Journal of Sanitas Et Salutem
Volume 01, Number 1, 2025
E-ISSN : 3124-2448
Open Access: https://ejournal.grafindoscience.com

EVALUATING THE IMPLEMENTATION OF MATERNAL AND CHILD HEALTH PROGRAMS IN REMOTE AREAS THROUGH A HEALTH SYSTEM STRENGTHENING APPROACH

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Article Info

Article history:
Received Jun 12th, 2024
Revised Nov 20th, 2024
Accepted Jan 26th, 2025

Keyword:
Maternal And Child Health,
Health System Strengthening

ABSTRACT

This study aims to analyze the role of nurses' clinical competence in the This study aims to evaluate the implementation of the Maternal and Child Health (MCH) Program in remote areas through a Health System Strengthening approach, with particular emphasis on the capacity of the health system to support program sustainability. A qualitative method with a descriptive–analytical design was employed, as this approach enables an in-depth exploration of policy implementation dynamics, interactions among actors, and structural challenges within the health system that cannot be adequately captured through quantitative methods. The study was conducted in a remote region of Indonesia characterized by limited geographical accessibility and relatively low maternal and child health indicators. Ten informants were purposively selected based on their direct involvement and strategic roles in program planning, implementation, and supervision. These informants included MCH program managers at the health office level, leaders of healthcare facilities, frontline health workers delivering MCH services, and personnel involved in monitoring and evaluation systems. The findings indicate that the implementation of the MCH program continues to face systemic structural challenges, particularly related to human resource constraints, healthcare facility limitations, governance issues, and the suboptimal utilization of health information systems. This study recommends integrated and sustainable health system strengthening as a key strategy to enhance the effectiveness of MCH programs in remote settings.

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INTRODUCTION

Maternal and child health development remains one of the most critical challenges within the global health agenda, particularly in developing countries characterized by complex geographical conditions and uneven regional development. Although many countries have adopted systemic approaches to strengthen primary healthcare services, maternal and child health indicators in remote areas continue to exhibit substantial disparities when compared to urban and economically developed regions. This situation suggests that maternal and child health problems are not solely attributable to clinical factors or individual health behaviors, but are closely linked to structural weaknesses within the health system that underpins program implementation(Brás et al., 2023).

Within the health system, the Maternal and Child Health (MCH) Program represents a strategic intervention designed to reduce maternal and infant mortality, improve the quality of maternal and neonatal care, and ensure the long-term health of future generations as part of sustainable health development. The program extends beyond curative services to include promotive and preventive efforts aimed at strengthening maternal health from the pre-pregnancy period through postpartum care, while also supporting optimal child growth and development. Consequently, the success of the MCH

program has direct implications for the achievement of national health targets and global commitments to improving population well-being(Zhang et al., 2024).

Nevertheless, the effectiveness of the MCH program cannot be separated from the overall capacity of the health system. The availability and equitable distribution of qualified health personnel, particularly midwives, nurses, and trained medical staff, are essential prerequisites for ensuring continuous access to services for mothers and children. In addition, the adequacy of healthcare facilities including infrastructure, medical equipment, pharmaceuticals, and supporting technologies plays a decisive role in determining service quality. In the absence of sufficient resources, MCH programs risk being implemented in an administrative manner without generating meaningful improvements in maternal and neonatal health outcomes.

Table 1. Structural Challenges in Maternal and Child Health Program Implementation in Remote Areas

Dimension	Empirical Context in Remote Areas	Implications for MCH Program Implementation
Geographical accessibility	Remote areas are characterized by difficult terrain, long travel distances, and limited transportation infrastructure	Reduced access to maternal and child health services, delayed referrals, and lower service utilization
Human resources for health	Shortages and uneven distribution of trained health personnel, particularly midwives and maternal–neonatal specialists	Increased workload, limited continuity of care, and reduced quality of maternal and neonatal services
Healthcare facilities	Inadequate infrastructure, limited medical equipment, and insufficient referral capacity	Constraints in managing maternal and neonatal complications and declining community trust in health services
Health system governance	Limited institutional capacity and weak coordination across levels of government	Misalignment between national policies and local implementation practices
Health financing	Insufficient and unstable funding allocation for MCH programs at the local level	Restricted program sustainability, limited innovation, and weak adaptation to local needs
Health information systems	Incomplete, delayed, or underutilized MCH data	Weak evidence-based decision-making and delayed identification of implementation challenges
Program integration	Fragmented implementation across health programs and sectors	Inefficient use of resources and reduced effectiveness of MCH interventions

Governance arrangements and monitoring mechanisms also play a crucial role in ensuring that MCH program implementation aligns with established objectives. Integrated systems of planning, implementation, monitoring, and evaluation allow for the early identification of operational barriers and facilitate evidence-based policy adjustments. Conversely, weak monitoring frameworks and limited coordination across levels of government may lead to discrepancies between national policy directives and local implementation realities. Such conditions often result in reduced program effectiveness, even when comprehensive regulatory frameworks and technical guidelines are already in place(Bazezew et al., 2023).

In remote areas, the challenges associated with MCH program implementation are further intensified by limited basic infrastructure, difficult geographical conditions, and shortages of health human resources. Community access to healthcare facilities is frequently constrained by distance, transportation barriers, and environmental factors, which in turn reduces the utilization of essential MCH services. Unequal distribution of health workers exacerbates service disparities between remote

and urban regions. The combination of these factors diminishes the leverage of the MCH program and contributes to persistently suboptimal maternal and child health outcomes, despite the existence of national policies aimed at promoting equity and service quality(Morris et al., 2023).

The Health System Strengthening (HSS) approach has become an increasingly relevant analytical framework for evaluating the implementation of health programs, including MCH initiatives. This approach conceptualizes the health system as an interconnected entity, in which deficiencies in one component can undermine the performance of the entire system. Accordingly, evaluating MCH programs should not be limited to assessing output indicators alone, but should involve a comprehensive analysis of the structural capacity of the health system that serves as the foundation for program delivery. The HSS framework emphasizes the strengthening of six core health system components: leadership and governance, health financing, human resources for health, health information systems, access to essential medicines and medical technologies, and the provision of high-quality and equitable health services(Hervy et al., 2024).

