



Achipelago-Based Governance Model for Health Services in Island Regions: A Case Study in Pangkajene and Kepulauan District, Indonesia

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ABSTRACT

This study explores health service governance in Pangkajene and Kepulauan District, which presents a unique challenge due to its island-based geography. The study aims to analyze the current structure, determinants, and performance of health service delivery and propose a responsive governance model. A qualitative approach is applied through literature review, key informant interviews, field observation, and focus group discussions. Findings reveal disparities in health access due to geographical, infrastructural, institutional, and human resource constraints. A new governance model is proposed, integrating geographic referral systems, mobile clinics, telemedicine, and community-based engagement. These findings contribute to policy recommendations for more adaptive and equitable health governance in archipelagic regions.

INTRODUCTION

Health is a fundamental human right and a basic necessity that must be addressed through accessible, quality services for all citizens, regardless of geographic barriers. Indonesia's island geography presents challenges for equitable health service distribution, particularly in remote and under-resourced regions. In Pangkajene and Kepulauan District, disparities in access, resource allocation, and infrastructure persist.

Despite the national push toward Universal Health Coverage (UHC), local health service provision remains constrained by limited infrastructure, workforce shortages, and policy uniformity that fails to account for regional diversity. This study aims to examine these systemic issues and proposes a context-specific governance model based on participatory and collaborative principles from the New Public Service (NPS) approach.

Research Objectives:

1. To analyze the current governance and health service delivery systems in island regions.
2. To identify key determinants affecting health service effectiveness.
3. To propose a tailored health governance model that addresses island-specific challenges.

LITERATURE REVIEW

New Public Service in Health Governance

New Public Service (NPS) emphasizes democratic citizenship, participatory processes, and collaborative networks in public administration. In the health sector, NPS encourages a shift from a top-down bureaucratic model to one that engages communities, health workers, and local leaders in shaping services that reflect the needs and aspirations of citizens. It asserts that public institutions should serve not only as service providers but also as facilitators of dialogue and collective decision-making.

The implementation of NPS in health governance becomes particularly impactful in decentralized systems such as Indonesia, where regional autonomy allows for contextual adaptation of public services. In remote and underserved island regions, where government presence may be limited, adopting NPS principles enables the co-production of public value. This approach enhances community trust, ownership, and responsiveness of services, laying the foundation for sustainable health improvements rooted in local legitimacy.

Governance Models in Health Services

Clinical Governance is a management approach designed to uphold and improve the quality and safety of patient care within healthcare systems. It encompasses structured mechanisms such as quality audits, performance reviews, continuous education for health workers, and protocols to reduce clinical risks. This model ensures that all aspects of service delivery are monitored and optimized to meet established standards, making it highly relevant for settings where health outcomes depend on clinical consistency.

Systems-Based Governance expands the scope of service integration across interrelated sectors. This model recognizes that health determinants are shaped not only by clinical inputs but also by educational access, clean water, infrastructure, and governance. In island regions, where fragmentation across services is common, this model supports coordinated delivery and resource sharing. Meanwhile, Community-Based Governance emphasizes empowering citizens to actively participate in planning, implementing, and evaluating health programs. This model is crucial in settings with strong local identities and traditional structures, where cultural legitimacy often influences health behaviors and service uptake.

Donabedian's Framework

Avedis Donabedian's framework assesses healthcare quality using three dimensions: structure, process, and outcome. Structure refers to the foundational inputs necessary for service delivery – physical infrastructure, health workforce, equipment, and organizational systems. In island contexts, this dimension reveals disparities in facility presence, maintenance of health posts, and staffing levels, which directly impact the availability of care.

The process dimension involves interactions during care delivery, including diagnostics, treatment, referral protocols, and provider-patient communication. It is particularly relevant in understanding the consistency and appropriateness of services in hard-to-reach regions. Outcome, the third dimension, evaluates the effectiveness of care through indicators such as reduced morbidity, patient satisfaction, and improvements in community health knowledge. Together, these three components provide a holistic framework for analyzing and improving health systems in geographically constrained areas.

Empirical Gaps

Although extensive literature exists on general models of health governance, few studies have thoroughly examined how these models function in archipelagic contexts. The majority of health governance research is focused on urban or continental settings, where accessibility and interconnectivity are less problematic. This has resulted in a lack of nuanced policy frameworks tailored to regions with complex geographies such as Indonesia's thousands of inhabited islands.

Moreover, there is minimal empirical work exploring cross-sectoral collaborations that consider the interplay between local governance structures, civil society, and technological interventions in health delivery. The absence of island-specific health governance models perpetuates reliance on centralized norms, which often fail to address real-world constraints. Therefore, there is a pressing need for place-based, data-driven governance innovations that empower communities, utilize digital health tools, and foster inter-regional partnerships to ensure equitable health access across diverse terrains.

