrant" of Resolutions 57, 59, 66, and 68 has created unprecedented openness for startups and investment, with the value of venture capital investment reaching 1 billion USD and over 3,000 startups active in 2024 . The proposed specialized stock market for innovative startups represents a pioneering approach to entrepreneurial finance .

Ethiopia has reached a critical juncture with the January 2026 approval of its first-ever National Entrepreneurship Development Policy, marking a "historic shift" in economic thinking . This landmark policy, coordinated by the Entrepreneurship Development Institute (EDI), defines entrepreneurship as a holistic process of value creation across economic, financial, social, cultural, and political dimensions, establishing a multi-level strategy supporting micro, meso, and macro-level entrepreneurial development . The policy aligns with the Digital Ethiopia 2030 Strategy and the broader Homegrown Economic Reform Agenda . Complementary reforms include a new investment incentive framework tying benefits to performance and sectoral contribution, and amendments to customs laws streamlining procedures for manufacturin . Recent macroeconomic policy reforms (July 2024) represent bold measures to transform the economy from its "business as usual" trajectory. The government's recognition that Ethiopia must emulate successful development models, with Vietnam cited as an "ideal candidate" for learning reflects deliberate

policy learning. However, implementation challenges remain: Ethiopia's entrepreneurial ecosystem is less mature than Vietnam's, with a more recent history of state dominance and less developed venture capital infrastructure.

Vietnam's strength lies in its three-decade head start in market-oriented reform, sophisticated institutional architecture for innovation, integration into global value chains, and increasingly ambitious targets for entrepreneurial development. Its challenge is ensuring that rapid institutional innovation translates into inclusive growth that reaches all citizens, particularly in remote areas. Ethiopia's advantage is the opportunity to learn from Vietnam's experience, leapfrogging early-stage mistakes while adapting policies to its unique context. Both countries demonstrate that effective industrial policy and entrepreneurial culture require: (1) foundational market-oriented reforms that enable private sector growth; (2) coherent institutional frameworks coordinating entrepreneurial development; (3) performance-based incentive systems rewarding genuine innovation; (4) access to finance through diverse mechanisms including venture capital; (5) integration of entrepreneurship education into national curricula; (6) tolerance for failure and risk-taking as cultural values; (7) strategic policy learning from successful models; and (8) sustained political commitment across electoral cycles .

KEYWORDS: Industrial policy, entrepreneurial culture, Ethiopia, Vietnam, Đổi Mới, Startup Nation, innovation ecosystem, special economic zones, entrepreneurship policy, structural transformation

RÉSUMÉ

Cette étude examine les dynamiques comparatives de la politique industrielle et de la culture entrepreneuriale en Éthiopie et au Viêt Nam, deux pays aux histoires communes de développement dirigé par l'État mais aux trajectoires distinctes dans la promotion de la croissance du secteur privé et de l'innovation. Malgré leurs aspirations communes à la transformation structurelle, les deux nations ont poursuivi des voies divergentes façonnées par des choix politiques fondamentaux, la conception institutionnelle et les approches de la culture entrepreneuriale. La recherche emploie une méthodologie d'étude de cas comparative, s'appuyant sur des documents politiques, des initiatives de réforme, des recherches académiques et des analyses savantes couvrant la période de

Đổi Mới (1986) aux développements contemporains de 2026. Le Viêt Nam constitue un remarquable succès de développement, passant de l'un des pays les plus pauvres au monde à une économie à revenu intermédiaire en une seule génération après les réformes Đổi Mới de 1986 . La politique Đổi Mới, avec sa transition d'une économie centralisée contrôlée par l'État à un cadre orienté vers le marché, a créé la base de la croissance tirée par l'industrie manufacturière. Les innovations institutionnelles récentes reflètent une approche sophistiquée du développement de l'écosystème entrepreneurial. La résolution 68-NQ/TW (mai 2025) repositionne le secteur privé comme un moteur clé de l'économie, abolissant le mécanisme "d'autorisation-permis", garantissant la liberté d'entreprise dans les domaines non interdits par la loi et supprimant au moins 30 % des procédures administratives . Le projet Startup Nation, lancé en 2025, vise ambitieusement à rendre l'entrepreneuriat accessible à tous les citoyens, avec pour objectif le développement de 10 000 startups et d'un million d'entreprises individuelles d'ici 2030 . Le "quadrant stratégique" des résolutions 57, 59, 66 et 68 a créé une ouverture sans précédent pour les startups et l'investissement, la valeur des investissements en capital-risque atteignant 1 milliard USD et plus de 3 000 startups actives en 2024 . La proposition d'un marché boursier spécialisé pour les startups innovantes représente une approche pionnière du financement entrepreneurial .