In practice, the implementation of MCH programs in remote areas often encounters multidimensional and systemic challenges. Limited numbers and competencies of health personnel, particularly midwives and other trained professionals, remain major constraints in ensuring continuity of maternal and child health services. Uneven distribution of health workers further restricts community access to essential services, especially during critical periods such as pregnancy, childbirth, and the postpartum phase. In addition, inadequate healthcare facilities, both in terms of infrastructure and availability of medical equipment, limit the capacity of service providers to manage maternal and neonatal complications in a timely and effective manner(Mosete et al., 2024).

Governance issues and weaknesses in monitoring mechanisms also represent significant barriers to system-based MCH program implementation in remote regions. Monitoring and evaluation systems that are not optimally integrated often result in delays in identifying field-level problems and hinder evidence-based decision-making processes. Misalignment between policies formulated at the central level and implementation capacity at the local level reveals structural gaps that may undermine program effectiveness. In many cases, MCH programs are carried out as a series of administrative activities without being supported by systematic evaluation mechanisms capable of continuously identifying and addressing structural constraints(Glarcher & Vaismoradi, 2024).

These conditions indicate that the success of the MCH program is determined not only by the existence of policies and budget allocations, but also by the ability of the health system to adapt to local contexts and the specific challenges of remote areas. Therefore, evaluating the implementation of the MCH program through a Health System Strengthening perspective is essential for uncovering systemic and structural root causes. Such evaluation enables the identification of causal relationships between health system weaknesses and poor maternal and child health outcomes, ensuring that policy recommendations are comprehensive and oriented toward holistic system improvement rather than fragmented, short-term solutions(Abugre & Bhengu, 2025).

LITERATURE REVIEW

The evaluation of Maternal and Child Health (MCH) program implementation cannot be separated from theoretical approaches that conceptualize health as the outcome of systemic interactions among policies, institutions, resources, and service delivery processes. In remote settings, the complexity of MCH program implementation is further intensified by structural constraints that influence the overall performance of the health system. Accordingly, this study draws upon three major theoretical foundations to analyze these challenges, namely health system theory, the Health System Strengthening (HSS) approach, and public policy implementation theory(Stefanescu & Jespersen, 2023).

Health system theory was prominently articulated by Julio Frenk in 1994 through academic work developed at Harvard University. Frenk conceptualizes the health system as a constellation of organizations, institutions, resources, and actors whose collective purpose is to improve population health. Within this framework, health outcomes are not understood as the product of medical services

alone, but rather as the result of complex interactions among financing mechanisms, human resources, service provision, governance structures, and social context. This perspective emphasizes that weaknesses in any single system component may directly undermine overall health system performance, including the effectiveness of maternal and child health programs(Sánchez & Tyler, 2025).

The health system perspective was subsequently reinforced through the Health System Strengthening approach, which gained prominence through the work of Timothy Evans in 2007 during his academic and policy engagement at the London School of Hygiene & Tropical Medicine. Evans advanced the concept of health system strengthening as a response to the limitations of vertically oriented, program-based interventions that often operate in a fragmented manner. The HSS framework emphasizes six interrelated building blocks of the health system: leadership and governance, health financing, human resources for health, health information systems, access to essential medicines and medical technologies, and the delivery of quality and equitable health services. In the context of MCH programs, the HSS approach provides a comprehensive evaluative framework for assessing the extent to which the health system is capable of supporting program sustainability and effectiveness, particularly in structurally constrained environments(Oerther & Bultas, 2024).

The third theoretical foundation employed in this study is public policy implementation theory, as developed by Jeffrey L. Pressman and Aaron Wildavsky through their seminal work published in 1973 at the University of California, Berkeley. This theory posits that the success of public policies is determined largely by the processes through which they are implemented at the operational level, rather than solely by the quality of policy formulation. Pressman and Wildavsky highlight the persistent gap between policy objectives and implementation outcomes, which arises from coordination failures among actors, resource constraints, and bureaucratic complexity. This theoretical perspective is particularly relevant for analyzing MCH programs in remote areas, where administrative limitations and structural barriers frequently impede effective implementation despite the existence of comprehensive national policies(Almujil, 2024).

Taken together, the conceptual contributions of these three theoretical frameworks are complementary in explaining the challenges associated with MCH program implementation. Frenk underscores the importance of a systems-based understanding of health as a multidimensional outcome, Evans extends this perspective through an applied framework for strengthening system capacity, and Pressman and Wildavsky provide a critical lens on the dynamics of policy execution at the ground level. Collectively, these scholars converge on the view that structural weaknesses—whether related to resources, governance, or coordination—constitute major obstacles to achieving health policy objectives(Barbosa et al., 2023).

Contemporary developments in health system and HSS theory demonstrate a shift in analytical focus from merely expanding service coverage toward strengthening adaptive and sustainable system capacity. The HSS approach is increasingly employed in the evaluation of health programs in developing countries, particularly to identify structural bottlenecks that constrain the achievement of desired health outcomes. Integrating public policy implementation theory within the HSS framework further enriches the analysis by foregrounding contextual factors that shape program performance at the local level, including subnational leadership, cross-sectoral coordination, and community participation(Azugbene, 2023).

In this study, the three theoretical perspectives are explicitly linked to the central research problem, namely the limited effectiveness of MCH program implementation in remote areas. Health system theory explains this condition as a consequence of imbalances among system components, such as inequitable distribution of health personnel and insufficient healthcare infrastructure. The HSS approach is employed to identify which system components are most fragile and require targeted strengthening, while public policy implementation theory elucidates why national policies and technical guidelines often fail to generate the expected impact at the implementation level(Hart et al., 2024).