METHODOLOGY

A qualitative, case-study approach was employed. Two representative locations were selected: Puskesmas Sabutung (inner island) and Puskesmas Liukang Tangaya (outer island).

Data Sources:

- a. *Primary:* In-depth interviews, FGD, direct observation
- b. *Secondary:* Government reports, BPS data, academic journals

Informants: 20 stakeholders including health officials, local leaders, policymakers, and community members.

Data Analysis: Thematic analysis was used to categorize determinants and identify governance gaps.

RESEARCH RESULT AND DISCUSSION

Current Governance Landscape

Uniform health policy frameworks result in misalignment with island realities. No differentiation in staffing policies or incentives for remote assignments.

Determinants of Health Service Effectiveness

a. Geography

The geographical makeup of island regions significantly limits access to healthcare services. Many small islands in Pangkep lack reliable transportation infrastructure, making it difficult for residents to travel to healthcare facilities. During the rainy season or periods of rough sea conditions, transportation becomes even more perilous, further isolating residents and delaying access to vital health services. Moreover, the physical distance between islands and centralized healthcare facilities often leads to inequitable service distribution, especially in emergency cases where rapid response is essential.

These challenges are compounded by the absence of basic supporting infrastructure such as docks or helipads, which would otherwise enable emergency evacuations. The limited mobility of health workers due to these constraints also reduces the frequency of outreach programs and mobile services. In such a context, health governance models that do not factor in geographical challenges risk failing to provide equitable and timely services to isolated communities.

b. Socioeconomic Conditions

Poverty and low levels of education significantly impact healthcare-seeking behavior in island communities. Households with limited financial resources often prioritize daily survival needs over seeking preventive or even curative healthcare. The cost of transportation to distant health centers, coupled with informal costs related to medication or accommodation, can deter individuals from pursuing necessary medical care. These economic barriers contribute to delayed treatment, increased complications, and poorer health outcomes.

Low educational attainment also correlates with reduced health literacy, limiting the population's ability to recognize symptoms, adhere to treatment protocols, or participate in health promotion activities. This often results in a reliance on traditional medicine or misinformation, further distancing communities from formal healthcare systems. Consequently, addressing socioeconomic determinants is critical in any governance reform aimed at improving health equity in remote island settings.

c. Infrastructure

Infrastructure in island regions remains a foundational challenge to effective health service delivery. Many islands lack permanent health facilities or only have poorly equipped health posts. The absence of adequate electricity supply, water access, sanitation, and medical storage facilities compromises the quality and safety of care provided. Additionally, poor road conditions and lack of marine or air transport further hinder access to referral centers, especially during emergencies.

Communication infrastructure is equally vital. In the digital age, the absence of internet connectivity limits the use of telemedicine and digital health records, which are essential tools for bridging service gaps in remote areas. Without investments in basic and digital infrastructure, even well-designed governance models will struggle to reach their intended impact in improving health access and service delivery in archipelagic zones.

d. Institutional Gaps

Weak institutional coordination among relevant agencies hampers the integration and responsiveness of health services. In many cases, health departments do not operate in synergy with transport, communication, or regional development agencies, resulting in disjointed planning and implementation. This lack of intersectoral collaboration prevents the development of holistic solutions that address the multifaceted challenges in island health systems.

Moreover, the fiscal capacity of local governments in island regions is often constrained. Limited locally generated revenue and heavy dependence on central government transfers reduce the ability of districts to tailor health programs to local needs. Budgetary limitations restrict infrastructure expansion, staff incentives, and innovative service delivery models. Strengthening institutional frameworks and improving fiscal autonomy are essential to empowering local governments to effectively manage health governance in island regions.

e. Human Resources

The distribution and retention of health workers in island regions remain a critical bottleneck. Health professionals often view island postings as less desirable due to isolation, lack of facilities, and limited professional development opportunities. Consequently, many posts remain vacant or are filled on a rotating basis, leading to service discontinuity and a lack of trust from the local community. Without sustained human resource presence, efforts to strengthen healthcare delivery face systemic setbacks.

Furthermore, the health workers who do accept postings in remote areas often receive inadequate incentives and insufficient support. Their living and working conditions are generally challenging, and their workload is exacerbated by the broad scope of services required in understaffed facilities. Building a stable, well-supported, and professionally fulfilled health workforce is crucial to improving healthcare effectiveness in remote island settings.

f. Local Culture

Cultural beliefs and practices in island communities significantly influence health behaviors and attitudes toward formal medical services. In many instances, traditional healers (dukun, tabib) remain the first point of contact for individuals experiencing illness. While these figures play important social roles, exclusive reliance on traditional medicine can delay diagnosis and treatment, especially for conditions requiring modern medical intervention. Cultural preferences may also discourage certain populations from utilizing government services due to mistrust or stigma.