L'Éthiopie a atteint un tournant critique avec l'approbation en janvier 2026 de sa toute première politique nationale de développement de l'entrepreneuriat, marquant un "changement historique" dans la pensée économique . Cette politique historique, coordonnée par l'Entrepreneurship Development Institute (EDI), définit l'entrepreneuriat comme un processus holistique de création de valeur à travers les dimensions économiques, financières, sociales, culturelles et politiques, établissant une stratégie multi-niveaux soutenant le développement entrepreneurial aux micro, méso et macro-niveaux . La politique s'aligne sur la stratégie Digital Ethiopia 2030 et l'agenda de réforme économique locale . Les réformes complémentaires comprennent un nouveau cadre d'incitations à l'investissement liant les avantages à la performance et à la contribution sectorielle, et des amendements aux lois douanières rationalisant les procédures pour l'industrie manufacturière . Les récentes réformes de la politique macroéconomique (juillet 2024) représentent des mesures audacieuses pour transformer l'économie de sa trajectoire "comme d'habitude" . La reconnaissance par le gouvernement que l'Éthiopie doit imiter les modèles de développement réussis, le Viêt Nam étant cité comme un "candidat idéal" pour l'apprentissage,

reflète une volonté délibérée d'apprentissage politique . Cependant, les défis de mise en œuvre persistent : l'écosystème entrepreneurial éthiopien est moins mature que celui du Viêt Nam, avec une histoire plus récente de domination étatique et une infrastructure de capital-risque moins développée.

La force du Viêt Nam réside dans son avance de trois décennies dans les réformes orientées vers le marché, son architecture institutionnelle sophistiquée pour l'innovation, son intégration dans les chaînes de valeur mondiales et ses objectifs de plus en plus ambitieux pour le développement entrepreneurial. Son défi est de garantir que l'innovation institutionnelle rapide se traduise par une croissance inclusive atteignant tous les citoyens, en particulier dans les zones reculées . L'avantage de l'Éthiopie est l'opportunité d'apprendre de l'expérience vietnamienne, en sautant les erreurs des premiers stades tout en adaptant les politiques à son contexte unique. Les deux pays démontrent qu'une politique industrielle et une culture entrepreneuriale efficaces nécessitent : (1) des réformes fondamentales orientées vers le marché permettant la croissance du secteur privé ; (2) des cadres institutionnels cohérents coordonnant le développement entrepreneurial ; (3) des systèmes d'incitation basés sur la performance récompensant l'innovation authentique ; (4) un accès au financement par divers mécanismes, y compris le capital-risque ; (5) l'intégration de l'éducation à l'entrepreneuriat dans les programmes nationaux ; (6) la tolérance à l'échec et à la prise de risque comme valeurs culturelles ; (7) l'apprentissage politique stratégique à partir de modèles réussis ; et (8) un engagement politique soutenu à travers les cycles électoraux .

MOTS-CLÉS : Politique industrielle, culture entrepreneuriale, Éthiopie, Viêt Nam, Đổi Mới, Startup Nation, écosystème d'innovation, zones économiques spéciales, politique d'entrepreneuriat, transformation structurelle

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1. INTRODUCTION

Primary health care is the foundation of effective, equitable health systems. It is the first point of contact between individuals and the health system, the coordinator of ongoing care, and the locus of preventive services that keep populations healthy. The quality of primary care—its accessibility, comprehensiveness, coordination, and continuity—fundamentally shapes health outcomes and patient experiences. Improving primary care quality is therefore not a luxury but an imperative for countries seeking to achieve universal health coverage and meet the Sustainable Development Goals.

Cuba and Thailand, two countries with dramatically different political systems, geographical contexts, and economic trajectories, have both achieved international recognition for the strength of their primary health care systems. Cuba's Family Doctor and Nurse Program, established in 1984, embeds primary care practitioners within the communities they serve, creating deep relationships and enabling comprehensive, preventive care . Despite severe resource constraints and economic challenges, Cuba maintains health indicators—including life expectancy and infant mortality—comparable to developed countries .

Thailand's Universal Coverage Scheme, launched in 2002, extended free primary care to all citizens, dramatically reducing out-of-pocket expenditures and improving health equity . Recent policy innovations leverage digital technology and Learning Health System methodologies to embed continuous quality improvement into routine care, creating replicable models for non-communicable disease management .

This study examines the comparative dynamics of quality improvement in primary health care in Cuba and Thailand. Drawing on policy documents, program evaluations, academic research, and official reports, it explores how each country's distinctive approach to primary care organization, community engagement, and quality improvement has shaped health outcomes. The analysis is organized around four interconnected themes: (1) the foundational structures and principles of primary care in each country; (2) approaches to quality improvement and system learning; (3) resilience in the face of challenges; and (4) implications for global health policy.

The study contributes to scholarship on health systems strengthening, quality improvement, and universal health coverage. It argues that while Cuba and Thailand have pursued different pathways, both demonstrate that strong primary care requires sustained political commitment, community orientation, and continuous learning.

2. LITERATURE REVIEW

2.1 Conceptualizing Primary Health Care Quality

Primary health care quality encompasses multiple dimensions: accessibility (services reach those who need them), comprehensiveness (services address the full range of health needs), coordination (care is integrated across providers and levels), continuity (relationships persist over time), and person-centeredness (care respects individual preferences and values). Quality improvement in primary care involves systematic efforts to enhance these dimensions through measurement, feedback, and iterative change.