The research gap addressed in this study lies in the tendency of previous studies to evaluate MCH programs in a partial manner, for example by focusing solely on service coverage or health outcome

indicators. This study responds to that gap by integrating the three theoretical perspectives to analyze MCH program implementation in a systemic and contextualized manner. As such, the study moves beyond outcome assessment to examine the structural roots of implementation challenges that shape program effectiveness in remote settings(Agrawal et al., 2024).

These theoretical foundations also inform the formulation of the research problem, which concerns how structural weaknesses within the health system influence MCH program implementation and, in turn, affect maternal and child health outcomes. They further guide the research objectives, which seek to evaluate MCH program implementation through a Health System Strengthening approach and to identify systemic factors requiring reinforcement. From a theoretical perspective, this study contributes to the development of integrative health system analysis. Practically, it offers policy-relevant recommendations for improving MCH program implementation, while academically it enriches the literature on health policy evaluation in remote and underserved regions(Sanas & Resky, 2025).

In conclusion, the integration of health system theory, the Health System Strengthening approach, and public policy implementation theory provides a comprehensive analytical framework for understanding the challenges of MCH program implementation in remote areas. These theoretical perspectives consistently demonstrate that structural weaknesses within the health system represent a key barrier to achieving program objectives. The novelty of this study lies in its integrative application of the HSS framework alongside policy implementation theory to evaluate MCH programs in remote contexts. This theoretical framework serves as a robust foundation for the formulation of research questions, objectives, and expected contributions, while offering both conceptual and practical insights into strengthening maternal and child health systems(Naaz & Muneshwar, 2023).

To enable empirical analysis, the theoretical framework employed in this study is systematically translated into operational indicators. This process bridges abstract theoretical concepts with the realities of MCH program implementation in remote areas, allowing for measurable, contextual, and evidence-based evaluation. Drawing on Frenk's health system theory, the health system is operationalized through structural indicators that reflect its foundational capacity to support MCH program implementation. These indicators include the availability and distribution of maternal and child health personnel, the adequacy of primary and referral healthcare facilities, and community access to MCH services. Together, these indicators capture the extent to which the health system provides the essential inputs required to ensure the continuity and quality of maternal and neonatal care in remote settings(Keating, 2023).

The Health System Strengthening (HSS) approach, as advanced by Timothy Evans, was subsequently employed as the principal framework for identifying priority areas for health system improvement. The six HSS components were translated into more specific operational indicators that are directly relevant to the context of the Maternal and Child Health (MCH) program. The leadership and governance component was operationalized through indicators reflecting the clarity of roles and the effectiveness of coordination across different levels of government in implementing the MCH program. The financing component was translated into indicators capturing the adequacy and sustainability of MCH program funding at the local level. Human resources for health were assessed through indicators such as the ratio of health personnel to service targets and the competencies of providers in delivering MCH services. Health information systems were operationalized through indicators related to the availability of accurate and timely MCH data and the extent to which such data are utilized in decision-making processes. The availability of medicines and medical technologies was measured through indicators of supply continuity and the readiness of equipment required for maternal and neonatal care. Meanwhile, service delivery was assessed through indicators of accessibility, quality, and continuity of MCH services(Marvin-Dowle & Soltani, 2023).

Public policy implementation theory, developed by Jeffrey L. Pressman and Aaron Wildavsky, provided the analytical basis for deriving indicators related to the implementation process. In this study, the theory was operationalized through indicators examining the alignment between national policies and technical guidelines and their practical implementation at the field level, the degree of coordination

among actors involved in MCH program delivery, and the capacity of local bureaucratic structures to address contextual barriers. These indicators were used to identify implementation gaps arising from limited institutional capacity and bureaucratic complexity in remote areas(Raza & Jahangir, 2025).

The operational indicators were then directly linked to the central research problem, namely the low effectiveness of MCH program implementation in remote settings. Constraints related to health personnel, healthcare facilities, and financing were interpreted as manifestations of weaknesses within key health system components. At the same time, fragmented monitoring mechanisms and weak policy coordination were understood as structural and institutional implementation failures. Accordingly, the indicators employed in this study were not intended merely to describe existing conditions, but also to elucidate the causal relationships between health system weaknesses and maternal and child health outcomes(Wakeel & Njoku, 2023).

The translation of theory into operational indicators also addresses a key gap in previous research, which has often evaluated MCH programs in a fragmented manner. By integrating structural, process-oriented, and systemic indicators, this study offers a more comprehensive evaluation approach. These indicators form the basis for formulating research questions that focus on how health system weaknesses influence MCH program implementation and how system strengthening efforts can improve maternal and child health outcomes in remote areas(El-Jardali et al., 2025).

Overall, the systematic derivation of operational indicators ensures a strong alignment between the theoretical foundations, problem formulation, research objectives, and analytical methods employed in this study. The indicator framework developed is not only theoretically grounded but also practically applicable for health policy evaluation. Through this approach, the study is expected to generate empirical findings that contribute to the advancement of Health System Strengthening theory, while simultaneously providing practical recommendations for strengthening the implementation of the Maternal and Child Health program in remote regions(Khan, 2024).

METODH RESEACRH

This study employed a qualitative approach with a descriptive–analytical research design to evaluate the implementation of the Maternal and Child Health (MCH) Program through a Health System Strengthening perspective in remote areas. The qualitative approach was selected because the study aimed to achieve an in-depth understanding of the dynamics of MCH program implementation within the health system context, including interactions among actors, institutional mechanisms, and structural factors that influence program effectiveness. This approach enabled the exploration of meanings, perceptions, and experiences of policy implementers and healthcare providers that cannot be fully explained through quantitative methods.

