

**Case Report**

# The MCH Handbook Piloting in Sierra Leone: A Case Report

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## Abstract

The Maternal and Child Health Handbook (MCHHB) is an integrated home-based record designed to strengthen continuity of care across the maternal, neonatal, and child health continuum. In Sierra Leone, where maternal, neonatal, infant, and under-five mortality rates remain among the highest globally (443/100,000; 31/1000; 72/1000; and 122/1000 live births, respectively – DHS 2019), the Ministry of Health and Sanitation (MoHS) with support from partners piloted the MCHHB from 2021 to 2022 in Moyamba, Pujehun, and Western Rural districts. This baseline survey aimed to assess clients' characteristics, health-seeking behaviours, and understanding of maternal and child health information before full implementation.

A mixed-methods design was employed, combining structured questionnaires and interviews across five intervention facilities and two control facilities, targeting 500 clients (470 respondents in intervention, 76 in control). Results revealed that 41% of clients had no education, 64% experienced their first pregnancy before 18 years, and 29% reported multiple abortions or stillbirths. Antenatal care knowledge and practice were significantly higher among target clients using the MCHHB compared to controls (81% vs. 68% knew next ANC date and purpose). Only 1% of target clients lacked understanding of MCH information versus 54% – 61% of control clients. Male involvement and discussion on pregnancy were also stronger among target clients (husbands/partners: 81% vs. 38%).

The findings suggest that the MCHHB enhances knowledge, improves communication between clients and health workers, and promotes a continuum of care. However, challenges including early pregnancies, high parity, socio-cultural barriers to family planning, and unstable incomes persist. The study recommends strengthening training and supervision of frontline workers, ensuring enabling environments for handbook use, engaging community health workers for follow-up, and introducing portable technologies such as ultrasound for improved maternal care.

## Introduction

The maternal and child health handbook is an integrated home-based record that covers all the stages of maternal and newborn and child health care services. It combines antenatal, postnatal, and child health records into one booklet, empowering families with health knowledge and improving continuity of care, including ANC, delivery, post-natal care, child immunization, growth monitoring, nutrition, and health education. The process started with a stakeholders meeting including WHO, UNICEF, Nutrition program, CH/EPI program, RH program, and later Social Welfare. The Maternal and Child Health (MCH) Handbook is a globally recognized tool that integrates health records and education for mothers and children, and Sierra Leone is set to officially launch its version in 2025. Studies show it enhances maternal engagement,

increases health service utilization, and improves outcomes in maternal and child health.

Originally, the MCH Handbook was first developed in Japan in the 1940s; it has since been adopted in over 156 countries. Asia: Widely used in countries like Indonesia, Cambodia, and Vietnam, often supported by JICA (Japan International Cooperation Agency).

African countries such as Kenya, Nigeria, Liberia, and Ghana have piloted or implemented versions of the handbook, adapting it to local health systems and literacy levels. Regional implementation often faces hurdles like low literacy, limited health infrastructure, and the need for culturally tailored content.

In Sierra Leone, the MCH handbook was developed

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in consultation with relevant stakeholders, taking into consideration all MCH issues, but specifically EPI and Child Health, including those under five and above. The book was pretested in Western Area Urban and piloted in three districts (Moyamba, Pujehun, and Western Area Rural) from 2021 to 2022, and the result was presented to the authorities of the Ministry of Health. The Ministry of Health agreed to use this book as the MCH handbook, which was piloted in 2022 pilot highlighted the need for more accessible health information for families, especially regarding emergency preparedness and risk awareness. The handbook's introduction in Sierra Leone marks a significant step toward achieving Sustainable Development Goals related to maternal and child health. Launch Timeline: The Ministry of Health plans to roll out the MCH Handbook in 2025, replacing the current Antenatal Care (ANC) card and Under-5 card.

## Background

Sierra Leone's maternal mortality rate was 717 per 100,000 live births in 2019, with neonatal and under-five mortality rates at 31 and 122 per 1,000 live births, respectively. The MCH Handbook is a standardized document tool to replace the Antenatal Card and under-five cards, which are being used for the recording of vital information on mother and child health care services.

## Justification

Sierra Leone is one of the countries with a high maternal, neonatal, infant, and child mortality.

(443/100,000 LB, 31/1000 LB, 72/1000 LB, and 122/1000LB respectively, as the recent figures from the Demographic Health Survey (DHS) 2019. The Ministry of Health and its partners have implemented many strategies to reduce these indices.

The MCH Handbook is an evidence-based strategy for the effective continuum of care for mother and child health services. This book is being used in more than 156 countries, including Ghana and South Africa. In this view, the ministry deemed it fit to introduce the MCH Handbook into the health care delivery service as a means of holistic reduction in the mortality rates among our mothers and children. The directorate is requesting the EPI program to support the training of the health care workers in the two districts for which they have printed.

**Goal:** To improve maternal and child health outcomes.

### Objectives:

1. Strengthen the link between maternal and child health services from pregnancy through age five.
2. To improve access and availability of individual MCH information, which allows health workers to understand patient health status and histories.

3. To share information for referrals and counter referrals.
4. Improve parental knowledge through health education.
5. Promote self-learning and self-monitoring.
6. To advocate for male involvement in the maternal and child growth period.