The World Health Organization has long emphasized the centrality of primary care to universal health coverage. The 2018 Astana Declaration reaffirmed the commitment to primary health care as the cornerstone of sustainable health systems.

2.2 Cuba's Family Doctor and Nurse Program

Cuba's primary health care system is built on the iconic Family Doctor and Nurse Program (*Programa del Médico y Enfermera de la Familia*). Key features include:

- **Historical foundation:** Established in 1984 under the leadership of Fidel Castro, the program celebrated its 40th anniversary in 2024 . It was conceived as a way to bring comprehensive, preventive care directly into communities.
- **Scale and reach:** As of 2024, Cuba has 451 polyclinics and 11,548 family doctor-and-nurse offices (*consultorios*) . Of these, 11,222 are located in the community, with 7,763 (68.9%) in

urban areas and 3,507 (31.1%) in rural regions. Notably, 1,035 offices serve communities in remote mountainous areas under the Turquino Plan .

- **Integration:** Each family doctor-and-nurse team is responsible for a defined geographic area and population, typically 600-800 families. They work in close coordination with polyclinics, which provide specialist support and diagnostic services .
- **Community orientation:** As a systematic review protocol notes, "community orientation is a core feature of primary health care that enhances population health and a vital skill for general practitioners" . Cuba's model integrates primary health care and community medicine in a coordinated practice, making it a global reference point .
- **Resilience:** In 2024, despite the passage of two hurricanes, earthquakes, and disconnections of the National Electric System, Cuba's health sector increased medical consultations by over two million compared to the previous year . The infant mortality rate remained low at 7.1 per 1,000 live births .
- **Challenges:** The system faces persistent challenges including shortages of supplies and resources in clinics, poor construction conditions, and relocation of health professionals . A 2024 assessment by the National Assembly identified these issues and proposed actions through the Family Doctor and Nurse Improvement Program, including improving moral stimulation of health workers and prioritizing resource distribution .

2.3 Thailand's Primary Health Care Evolution

Thailand's primary health care system has evolved through continuous policy innovation. Key features include:

- **Universal Coverage Scheme (2002):** Extended free primary care to all Thai citizens regardless of economic status, dramatically reducing out-of-pocket expenditures . As a general comparison notes, "Thailand has made significant strides with its Universal Coverage Scheme, which offers free primary care to its citizens".
- **"30-Baht Treatment Everywhere" (2024):** A flagship policy initiative integrating personal health records across public health facilities nationwide. The policy aims to improve access to convenient, high-quality primary healthcare, reduce travel and waiting times, and empower

citizens to leverage their health data for better health and well-being. By the end of 2024, 46 provinces were participating in pilot phases.

- **Learning Health System approach:** Thailand has emerged as a leader in applying LHS frameworks to primary care quality improvement. A major £2.2 million research initiative, launched in 2024, applies LHS methodology to non-communicable disease management across 16 primary care sites in Chiang Mai and Lampang provinces. The project, funded by the UK government and led by Chiang Mai University in partnership with Queen Mary University of London and the London School of Hygiene and Tropical Medicine, embeds continuous cycles of measurement, action, and reassessment into routine care.
- **Hypertension pilot:** The LHS initiative builds on a successful hypertension pilot in Lampang province (2020-2022) that enrolled 1,713 patients in primary care facilities. Following the WHO HEART protocol, the project introduced simplified drug regimens, trained providers in behavioral counseling, and adapted health records for better patient monitoring.
- **Migrant health integration:** Thailand's commitment to health equity extends to migrant populations. The Borderland Health Foundation in Tak Province integrates migrant sexual and reproductive health services into the public primary care system, tackling cost, language, and referral barriers for an estimated 250,000 migrants from Myanmar. The initiative includes joint training for Thai and migrant health workers, bilingual translation support, facilitated insurance enrollment, and emergency referral funds.
- **NCD burden:** Non-communicable diseases account for nearly three-quarters of national deaths in Thailand. Hypertension alone affects one in four Thai adults, with more than half of those diagnosed inadequately controlled due to lapses in primary care and difficulties with patient adherence.

2.4 Comparative Context

A 2019 comparative analysis of primary health care systems noted that Cuba had low documented evidence of system change since 2010 with an indeterminate trajectory, while Thailand had high evidence with a stable-to-improving trajectory. This characterization reflects both Cuba's constrained documentation environment and Thailand's systematic approach to evaluating and publishing health system reforms.

3. RESEARCH QUESTIONS

This study addresses the following research questions:

1. How do the foundational structures and organizational principles of primary health care differ between Cuba and Thailand, and how have these evolved over time?
2. What approaches to quality improvement and system learning are employed in each country, and how effectively do they translate into improved outcomes?
3. How do each country's primary care systems demonstrate resilience in the face of economic, environmental, and political challenges?

4. METHODOLOGY

This study employs a comparative case study methodology to examine quality improvement in primary health care in Cuba and Thailand. The research design integrates document analysis of primary sources with synthesis of secondary literature to develop a comprehensive understanding of primary care dynamics in both countries.