Language diversity also presents barriers to effective health communication. In multilingual settings, health messages may not be effectively conveyed if they are not translated or adapted to local dialects. This can affect health promotion campaigns, informed consent processes, and even diagnosis. Culturally competent care including the recruitment of local health workers and the incorporation of local customs into service delivery can bridge these divides and increase the acceptability of formal health services.

Proposed Governance Model

- a. Geographic Referral System: Cross-district/province cooperation based on proximity.
- b. Mobile and Floating Clinics: Expanded PSPB services.
- c. Telemedicine: Digital consultation and integrated health records.
- d. Community Engagement: Local forums and stakeholder involvement.
- e. Policy Differentiation: Incentives and staffing tailored for island contexts.

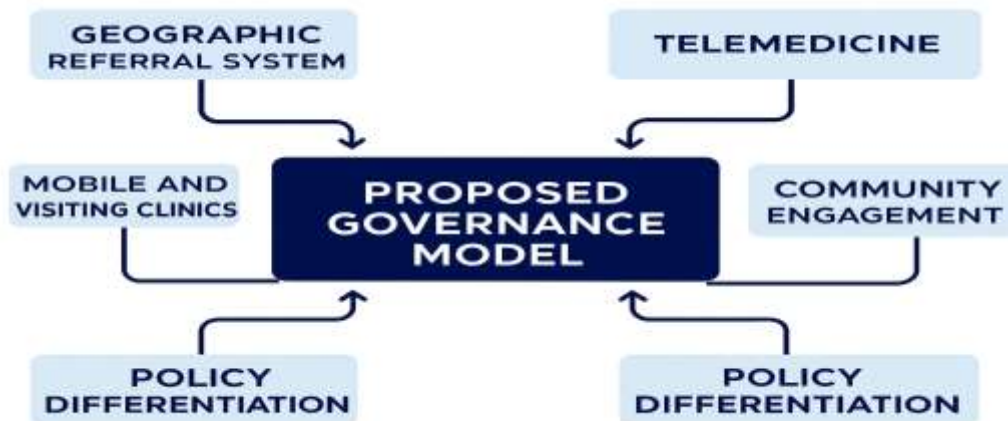


Figure 1. Archipelago-Based Health Governance Model
Source: Processed from research findings

This diagram illustrates five key components of the proposed governance model to enhance healthcare effectiveness in island regions: Geographic Referral System, Mobile and Floating Clinics, Telemedicine, Community Engagement, and Policy Differentiation.

CONCLUSIONS AND RECOMMENDATIONS

The governance of health services in archipelagic regions like Pangkajene and Kepulauan must be fundamentally tailored to address their geographic, infrastructural, and sociocultural realities. Standardized policies applied uniformly across mainland and island areas fail to respond to the specific constraints faced by island communities, such as transportation barriers, limited health infrastructure, and low health literacy. This study highlights the need for place-based solutions that integrate context-sensitive planning with multisectoral coordination, community participation, and targeted investment in digital and physical infrastructure. Only through a localized, responsive approach can equitable health access be achieved in geographically fragmented areas.

The proposed governance model provides a comprehensive framework for reforming health systems in island contexts through five key strategies: geographic referral systems, mobile and floating clinics, telemedicine integration, community engagement, and policy differentiation. These elements collectively foster a health system that is adaptive, inclusive, and resilient. Policymakers are encouraged to institutionalize this model by embedding it into regional development plans, aligning budget allocations with island-specific needs, and strengthening intergovernmental coordination. Ultimately, building a robust, locally grounded governance model is essential to realizing the vision of universal health coverage and closing the persistent service gaps that marginalize island populations.

ADVANCED RESEARCH

Future research should examine the scalability and sustainability of archipelago-based health governance models by integrating spatial analytics, health equity indicators, and digital health innovations. Longitudinal studies across multiple island districts in Indonesia could uncover how variations in geographic isolation, cultural heterogeneity, and fiscal decentralization influence the effectiveness of adaptive governance strategies such as telemedicine, mobile clinics, and community-led health planning. In particular, cross-comparative analyses between coastal and inland island clusters would reveal which governance components such as policy differentiation or intersectoral coordination most directly affect health outcomes. Additionally, integrating system dynamics modeling could offer predictive insights into resource optimization under different funding and infrastructure scenarios. These avenues of inquiry will enhance the theoretical and practical understanding of resilient health governance in complex territorial geographies.

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