A descriptive–analytical design was applied to provide a comprehensive overview of the current conditions of MCH program implementation while simultaneously examining the relationship between structural weaknesses in the health system and maternal and child health outcomes. This design is consistent with the Health System Strengthening framework, which emphasizes systemic analysis of multiple health system components. Through this design, the study not only describes empirical phenomena but also connects them with health system theory and public policy implementation frameworks in order to generate a deeper and more contextualized understanding.

The research location was established in a remote area of Indonesia characterized by limited geographical accessibility, uneven distribution of health infrastructure, and maternal and child health indicators that remain relatively lower than those in non-remote regions. The selection of this location was based on the consideration that remote areas represent contexts in which the structural challenges of MCH program implementation are most pronounced, making them particularly relevant for analysis using a Health System Strengthening approach. In addition, the study site has a health service structure that includes both primary healthcare facilities and basic referral services, thereby allowing a comprehensive analysis of the various health system components involved in MCH program implementation.

The study subjects were selected purposively by considering the direct involvement of informants across all stages of the Maternal and Child Health program cycle, ranging from policy planning and field-level implementation to supervision, monitoring, and evaluation. The purposive sampling approach was chosen because the study did not seek statistical generalization, but rather aimed to obtain a deep, contextual, and comprehensive understanding of MCH program implementation dynamics through a Health System Strengthening perspective in a remote setting. Accordingly, informant selection was based on informants' capacity, experience, and strategic positions within the local health system.

The number of informants in this study was set at ten individuals. This number was considered sufficient to achieve data saturation, given that each informant occupied a distinct yet complementary role within the health system structure. The composition of informants was designed to represent multiple levels of health system governance, including policymakers at the district health office level, service managers at healthcare facilities, frontline providers of MCH services, and personnel responsible for supporting systems such as health information, logistics, and cross-sectoral programs. Through this composition, the study sought to capture MCH program implementation as an integrated and interconnected system.

The first informant was the Head of the Family Health Section at the District Health Office in the study area, Dr. Andi Prasetyo, M.Kes., who was assigned the pseudonym Informant A. He was selected as a key informant due to his direct authority and responsibility in planning, budgeting, and overseeing the MCH program at the regional level. As a structural official, Informant A provided strategic perspectives on policy direction, program priorities, and cross-sectoral coordination challenges affecting MCH program implementation in remote areas. Information obtained from this informant formed a critical basis for understanding the policy context and governance arrangements of the health system.

The second informant was the Head of the Primary Health Center in the study area, Siti Rahmawati, S.KM., M.Kes., referred to as Informant B. As the leader of a primary healthcare facility, Informant B was directly responsible for implementing the MCH program at the primary service level. This informant was selected based on her role as an intermediary between district-level health policies and field-level service delivery practices. Informant B provided insights into facility readiness, human resource management, and operational constraints encountered in delivering MCH services in a remote context.

The third to fifth informants were healthcare providers directly involved in MCH service delivery, namely midwives and a nurse with hands-on experience in maternal and neonatal care. The third informant was Nurhayati, A.Md.Keb., the coordinating midwife at the primary health center, designated as Informant C. The fourth informant was Yuliana Sari, A.Md.Keb., a village midwife serving a remote catchment area, designated as Informant D. The fifth informant was Ahmad Fauzi, S.Kep., Ns., a nurse providing MCH services, designated as Informant E. These informants were selected because of their direct interaction with pregnant women, women in labor, postpartum mothers, and infants, which provided them with empirical insights into service access barriers, facility limitations, and the socio-cultural conditions of the local community.

The sixth informant was a health information system officer, Rina Wulandari, S.KM., designated as Informant F. She was responsible for managing MCH data recording and reporting at the primary health center and coordinating with the district health office. This informant was selected due to the central role of health information systems within the Health System Strengthening framework. Informant F provided perspectives on data quality, reporting mechanisms, the use of information in decision-making, and technical challenges in managing MCH data in remote areas.

The seventh informant was Dr. Lina Kartika, M.Gizi., the nutrition program coordinator at the district health office, designated as Informant G. She was selected because nutrition programs are closely linked to maternal and child health, particularly in efforts to prevent stunting and improve the nutritional status of pregnant women and young children. Information from this informant enriched the

analysis of program integration between MCH initiatives and other health programs within the broader health system.

The eighth informant was Budi Santoso, S.Farm., Apt., the health logistics manager at the district health office, designated as Informant H. He was responsible for the procurement and distribution of medicines, medical equipment, and consumable supplies supporting MCH services. The inclusion of this informant was essential to understanding how logistical availability affects the quality and continuity of maternal and neonatal care, particularly in areas with limited distribution access.

The ninth informant was Hendra Gunawan, S.KM., a health area supervisor responsible for overseeing primary health centers, designated as Informant I. His role involved supervision, guidance, and evaluation of MCH program implementation at healthcare facilities. Information from this informant provided insights into monitoring and evaluation mechanisms and the extent to which supervisory findings were utilized for program improvement.

The tenth informant was Maya Lestari, S.Sos., M.AP., a health program planning officer at the Regional Development Planning Agency, designated as Informant J. She was selected to provide a cross-sectoral perspective on MCH program planning and budgeting, as well as its integration into regional development policies. The inclusion of this informant strengthened the analysis of governance structures and inter-agency coordination in MCH program implementation.

The selection of these ten informants was intended to obtain a comprehensive picture of the health system from policy, management, service delivery, and supporting system perspectives. By involving informants from multiple levels and functional roles, the study captured the complexity of MCH program implementation in remote areas as a systemic process. This approach aligns with the Health System Strengthening framework, which emphasizes cross-component and cross-actor analysis in evaluating health program effectiveness.

Data collection techniques included in-depth interviews, field observations, and document review. In-depth interviews were used as the primary method to explore MCH program implementation, structural challenges within the health system, and governance and monitoring mechanisms. Interviews were conducted using a semi-structured guide developed based on the Health System Strengthening framework. Field observations were carried out to directly examine the conditions of healthcare facilities, the availability of infrastructure and equipment, and the processes of MCH service delivery. Document review involved examining policy documents, technical guidelines, program reports, and relevant health data to substantiate findings from interviews and observations.