Primary sources analyzed include: Cuban government reports and parliamentary assessments; Thai policy documentation and research publications; academic research protocols and systematic reviews ; and international organization reports .

The comparative framework examines four dimensions of primary health care quality: (1) foundational structures and principles; (2) quality improvement approaches; (3) resilience and adaptation; and (4) outcomes and challenges.

The analysis covers the period from approximately 2020 to 2026, capturing recent developments including Cuba's Family Doctor Program improvement initiatives and Thailand's Learning Health System implementation.

5. RESULTS

5.1 Foundational Structures and Principles

Cuba: Cuba's primary health care system is built on deeply embedded community orientation. Key features include:

- **Family Doctor and Nurse Program:** The cornerstone of Cuban primary care, with 11,548 family doctor-and-nurse offices (*consultorios*) nationwide as of 2024. These are supported by 451 polyclinics providing specialist and diagnostic services.
- **Geographic distribution:** Of the community-based offices, 68.9% are urban and 31.1% are rural, including 1,035 offices serving remote mountainous communities under the Turquino Plan . This distribution reflects a deliberate commitment to reaching underserved populations.
- **Population assignment:** Each family doctor-and-nurse team serves a defined geographic area and population, typically 600-800 families, enabling deep knowledge of community health needs and long-term relationships.
- **Community orientation:** As a systematic review protocol notes, "Cuba stands out globally, particularly among low- and middle-income countries, for its primary health care system and has achieved outstanding population health outcomes through this approach".
- **Preventive focus:** The Cuban model emphasizes prevention, health promotion, and early intervention, with practitioners living in the communities they serve and maintaining continuous contact with families.

Thailand: Thailand's primary health care system has evolved through policy innovation and systematic scaling. Key features include:

- **Universal Coverage Scheme (2002):** Extended free primary care to all Thai citizens, dramatically reducing out-of-pocket expenditures. As a general comparison notes, "Thailand has made significant strides with its Universal Coverage Scheme, which offers free primary care to its citizens, regardless of their economic status".
- **Three-tier structure:** The system comprises primary care units (PCUs) at the local level, community hospitals at the district level, and provincial/general hospitals at the regional level. PCUs serve as the first point of contact, typically staffed by nurses and community health workers with physician support.

- **Village Health Volunteers:** A network of over one million trained volunteers provides community-based health promotion and acts as a bridge between communities and the formal health system.
- **Policy innovation:** The 2024 "30-Baht Treatment Everywhere with a National ID Card" initiative integrates personal health records across public health facilities, aiming to improve access and reduce waiting times. By end of 2024, 46 provinces were participating in pilot phases.
- **Migrant health integration:** The Borderland Health Foundation in Tak Province demonstrates Thailand's commitment to extending coverage to marginalized populations, integrating migrant sexual and reproductive health services into public primary care for an estimated 250,000 migrants from Myanmar.

Table 1: Comparative Foundational Structures and Principles

Dimension	**Cuba**	**Thailand**
Core program	Family Doctor and Nurse Program (1984)	Universal Coverage Scheme (2002)
Service delivery units	11,548 family doctor-and-nurse offices; 451 polyclinics	Primary care units; community hospitals; district hospitals
Community reach	68.9% urban; 31.1% rural; 1,035 mountain offices	Village Health Volunteers (1 million+)
Population assignment	Defined geographic areas (600-800 families per team)	Geographic catchment areas
Core principle	Community orientation; preventive focus	Universal coverage; equity
Recent innovation	Family Doctor and Nurse Improvement Program (2024)	"30-Baht Treatment Everywhere" (2024); Learning Health System

5.2 Quality Improvement Approaches

Cuba: Cuba's approach to quality improvement is embedded in its community-oriented model and ongoing policy adjustments. Key features include:

- **Family Doctor and Nurse Improvement Program:** Following a 2024 parliamentary assessment identifying deficiencies in infrastructure, supply shortages, and health worker relocation, the improvement program proposed actions including:
  - Improving moral stimulation of health workers
  - Deepening the polyclinic evaluation guide, particularly regarding interconsultations with basic specialists
  - Emphasizing the teaching character of clinics and administrative management
  - Prioritizing resource distribution to ensure clinic and polyclinic functionality
  - Addressing logistical challenges exacerbated by transportation and ambulance shortages
- **Research and innovation:** In 2024, Cuba's health sector developed 2,767 research and innovation projects aimed at optimizing National Health System functioning and improving quality of life .
- **Continuous training:** Constant training and professional development processes for health professionals are emphasized as key to quality improvement .
- **Systematic evidence gap:** A 2025 systematic review protocol registered with PROSPERO notes that "systematic evidence summarizing the context, delivery models, and healthcare outcomes of community-oriented primary care in Cuba remains lacking" . This suggests that while Cuba's model is widely admired, rigorous documentation of its quality improvement mechanisms is limited.