## Literature review

The MCH Handbook originated in Japan in 1948 and has since been adopted in over 40 countries. It integrates maternal and child health records, promoting continuity of care and empowering families with health knowledge. Studies show increased antenatal care attendance, improved immunization rates, and better recognition of danger signs among mothers using the handbook [1]. The Maternal and Child Health (MCH) Handbook has demonstrated measurable improvements in maternal and child health outcomes globally, with systematic reviews confirming its effectiveness in promoting health behaviours, continuity of care, and empowerment. A 2023 systematic review and meta-analysis by Nishimura, et al. [1] examined the impact of the MCH Handbook across multiple countries. The study found that Antenatal care attendance increased significantly among mothers who used the handbook. Immunization rates improved, particularly for measles and DPT vaccines. Mothers were more likely to recognize danger signs during pregnancy and infancy, leading to earlier health-seeking behaviour. Wignarajah, et al. [2] conducted a literature review focusing on behavioural changes. It was found that the handbook empowered mothers with knowledge about nutrition, hygiene, and early childhood development. It also fostered shared responsibility between pregnant women, caregivers, and health workers. In low-resource settings, the illustrated versions were particularly effective.

A study done by Carandang, et al. [3] explored the handbook's influence beyond health rims. The Mothers for instance, reported higher confidence in managing their children's health. The handbook contributed to self-efficacy among women and family members, especially in rural communities, and it supported and promoted gender equity in Maternal and child health care by involving fathers in pregnancy and child health tracking. It is effective in improving health outcomes.

In a recent study by Bhuiyan, et al. [4] and Musa, et al. [5], they highlighted barriers to adoption of the handbook as follows:

- Literacy, cultural, and language diversity hindered the usage of the handbook in some regions.
- Health system integration was inconsistent, especially in low-resource settings.
- Supply chain and printing costs posed logistical challenges and sustainability issues.



A study conducted by JICA [6] stated that some countries are piloting digital versions to improve data tracking and accessibility. However, in the majority of these countries, there are infrastructural limitations that pose challenges for implementation.

The MCH Handbook aligns with SDG 3 (Good Health and Well-being) and SDG 5 (Gender Equality). The digital versions are being piloted in countries like Japan and Kenya, though access and infrastructure remain limiting factors in developing countries. The European Journal of Environment and Public Health [7] examined the influence of the MCH Handbook on health behaviours globally. While most studies were from Asia, they highlighted the potential for adaptation in African contexts, including West Africa. In Indonesia, the handbook was linked to improved maternal knowledge and child health practices. In a study by Wignarajah S, et al. [8], the handbook was proven to serve as a health education tool, especially in low-literacy settings when adapted with visual aids. Mothers reported feeling more confident in managing their children's health and growth. A study conducted by Dr. Shafi Bhuiyan [4] analysed the impact of MCH Handbooks on maternal and child health care in developing countries. It found positive effects on antenatal care attendance, immunization rates, and health education, suggesting relevance for West African settings.

There is limited but growing literature on the Maternal and Child Health (MCH) Handbook implementation in West Africa, focusing on its rollout, effectiveness, and potential for improving health outcomes.

Although direct studies from West Africa are sparse, the region has shown interest in home-based health records, and many countries are conducting pilot programs. Countries like Ghana and Nigeria have explored or piloted MCH Handbook-style interventions, often supported by international JICA, NGOs, or WHO. Challenges like Literacy barriers and language diversity. Integration with existing health systems and the need for community health workers training. In the midst of these challenges, there are opportunities for each of these countries to strengthen maternal-child health tracking, enhance communication between families and health providers, and support continuity of care across rural and urban settings. The pilot in Ghana highlighted improvement in continuity of care and communication between mothers and health workers [9]. A study conducted in Nigeria also identified literacy and language barriers as significant bottlenecks but noted strong community health worker engagement as a solution [10-13].

A study by Bhuiyan, S. et al. [14] highlighted the Impact of the Maternal and Child Health Handbook on maternal and child health care: A systematic review and meta-analysis demonstrated improved antenatal care attendance, immunization rates, and health.

It provides guidelines applicable to West African countries, considering MCH.

Sierra Leone has also benefited from the piloting of the MCH Handbook in 2019, supported by JICA. The handbook's introduction in Sierra Leone marks a significant step toward achieving Sustainable Development Goals related to maternal and child health. Sierra Leone is set to officially launch its Maternal and Child Health (MCH) Handbook in 2025, marking a significant shift in how maternal and child health data is recorded and managed. This initiative aims to unify existing fragmented health records and improve the continuum of care from pregnancy, labour, delivery, and through early childhood [15,16].

## Conclusion

The pilot of the Maternal and Child Health Handbook (MCHHB) in Sierra Leone marks an important shift toward a more integrated, family-centered healthcare model. The baseline findings show that the MCHHB greatly improves maternal knowledge, especially about antenatal care schedules and recognizing health risks. The tool also promotes male involvement, which is a key factor in improving maternal health outcomes in the region. However, the pilot also reveals ongoing challenges, such as low literacy rates and socio-economic barriers that might limit the handbook's effectiveness. To ensure a successful rollout in 2025, the Ministry of Health should focus on training frontline workers and use visual aids for low-literacy populations. Ultimately, while the MCHHB is a strong driver for continuous care, its long-term impact will rely on ongoing institutional support and development of infrastructure.

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