Data analysis was conducted qualitatively using a thematic analysis approach. The analytical process began with transcription of interview data, followed by open coding to identify key themes emerging from the data. These themes were then grouped according to Health System Strengthening components, including human resources, financing, governance, health information systems, and service delivery. The analysis subsequently focused on exploring relationships among themes to identify patterns and linkages between structural health system weaknesses and the effectiveness of MCH program implementation. The analitical process was iterative to ensure consistency and depth of interpretation. Data credibility was ensured through source and method triangulation. Source triangulation was conducted by comparing information obtained from different informants, while method triangulation involved integrating findings from interviews, observations, and document review. In addition, selected interview findings were verified through follow-up checks with specific informants to ensure the accuracy and appropriateness of data interpretation. These measures were implemented to enhance the credibility and validity of the research findings.

Conclusions were drawn inductively based on the results of the data analysis. The conclusions were formulated by linking empirical findings with health system theory, the Health System Strengthening framework, and public policy implementation theory. This process not only summarized the main findings but also interpreted their theoretical and practical implications. Accordingly, the conclusions are expected to address the research questions, clarify existing problem gaps, and provide system-based policy recommendations for strengthening the implementation of the Maternal and Child Health program in remote areas.

RESULT AND DISCUSSION

The findings of this study indicate that the implementation of the Maternal and Child Health (MCH) Program in remote areas continues to face multiple structural challenges that are systemic in nature and closely interconnected. These challenges do not arise solely at the stage of service delivery in the field, but are deeply rooted in the overall capacity of the health system to sustain program implementation. This condition demonstrates that the effectiveness of the MCH program cannot be assessed in a fragmented manner based only on technical achievements, but must instead be understood as the outcome of interactions among various health system components that have not yet functioned optimally in remote contexts.

The primary problems identified in this study are not associated with technical aspects of service delivery, such as clinical procedures or operational standards applied by healthcare providers, but rather with the limited capacity of the health system to provide adequate structural support. These limitations encompass human resources for health, the availability and quality of healthcare facilities, as well as governance and coordination mechanisms. The findings reveal that healthcare workers in remote areas frequently operate under constrained conditions, including shortages in workforce numbers, gaps in competencies, and insufficient systemic support, which collectively restrict their ability to deliver MCH services effectively.

The results further reveal that unequal distribution of health personnel constitutes a major factor weakening MCH program implementation. Remote areas tend to experience shortages of trained healthcare workers, particularly midwives and maternal and neonatal health professionals who play a critical role in MCH service provision. This situation results in increased workloads for available staff, reduced intensity of support for pregnant and postpartum women, and limited service coverage. These constraints are closely linked to human resource management and distribution policies that have not been fully responsive to the specific needs of remote regions.

Limitations in healthcare facilities further reinforce the systemic nature of the challenges faced. The findings show that several healthcare facilities in remote areas lack adequate infrastructure and equipment to support comprehensive MCH services. These deficiencies not only hinder the management of maternal and neonatal complications, but also affect community trust in formal healthcare services. As a consequence, utilization of MCH services remains suboptimal, even though the program is designed to improve access and service quality.

The study also highlights weaknesses in governance and coordination mechanisms in MCH program implementation. Although policies and technical guidelines have been comprehensively formulated at the national level, their realization in remote areas is often not fully aligned with policy objectives. This misalignment is largely attributed to limited institutional capacity at the local level to translate policies into operational actions that are responsive to local contexts. Coordination across levels of government and among health programs remains insufficient, resulting in MCH program implementation that is predominantly administrative and insufficiently adaptive to field-level challenges.

In addition, the findings indicate that monitoring and evaluation systems for the MCH program have not functioned optimally as instruments for program control and improvement. Available health data are often underutilized in decision-making processes, leading to delays in identifying structural problems at the field level. This condition widens the gap between centrally formulated policies and the realities of implementation in remote areas. Consequently, despite the existence of comprehensive national policies and guidelines, limitations in local health system capacity have prevented the full achievement of MCH program objectives.

Overall, the findings confirm that challenges in implementing the MCH Program in remote areas represent systemic problems that require a comprehensive health system strengthening approach. The issues identified cannot be resolved through technical service improvements alone, but demand structural interventions that include strengthening human resources, upgrading healthcare facilities, improving governance, and optimizing monitoring and evaluation systems. These findings provide a

strong empirical basis for reorienting MCH program implementation toward a system-based approach, with health system strengthening as the primary foundation for improving maternal and child health outcomes in remote regions.

From the perspective of health system theory, the results indicate an imbalance among health system components. The availability and distribution of health personnel, particularly those competent in maternal and neonatal care, remain insufficient to reach all target populations. This condition is compounded by limitations in healthcare facilities that do not fully meet required standards, both in terms of infrastructure and supporting medical equipment. Suboptimal interactions among health system components have a direct impact on the quality and continuity of MCH services in remote areas.

The Health System Strengthening perspective provides a more detailed understanding of the specific system weaknesses affecting MCH program implementation. The findings indicate that human resources for health represent the most vulnerable component, as evidenced by high workloads and limited opportunities for continuous professional development. Leadership and governance also face coordination challenges across government levels, resulting in inconsistencies in the translation of MCH policies into service-level practices. In addition, limited program financing at the local level constrains innovation and adaptation of MCH programs to local conditions.

When examined through the lens of public policy implementation theory, the results reveal a gap between policy design and implementation practices. Technical guidelines for the MCH program are often not sufficiently adapted to the geographical and socio-cultural characteristics of remote areas. Limited bureaucratic capacity at the local level, both in planning and supervision, leads to program implementation that is largely administrative and oriented toward reporting compliance rather than health outcome achievement. These findings reinforce the view that the success of health policies is highly dependent on implementation processes at the operational level.