Thailand: Thailand has developed systematic, evidence-based approaches to quality improvement. Key features include:

- **Learning Health System framework:** A major £2.2 million research initiative applies LHS methodology to non-communicable disease management across 16 primary care sites in Chiang Mai and Lampang provinces . The project embeds continuous cycles of measurement, action, and reassessment into routine care.

- **Co-design approach:** The LHS is co-designed with healthcare teams, policymakers, researchers, and the public through stakeholder workshops, creating locally appropriate quality improvement pathways and computerized decision support tools .
- **Monthly data feedback:** Healthcare teams receive monthly data on performance and patient outcomes, enabling iterative improvement. Data is fed back in visually accessible formats and discussed in regular peer network meetings facilitated by clinical and community champions .
- **Phased implementation:** The project addresses hypertension (phase 1), type 2 diabetes (phase 2), and chronic kidney disease (phase 3) sequentially, allowing systematic learning and adaptation .
- **Hypertension pilot foundation:** The LHS builds on a 2020-2022 hypertension pilot in Lampang province that enrolled 1,713 patients, demonstrating the effectiveness of simplified drug regimens, provider training, and adapted health records .
- **Developmental evaluation:** The "30-Baht Treatment Everywhere" policy employs developmental evaluation, a methodology suited to assessing complex, dynamic policies during implementation. Using a co-creation approach, evaluators and stakeholders provide timely feedback, facilitating identification of implementation challenges and proposal of practical solutions .
- **Theory of Change:** The evaluation uses Theory of Change to capture perceptions of policy goals from both policymakers and implementers, identify potential impacts, and inform data collection methods .

Table 2: Comparative Quality Improvement Approaches

Dimension	**Cuba**	**Thailand**
Primary improvement mechanism	Program-level adjustments; research and innovation	Learning Health System; continuous measurement and feedback
Evidence base	Limited systematic documentation; 2,767 research projects (2024)	Rigorous research; pilot studies; RCTs

Stakeholder engagement	Parliamentary assessments; health worker input	Co-design with healthcare teams, policymakers, researchers, public
Data utilization	Not systematically documented	Monthly performance feedback; data dashboards
Improvement methodology	Program evaluation and adjustment	LHS; developmental evaluation; Theory of Change
Scale of interventions	National program adjustments	Phased implementation (16 sites initially)

5.3 Resilience and Adaptation

Cuba: Cuba's health system has demonstrated remarkable resilience in the face of severe challenges. Key features include:

- **Economic constraints:** The health sector operates under severe economic pressure, aggravated by the intensification of unilateral coercive measures (the U.S. economic embargo) .
- **Natural disasters:** In 2024, the sector maintained services despite the passage of two hurricanes and earthquakes .
- **Infrastructure challenges:** The system faces disconnections of the National Electric System, fuel shortages, and deteriorating clinic infrastructure .
- **Performance despite adversity:** Despite these challenges, Cuba increased medical consultations by over two million compared to the previous year and maintained an infant mortality rate of 7.1 per 1,000 live births in 2024 .
- **Health worker dedication:** Minister José Angel Portal Miranda praised the "professionalism and hard work" of health workers who "guaranteed the vitality of services" amid complex situations .
- **Adaptive strategies:** The Family Doctor and Nurse Improvement Program represents an adaptive response to identified challenges, proposing targeted actions to address deficiencies .

Thailand: Thailand's health system demonstrates resilience through systematic learning and adaptation. Key features include:

- **NCD burden response:** With NCDs accounting for nearly three-quarters of national deaths, Thailand has developed systematic responses through the LHS approach .
- **Migrant health integration:** The Borderland Health Foundation addresses the complex challenge of providing care to 250,000 migrants from Myanmar, tackling cost, language, and referral barriers through innovative service delivery models .
- **Policy innovation scaling:** The "30-Baht Treatment Everywhere" initiative demonstrates the ability to scale innovations from pilot to national implementation, with 46 provinces participating by end of 2024 .
- **Health economic evaluation:** Systematic health economic evaluation ensures interventions are sustainable within standard health budgets .
- **Capacity building:** The LHS project explicitly aims to train a new generation of clinical, community, and research leaders to "promulgate this way of working across the region" .

Table 3: Comparative Resilience and Adaptation

Dimension	**Cuba**	**Thailand**
Major challenges	Economic embargo; fuel shortages; natural disasters; infrastructure decay	NCD burden; migrant health access; rural-urban disparities
System response	Health worker dedication; improvement program; research innovation	LHS; migrant health integration; policy scaling
Performance metrics	+2 million consultations (2024); infant mortality 7.1/1000	Hypertension control improvement; expanded coverage
Adaptive capacity	Program-level adjustments	Continuous learning cycles

Sustainability strategies	Resource prioritization; moral stimulation	Health economic evaluation; capacity building

5.4 Outcomes and Challenges

Cuba: Cuba's primary health care system has achieved notable outcomes while facing persistent challenges.