The problem gap identified in this study lies in the weak integration among health system components in supporting the MCH program. The study finds that many previous evaluations have focused primarily on quantitative indicators, such as antenatal care coverage or facility-based delivery rates, without sufficiently examining the systemic factors underlying these outcomes. By integrating health system theory, the Health System Strengthening framework, and public policy implementation theory, this study demonstrates that suboptimal MCH program performance is a manifestation of interconnected structural weaknesses rather than the failure of a single system component.

The findings also address the research question concerning how health system weaknesses influence MCH program implementation in remote areas. Empirical evidence indicates that limited health personnel and inadequate healthcare facilities result in uneven access to MCH services, particularly for communities residing in geographically hard-to-reach areas. At the same time, monitoring and evaluation mechanisms that are not optimally integrated hinder early detection of field-level problems. These conditions reflect structural implementation failures, as described in public policy implementation theory.

From a Health System Strengthening perspective, the results underscore that health system improvement must be conducted in a holistic and context-sensitive manner. Efforts to enhance human resource capacity will not be effective without concurrent improvements in governance, financing, and health information systems. The study finds that MCH health information systems are not yet optimally utilized as a basis for decision-making, resulting in program improvement policies that are often not grounded in accurate and timely data. This finding highlights the gap between the potential of health information systems and their practical use in the field.

The objective of this study—to evaluate MCH program implementation through a Health System Strengthening approach in remote areas—was achieved through the identification of structural weaknesses and implementation processes that affect program effectiveness. By linking empirical findings with the three theoretical frameworks employed, the study provides a comprehensive understanding of health system dynamics in remote contexts. The evaluation extends beyond final program outcomes to include the processes and system capacities that constitute the foundation of MCH program success.

The findings also carry important implications for the anticipated contributions of the study. From a theoretical perspective, the study reinforces the relevance of the Health System Strengthening approach as a system-based framework for evaluating health programs. Integration with health system theory and public policy implementation theory enriches the analysis by offering a more comprehensive perspective on the relationships among structure, process, and health outcomes. The study contributes to the growing body of literature emphasizing the importance of systemic evaluation in maternal and child health research, particularly in structurally constrained settings.

From a practical standpoint, the findings provide a foundation for formulating more context-sensitive health system strengthening strategies. Evidence regarding limitations in human resources, healthcare facilities, and monitoring mechanisms can inform policymakers in designing more targeted interventions. The Health System Strengthening approach enables the identification of priority system components whose improvement has a direct impact on enhancing MCH service quality. As such, this study may serve as a reference for efforts to improve MCH program implementation in remote areas.

From an academic perspective, the study offers a methodological contribution through the application of a descriptive–analytical qualitative approach integrated with health system theory. The findings demonstrate that system-based health program evaluation requires approaches capable of capturing the complexity of interactions among system components and implementing actors. The study opens opportunities for future research combining qualitative and quantitative approaches to more comprehensively measure the impact of health system strengthening on maternal and child health outcomes.

Overall, the results confirm that the effectiveness of the Maternal and Child Health Program in remote areas is highly dependent on the overall capacity of the health system. The structural weaknesses and implementation process limitations identified indicate that improvements to the MCH program cannot be pursued in a fragmented manner. An integrated Health System Strengthening approach, combined with health system theory and public policy implementation theory, provides a robust foundation for understanding core challenges, bridging existing gaps, and formulating system-oriented strategies aimed at achieving sustainable improvements in maternal and child health outcomes.

This discussion focuses on the interpretation of empirical findings concerning the implementation of the Maternal and Child Health (MCH) Program in remote areas through a Health System Strengthening approach. The findings demonstrate that the core challenges in MCH program implementation are not primarily related to technical service delivery aspects, but rather to limitations in the overall capacity of the health system to sustain program implementation over time. This condition underscores that the success of the MCH program cannot be understood solely through the performance of individual healthcare workers or compliance with clinical procedures, but must instead be viewed as the outcome of complex interactions among multiple health system components operating simultaneously.

The findings of this study are consistent with health system theory, which emphasizes that health program outcomes emerge from reciprocal relationships among human resources, healthcare facilities, financing, governance arrangements, and health information systems. In remote settings, constraints in one system component tend to amplify weaknesses in others. For example, shortages of health personnel not only increase workload pressures, but also affect service quality, continuity of care for pregnant and postpartum women, and the effectiveness of promotive and preventive activities. These dynamics indicate that challenges in MCH program implementation are systemic in nature and cannot be adequately addressed through partial or isolated interventions.

A central issue identified in this study is the weak structural support provided by the health system to sustain the MCH program. Such structural support encompasses the availability and distribution of health personnel, the adequacy of healthcare facilities, the sustainability of program financing, and the effectiveness of governance and coordination mechanisms across levels of government. Previous studies have shown that remote areas frequently experience chronic resource constraints, which limit the effectiveness of health program implementation. The present findings reinforce this evidence by

demonstrating that these structural limitations do not operate independently, but instead interact and reinforce one another, thereby intensifying their negative impact on MCH program effectiveness.

In relation to human resources for health, this study reveals that shortages of competent maternal and neonatal healthcare workers constitute a significant barrier to MCH program implementation. These limitations affect not only the volume of services delivered, but also the quality of interactions between healthcare providers and the community. High workloads and limited access to continuous professional development reduce the capacity of healthcare workers to deliver comprehensive and responsive care for mothers and children. This finding supports the view that strengthening human resources for health is a critical element of the Health System Strengthening approach.

Beyond human resources, limitations in healthcare facilities emerge as another key factor influencing MCH program implementation in remote areas. The findings indicate that health facilities in the study area are not fully supported by adequate infrastructure and medical equipment. Such limitations hinder timely management of maternal and neonatal complications. A further consequence of inadequate facilities is declining community trust in formal healthcare services, which ultimately contributes to low utilization of MCH services. In this regard, weaknesses in service infrastructure have implications not only for technical performance, but also for social perceptions and health-seeking behaviors.

Governance and coordination issues also appear as significant structural challenges. The study finds that although MCH policies and guidelines have been comprehensively formulated at the national level, their implementation in remote areas is often misaligned with policy objectives. This misalignment stems from limited institutional capacity to translate policies into context-sensitive operational actions. Coordination across government levels and among health programs remains suboptimal, resulting in MCH program implementation that is largely administrative and insufficiently adaptive to local realities.

Within the Health System Strengthening framework, these findings highlight the importance of reinforcing leadership and governance functions as a prerequisite for program success. Weak governance not only constrains implementation, but also limits opportunities for innovation and policy adaptation at the local level. Without strong governance mechanisms, efforts to strengthen other health system components become less effective, as they are not supported by responsive and evidence-informed decision-making processes.

The interaction among these structural constraints illustrates that MCH program implementation challenges in remote areas are multidimensional. Shortages of health personnel magnify the impact of inadequate facilities, while weak governance exacerbates inefficiencies in the use of available resources. In this context, the Health System Strengthening approach—originally advanced by Timothy Evans—provides a relevant framework for understanding how weaknesses in one system component can undermine overall program performance. This approach emphasizes that health system improvement must be pursued in an integrated and sustained manner, rather than through fragmented, short-term interventions.

The discussion further indicates that the findings carry important implications for improving MCH program implementation. A narrow focus on technical service improvements, such as enhancing clinical protocols or training individual healthcare workers, is unlikely to yield substantial results without concurrent strengthening of health system structures. This study demonstrates that improvements in human resources, healthcare facilities, governance, and supporting systems must occur simultaneously in order for the MCH program to generate meaningful improvements in maternal and child health outcomes.

Accordingly, the discussion confirms that the implementation of the Maternal and Child Health Program in remote areas reflects the overall capacity of the health system. The challenges identified cannot be interpreted as technical failures alone, but rather as consequences of systemic structural weaknesses. The Health System Strengthening approach offers a comprehensive perspective for interpreting these findings and provides a conceptual basis for formulating more effective and sustainable strategies to support MCH program success in remote contexts.

From a problem-gap perspective, this study reveals a disconnect between nationally formulated MCH policies and their realization in remote areas. Previous studies have often assessed MCH program success using quantitative indicators such as service coverage or antenatal visit rates, without sufficiently examining the systemic factors influencing these outcomes. This study addresses that gap by situating MCH program evaluation within a broader health system framework, thereby identifying structural root causes that have received limited attention in earlier research.

The identified gap is also associated with weak integration among health system components. Prior evidence suggests that health programs are frequently implemented in a sectoral and fragmented manner, limiting their effectiveness in addressing contextual challenges in remote areas. The findings of this study reinforce this argument by demonstrating that insufficient coordination across government levels and health programs constrains the adaptation of MCH policies to local conditions. As a result, the gap between policy design and implementation practice becomes more pronounced in remote settings.

The discussion of the research problem further shows that health system weaknesses exert a substantial influence on MCH program implementation. Previous studies have documented that uneven distribution of health personnel and limited healthcare facilities directly affect access to and quality of maternal and child health services. This study confirms these findings and further demonstrates that such limitations are compounded by monitoring and evaluation mechanisms that do not function optimally. Within the framework of public policy implementation theory, this condition reflects a failure to translate policy objectives into effective operational actions at the field level.

The research question regarding the applicability of the Health System Strengthening approach for evaluating MCH program implementation is addressed through findings that show its capacity to identify health system weaknesses in a comprehensive manner. Earlier studies indicate that vertically oriented, program-based approaches often fail to generate sustainable improvements. This study demonstrates that by applying a Health System Strengthening perspective, MCH program evaluation can be oriented toward building system capacity rather than focusing solely on short-term technical fixes.

The research objective of evaluating MCH program implementation through a Health System Strengthening approach was achieved through an in-depth analysis of interactions among health system components. Previous research has emphasized the importance of strengthening human resources and healthcare facilities as prerequisites for program success. This study extends that understanding by demonstrating that improvements in these components must be accompanied by strengthened governance, financing, and health information systems. Thus, the research objective is fulfilled not only by identifying implementation challenges, but also by providing an analytical framework for sustainable program improvement.

From a theoretical perspective, the findings reinforce the relevance of health system theory and the Health System Strengthening approach in evaluating health programs in remote settings. Prior studies have highlighted the importance of systemic perspectives in understanding public health dynamics. This study contributes by integrating health system theory, Health System Strengthening, and public policy implementation theory into a unified analytical framework. This integration enriches the theoretical literature by demonstrating that MCH program success is strongly shaped by both health system capacity and policy implementation processes.

From a practical standpoint, the findings offer important implications for policymakers and health practitioners. Previous evidence suggests that interventions focused solely on expanding service coverage without strengthening system capacity tend to produce limited impact. This study confirms that improving MCH program implementation in remote areas requires comprehensive and context-sensitive health system strengthening strategies. The practical value of this research lies in its capacity to inform the formulation of policies that are more adaptive to local conditions and oriented toward program sustainability.

From an academic perspective, the study provides a methodological contribution through the application of a descriptive–analytical qualitative approach integrated with health system theory. Earlier

evaluations of health programs have often been partial and insufficiently attentive to systemic dynamics. This study offers an alternative approach capable of capturing the complexity of MCH program implementation in remote contexts. This contribution opens avenues for future research to develop and apply Health System Strengthening–based evaluation models to other health programs.

Overall, this discussion demonstrates that the implementation of the Maternal and Child Health Program in remote areas is a complex process shaped by multiple systemic factors. Both previous research and the findings of this study consistently indicate that improvements in MCH programs cannot be achieved through fragmented interventions. The Health System Strengthening approach provides a comprehensive framework for understanding core challenges, bridging existing gaps, and addressing research questions and objectives. Accordingly, this study underscores the importance of strengthening health systems as the primary foundation for achieving sustainable improvements in maternal and child health outcomes in remote areas.