Outcomes:

- **Health indicators:** Infant mortality rate of 7.1 per 1,000 live births (2024), comparable to many developed countries .
- **Service volume:** Over two million additional medical consultations in 2024 compared to previous year .
- **Research productivity:** 2,767 research and innovation projects aimed at optimizing system functioning .
- **Universal reach:** 11,548 family doctor-and-nurse offices ensure coverage across urban and rural areas .
- **Disease control:** Despite high infestation rates of Aedes aegypti mosquito causing dengue transmission affecting 73% of municipalities, and Oropouche virus outbreaks, both situations were controlled and epidemiological stability restored .

Challenges:

- **Infrastructure decay:** Poor construction condition of clinics and shortage of supplies and resources .
- **Health worker retention:** Relocation of health professionals, often unknown to the population .
- **Logistical constraints:** Complex situation with transportation and ambulances, exacerbated by the economic blockade .
- **Population health challenges:** High population aging, low birth rate, increase in risk factors for chronic NCDs, recurrence of infection outbreaks, and increase in teenage pregnancies .

Thailand: Thailand's primary health care system has achieved significant progress while addressing ongoing challenges.

Outcomes:

- **Coverage expansion:** Universal Coverage Scheme ensures all citizens have access to primary care regardless of economic status .
- **NCD management:** Hypertension pilot demonstrated improved control through systematic intervention .
- **Policy innovation:** 46 provinces participating in "30-Baht Treatment Everywhere" pilot by end of 2024 .
- **Migrant health:** Integrated services reaching 250,000 migrants in Tak Province .
- **Research leadership:** £2.2 million LHS project positioning Thailand as leader in quality improvement methodology .

Challenges:

- **NCD burden:** Three-quarters of national deaths from NCDs; hypertension affects 1 in 4 adults, with more than half inadequately controlled .
- **Rural-urban disparities:** Access to healthcare services can be more challenging in rural areas compared to urban areas .
- **Migrant inclusion:** Despite progress, many migrants remain undocumented and excluded from UHC .
- **Implementation complexity:** The "30-Baht Treatment Everywhere" policy, while promising, requires careful evaluation of implementation challenges and solutions .

Table 4: Comparative Outcomes and Challenges

Dimension	**Cuba**	**Thailand**
Key outcomes	Infant mortality 7.1/1000; +2M consultations; 2,767 research projects	Universal coverage; NCD pilot success; 46 provinces in policy pilot

Major challenges	Infrastructure decay; supply shortages; health worker relocation	NCD burden; rural disparities; migrant inclusion
Demographic challenges	High aging; low birth rate; teenage pregnancies	NCD prevalence; aging population
System resilience	Disease control despite outbreaks	LHS implementation; migrant health integration

5.5 Summary of Comparative Findings

Table 5: Comprehensive Comparative Analysis

Dimension	**Cuba**	**Thailand**
Foundational program	Family Doctor and Nurse Program (1984)	Universal Coverage Scheme (2002)
Service delivery units	11,548 family doctor-and-nurse offices; 451 polyclinics	Primary care units; community hospitals; district hospitals
Community engagement	Family doctors living in communities; defined geographic populations	Village Health Volunteers (1 million+)
Recent policy innovation	Family Doctor and Nurse Improvement Program (2024)	"30-Baht Treatment Everywhere" (2024); Learning Health System
Quality improvement approach	Program evaluation; research projects; moral stimulation	LHS; continuous measurement; co-design; monthly feedback
Evidence base	Limited systematic documentation; 2,767 research projects	Rigorous research; RCTs; health economic evaluation

Resilience factors	Health worker dedication; adaptive programs; research innovation	Systematic learning; migrant integration; scaling innovation
Key outcomes	Infant mortality 7.1/1000; +2M consultations; disease control	Universal coverage; NCD pilot success; 46 provinces in policy pilot
Key challenges	Infrastructure decay; supply shortages; health worker retention	NCD burden; rural disparities; migrant inclusion
Key strengths	Deep community orientation; universal reach; resilience despite constraints	Systematic methodology; policy innovation; equity focus
Key lessons	Community embeddedness enables resilience; moral stimulation matters	Continuous learning improves quality; data-driven decision-making works

6. DISCUSSION OF RESULTS

6.1 Explaining Divergent Pathways: Political Systems and Historical Context

The differences between Cuba's and Thailand's approaches to primary health care quality improvement reflect fundamentally different political systems, historical trajectories, and health system development pathways.

Cuba's system emerged from a revolutionary political project that prioritized universal access to health care as a fundamental right. The Family Doctor and Nurse Program, established in 1984 under Fidel Castro's leadership, was explicitly designed to bring comprehensive, preventive care directly into communities . The model's emphasis on community orientation—with practitioners

living in the neighborhoods they serve—reflects a socialist vision of health as a collective responsibility and a tool for social transformation.

Thailand's system evolved through continuous policy innovation within a constitutional monarchy and parliamentary democracy. The Universal Coverage Scheme, launched in 2002, was the product of decades of health systems development and political mobilization. The recent adoption of Learning Health System methodology reflects Thailand's openness to international partnerships and its commitment to evidence-based policy.