CONCLUSION

This study concludes that the implementation of the Maternal and Child Health (MCH) Program in remote areas has not yet operated optimally due to limitations in health system capacity that are structural and systemic in nature. Based on the research findings and discussion, the primary challenges encountered do not lie solely in the technical aspects of service delivery, but rather in the weakness of comprehensive health system support in sustaining program implementation. These findings demonstrate that the success of the MCH program is strongly influenced by interactions among multiple health system components, including human resources, healthcare facilities, governance arrangements, financing mechanisms, and health information systems.

The results indicate that shortages of health personnel—particularly those with competencies in maternal and neonatal care—constitute a major barrier to effective MCH program implementation in remote areas. This condition contributes to high workloads among existing healthcare workers, limited service coverage, and declining quality and continuity of care for mothers and children. The discussion further highlights that these human resource constraints are closely linked to workforce distribution policies and insufficient system support for continuous training and professional mentoring. Accordingly, strengthening human resources for health emerges as a critical prerequisite for improving the effectiveness of the MCH program.

In addition, this study concludes that limitations in healthcare facilities in remote areas further weaken MCH program implementation. Health facilities that lack adequate infrastructure and medical equipment are unable to respond comprehensively to maternal and child health needs. As discussed in the findings, these conditions are associated with reduced community trust in available health services, which in turn leads to lower utilization of formal MCH services. This underscores that improving the quality and readiness of healthcare facilities is an integral component of health system strengthening efforts.

The conclusions also emphasize that governance and coordination remain significant weaknesses in MCH program implementation. Despite the existence of comprehensive national policies and guidelines, their realization at the remote-area level is not fully aligned with policy objectives. The findings and discussion reveal limited institutional capacity to translate policies into contextually appropriate operational practices. Weak coordination across government levels and among health programs results in MCH implementation that is largely administrative in nature and insufficiently responsive to local challenges.

With regard to the Health System Strengthening perspective, this study concludes that evaluating MCH program implementation through a system-strengthening framework is effective in revealing root causes that are often overlooked in evaluations focused solely on technical indicators. The findings confirm that weaknesses in a single health system component can generate wide-ranging effects on overall program performance. Therefore, improvements in MCH program implementation cannot be pursued through partial or isolated interventions, but require integrated and sustained actions across all health system components.

Overall, this study integrates its findings and discussion by emphasizing that the effectiveness of the Maternal and Child Health Program in remote areas is largely determined by the health system's capacity to provide adequate structural support. The implementation challenges identified reflect broader weaknesses in the health system's ability to address geographical barriers, resource constraints, and governance complexity in remote settings. In this context, strengthening the health system through a Health System Strengthening approach—conceptually advanced by Timothy Evans—emerges as a relevant and necessary strategy for enhancing MCH program performance.

These conclusions further affirm that efforts to improve maternal and child health outcomes in remote areas must be oriented toward comprehensive health system strengthening rather than limited technical service improvements. The empirical and conceptual evidence generated by this study indicates that the sustainability and effectiveness of the MCH program can only be achieved when all health system components are strengthened in a synergistic manner. By integrating research findings and discussion, this conclusion underscores the importance of a systemic approach as the primary foundation for improving the implementation of the Maternal and Child Health Program in remote areas.

RECOMMENDATIONS

Based on the conclusion that the effectiveness of Maternal and Child Health (MCH) program implementation in remote areas is strongly determined by overall health system capacity, the recommendations of this study are directed toward strengthening the health system through an integrated and sustainable Health System Strengthening approach. These recommendations are directly derived from the research findings and discussion and are intended to provide practical guidance for improving policy and implementation practices in structurally constrained settings.

Strengthening human resources for health constitutes the primary recommendation, given that the findings identify limitations in the number, distribution, and capacity of healthcare workers as major barriers to MCH program implementation. Policy efforts should prioritize workforce deployment strategies that are more responsive to regional needs, particularly in remote areas with difficult geographical access. In addition, continuous capacity-building initiatives—such as ongoing training, technical mentoring, and consistent supervision—should be implemented to ensure that the quality of maternal and neonatal services is maintained. This recommendation aligns with the study's conclusion that the quality of MCH services is highly dependent on systemic support for healthcare workers as the main program implementers.

Improving the quality and readiness of healthcare facilities is also a critical recommendation derived from the study's findings on inadequate infrastructure and medical equipment in remote areas. Facility improvements should extend beyond physical construction to include the availability of essential medical devices, routine maintenance, and assurance of service operational continuity. With better-equipped facilities, MCH services are expected to address maternal and child health needs more comprehensively and to enhance community trust in formal healthcare services, as emphasized in the research findings and discussion.

Further recommendations concern the strengthening of governance and coordination mechanisms within the MCH program. The study concludes that gaps between national policy design and local implementation are largely attributable to limited institutional capacity and weak coordination across levels of government. Accordingly, governance mechanisms should be reinforced through clearer delineation of roles and responsibilities, enhanced planning and supervisory capacity at the local level, and stronger cross-sectoral coordination. These measures are essential to ensure that MCH policies can be contextually adapted to local conditions rather than implemented merely as administrative obligations.

Optimizing monitoring and evaluation systems is also recommended as an integral component of health system strengthening. The findings demonstrate that available MCH data have not been fully utilized to inform decision-making and program improvement. Data-driven monitoring and evaluation

mechanisms are expected to enable earlier identification of implementation challenges and support continuous improvement of the MCH program.

From an academic and scientific development perspective, this study recommends further research combining qualitative and quantitative approaches to assess the impact of health system strengthening on maternal and child health outcomes more comprehensively. While the findings confirm the effectiveness of the Health System Strengthening approach in identifying structural challenges, quantitative measurement is needed to objectively assess changes in health outcomes. Future studies adopting mixed-method designs are expected to enrich the academic literature and support the formulation of evidence-based health policies.

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