6.2 The Power of Community Orientation

Cuba's experience demonstrates the transformative potential of deeply embedded community orientation. With 11,548 family doctor-and-nurse offices distributed across urban and rural areas, including 1,035 serving remote mountain communities, Cuba ensures that primary care is physically present in every neighborhood . This proximity enables continuous relationships, deep knowledge of community health needs, and rapid response to emerging issues.

The Cuban model's resilience during 2024—maintaining services through hurricanes, earthquakes, and fuel shortages while increasing consultations by over two million—suggests that community embeddedness creates bonds of trust and commitment that sustain performance even under extreme stress .

Thailand's Village Health Volunteer network, with over one million trained volunteers, provides a different model of community engagement. Volunteers serve as bridges between communities and the formal health system, conducting health promotion and facilitating access to care. This model extends the reach of the formal system without requiring the same level of infrastructure investment.

6.3 Systematic Quality Improvement Methodologies

Thailand's adoption of Learning Health System methodology represents a significant advance in systematic quality improvement. The £2.2 million LHS project, applying continuous cycles of

measurement, action, and reassessment across 16 primary care sites, demonstrates how rigorous methodology can be embedded in routine care . The phased approach—addressing hypertension, diabetes, and kidney disease sequentially—enables systematic learning and adaptation.

The co-design methodology, engaging healthcare teams, policymakers, researchers, and the public in stakeholder workshops, ensures that quality improvement interventions are locally appropriate and locally owned . Monthly data feedback and peer network discussions create mechanisms for continuous learning and rapid adaptation.

Cuba's approach to quality improvement is less systematically documented but appears to operate through program-level adjustments based on parliamentary assessments and health worker input . The 2,767 research and innovation projects developed in 2024 suggest that Cuba values research-driven improvement, though systematic evidence on implementation is limited.

6.4 Resilience Through Different Mechanisms

Both countries demonstrate remarkable resilience, but through different mechanisms. Cuba's resilience is rooted in the dedication of health workers and the deep community embeddedness of its model. As Minister Portal Miranda noted, health workers "guaranteed the vitality of services" amid complex situations through "professionalism and hard work" . This human-centered resilience enables the system to continue functioning even when infrastructure and supplies are compromised.

Thailand's resilience operates through systematic learning and adaptation. The LHS approach embeds continuous improvement into routine care, enabling the system to detect problems early and adjust accordingly . The phased implementation of the "30-Baht Treatment Everywhere" policy, using developmental evaluation to identify challenges and propose solutions during early stages , demonstrates how resilience can be built through careful policy design and evaluation.

6.5 Addressing Health Disparities

Both countries demonstrate commitment to addressing health disparities, though their approaches differ. Cuba's focus on reaching rural and remote populations through the Turquino Plan—with 1,035 offices in mountain communities—ensures that geographic isolation does not preclude access . The system's universal reach means that even the most remote populations are covered.

Thailand's commitment to equity extends to migrant populations, a group often excluded from health systems. The Borderland Health Foundation's integration of migrant sexual and reproductive health services into public primary care, tackling cost, language, and referral barriers for 250,000 migrants from Myanmar, demonstrates how systematic approaches can extend coverage to marginalized populations . The initiative's joint training for Thai and migrant health workers, bilingual translation support, and facilitated insurance enrollment create a model that could be replicated elsewhere.

6.6 Implications for Global Health Policy

The findings have significant implications for global health policy and primary care strengthening.

First, community orientation matters. Cuba's model demonstrates that embedding primary care within communities—with practitioners living where they serve—creates relationships that enhance quality and build resilience.

Second, systematic quality improvement requires methodological rigor. Thailand's LHS approach shows how continuous measurement, feedback, and adaptation can be embedded in routine care.

Third, resilience can be built through different mechanisms. Cuba's human-centered resilience and Thailand's system-level adaptive capacity both offer lessons for health systems facing challenges.

Fourth, reaching marginalized populations requires deliberate strategies. Cuba's rural outreach and Thailand's migrant health integration both demonstrate that equity does not happen automatically.

Fifth, evaluation and learning are essential. Thailand's developmental evaluation of the "30-Baht Treatment Everywhere" policy and Cuba's parliamentary assessments both show the importance of systematic feedback loops.

Sixth, health worker motivation is critical. Cuba's emphasis on moral stimulation and Thailand's investment in training both recognize that quality improvement ultimately depends on people.

Seventh, integration of digital technology can enhance quality. Thailand's use of personal health records and data dashboards demonstrates how technology can support quality improvement.

7. CONCLUSION

This comparative analysis of quality improvement in primary health care in Cuba and Thailand reveals two distinct pathways shaped by different political systems, historical trajectories, and health system development approaches. Cuba's Family Doctor and Nurse Program, deeply embedded in communities with 11,548 offices reaching both urban and rural populations, has achieved remarkable health outcomes despite severe resource constraints. The system's resilience during 2024—increasing consultations by over two million while facing hurricanes, earthquakes, and fuel shortages—demonstrates the power of community orientation and health worker dedication. The ongoing Family Doctor and Nurse Improvement Program, based on parliamentary assessments identifying infrastructure and supply challenges, represents an adaptive response to identified deficiencies.

Thailand's Universal Coverage Scheme, launched in 2002, has extended free primary care to all citizens, dramatically reducing out-of-pocket expenditures. Recent policy innovations, including the "30-Baht Treatment Everywhere" initiative integrating personal health records nationwide, leverage digital technology to improve access and efficiency. Thailand's leadership in applying Learning Health System methodology to primary care quality improvement represents a significant advance in systematic quality improvement. The £2.2 million LHS project, co-designed with stakeholders and implementing continuous measurement and feedback cycles across 16 sites, provides a replicable model for NCD management . Thailand's commitment to equity extends to

migrant populations, with integrated services reaching 250,000 migrants from Myanmar in Tak Province.

Several cross-cutting conclusions emerge from this analysis.

First, foundational commitments to universal coverage and community orientation create the conditions for quality**.** Cuba's universal reach and Thailand's UCS both demonstrate that coverage must precede quality improvement.

Second, systematic quality improvement requires methodological rigor and continuous learning**.** Thailand's LHS approach offers a model that other countries could adapt.

Third, resilience can be built through both human dedication and system-level adaptation. Cuba's health worker commitment and Thailand's adaptive policy design both demonstrate pathways to resilience.

Fourth, reaching marginalized populations requires deliberate strategies. Cuba's rural outreach and Thailand's migrant health integration show that equity demands explicit attention.

Fifth, evaluation and learning must be embedded in routine operations**.** Thailand's developmental evaluation and Cuba's parliamentary assessments both demonstrate the importance of feedback loops.

Sixth, health worker motivation and support are essential. Cuba's emphasis on moral stimulation and Thailand's investment in training both recognize that quality depends on people.

Seventh, digital technology can enhance quality improvement when thoughtfully integrated. Thailand's personal health records and data dashboards show the potential of technology.

For Cuba, the path forward involves addressing identified challenges—infrastructure decay, supply shortages, and health worker retention—through the Improvement Program while continuing to build on the strengths of community orientation and health worker dedication. The 2,767 research and innovation projects developed in 2024 suggest a commitment to evidence-based improvement that should be supported.

For Thailand, the priority is scaling the LHS approach beyond the initial 16 sites while maintaining methodological rigor. The phased implementation addressing hypertension, diabetes, and kidney disease provides a template for systematic expansion. Continuing to address migrant health inclusion and rural-urban disparities remains essential.

For the broader global health community, the experiences of Cuba and Thailand demonstrate that strong primary health care is achievable across diverse contexts. Cuba shows what community orientation and universal reach can achieve even under severe resource constraints. Thailand demonstrates how systematic quality improvement methodologies can enhance performance and extend coverage to marginalized populations. Both remind us that quality improvement in primary health care is not a destination but an ongoing process requiring sustained political will, institutional commitment, and the dedication of health workers who, as Cuba's Minister Portal Miranda noted, "guarantee the vitality of services" through their professionalism and hard work .

8. LIMITATIONS OF THE STUDY

This study has several limitations that should be acknowledged. First, the comparative analysis relies primarily on secondary sources and published reports rather than primary data collection. Direct fieldwork in both countries, including interviews with health workers, policymakers, and community members, would strengthen comparative insights.

Second, data availability differs significantly between the two countries. Thailand benefits from extensive documentation of its health system reforms, including rigorous research publications and evaluation reports. Cuba's evidence base is more limited, with much information drawn from official statements and news reports.

Third, the study captures Cuba at a moment of documented challenge (2024 parliamentary assessment) and Thailand at a moment of policy innovation (LHS implementation), but cannot fully capture the dynamic evolution of either system.

Fourth, the study focuses on primary health care quality with limited attention to secondary and tertiary care, financing mechanisms, or broader political economy contexts.

Fifth, the voice of health workers and patients—their experiences of quality improvement, their challenges, their triumphs—is mediated through reports rather than captured directly.

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10. AUTHOR CONTRIBUTIONS

The author conceived the study, designed the comparative framework, conducted the literature review and document analysis, synthesized findings across countries, and drafted the complete manuscript. The author takes full responsibility for the accuracy of information presented and interpretations offered.

11. COMPETING INTERESTS

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential competing interest.

12. AUTHORS' CONTRIBUTIONS

As sole author, I performed all roles including conceptualization, methodology development, investigation, formal analysis, writing, review, editing, and project administration.

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14. DATA AVAILABILITY

All sources analyzed in this study are publicly available documents, including news reports, academic publications, research protocols, policy documents, and official statements. Primary sources are cited in the references and accessible through the referenced publications and organizations.

15. DISCLAIMER

The views expressed in this article are solely those of the author and do not necessarily reflect the views of any institution or organization with which the author may be affiliated. The analysis is provided for scholarly purposes and should not be construed as policy guidance or investment advice. Primary health care quality improvement practices are subject to change, and readers should consult current official sources for specific information about Cuba, Thailand, and health policy.

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