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# The Maternal and Child Health Handbook: A Pilot Study in Sierra Leone

**Abstract**

*The Maternal and Child Health Handbook (MCHHB) is a home-based record designed to improve continuity of care across maternal, neonatal, and child health services. In Sierra Leone—where maternal, neonatal, infant, and under-five mortality remain high (443/100,000; 31/1000; 72/1000; 122/1000 – DHS 2019)—the Ministry of Health and Sanitation piloted the MCHHB from 2021–2022 in Moyamba, Pujehun, and Western Rural Districts. This baseline survey assessed client characteristics, health-seeking behaviour, and understanding of MCH information before full rollout.*

*A mixed-methods approach used questionnaires and interviews in five intervention and two control facilities, targeting 500 clients (470 intervention; 76 control). Findings showed 41% were illiterate, 64% had their first pregnancy before 18 years, and 29% had multiple abortions or stillbirths. ANC knowledge and practices were higher among MCHHB users than controls (81% vs. 68% knew their next ANC date and purpose). Only 1% of intervention clients lacked understanding of MCH information compared with 54%–61% of controls. Male involvement was also greater (husbands/partners: 81% vs. 38%).*

*Overall, the MCHHB improved client knowledge, communication with health workers, and continuity of care, though challenges such as early pregnancy, high parity, socio-cultural barriers to family planning, and unstable incomes persist. The study recommends stronger training and supervision of frontline workers, supportive environments for handbook use, community health worker follow-up, and portable technologies such as ultrasound to enhance maternal care.*

**Keywords:** *Child Health, Continuum of Care, Home-based Record, Maternal Health, Pilot Study, Sierra Leone*

## 27 Introduction

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

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

41 In 2018, the World Health Organization (WHO) published guidelines recommending home-based  
42 records for maternal, newborn and child health. During the guideline and indicators development  
43 process, it was proven that implementation challenges persist in many countries especially in Africa.  
44 In addition, based on monitoring of home-based record indicators through the WHO/UNICEF joint  
45 reporting form, country surveys, such as Demographic and Health Surveys (DHS) and Multiple  
46 Indicator Cluster Surveys (MICS), as well as country assessments, such as Missed Opportunities for  
47 Vaccination (MOV), face issues related to ensuring sustainability of home-based records for their  
48 communities. Implementation studies on the maternal and child health (MCH) handbooks have shown  
49 that the success of home-based records within a country depends on the quality of their  
50 implementation and this led to the development of the guide “Strengthening implementation of home-  
51 based records” for maternal, and child health a guide for all implementers in 2023. In 2018, the World  
52 Health Organization (WHO) published guidelines with recommendations on home-based records for  
53 maternal, newborn and child health. During the guideline development process, it was found that  
54 implementation challenges persist in many countries. In addition, based on monitoring of home-based  
55 record indicators through the WHO/UNICEF joint reporting form (JRF), country surveys, such as  
56 Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS), as well as  
57 country assessments, such as Missed Opportunities for Vaccination (MOV), many countries face  
58 issues related to ensuring availability of home-based records for their communities. Implementation  
59 studies on the maternal and child health (MCH) handbooks, an integrated home-based record for  
60 maternal, newborn and child health, have shown that the success of home-based records within a  
61 country depends on the quality of their implementation. Together, these led to the development of the  
62 guide “Strengthening implementation of home-based records for maternal, newborn and child health:  
63 a guide for country Programme managers” jointly by the WHO, United Nations Children’s Fund  
64 (UNICEF) and Japan International Cooperation Agency (JICA) in 2023. Since its launch, Programme  
65 managers from at least 22 countries across the world (e.g. AFRO, EURO, SEARO, WPRO) have been  
66 made aware of the guide and have had practical discussions on strengthening the implementation of  
67 home-based records in their countries.

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

72 In Sierra Leone, The MCH handbook was developed in consultation with relevant stakeholders taking  
73 into consideration all MCH issues but specifically ANC, EPI and Child Health including under-fives

74 and above. The book was pretested in Western Area Urban and piloted in three districts (Moyamba,  
75 Pujehun and Western Area Rural) from 2021 to 2022 and the result was presented to the authorities of  
76 the Ministry of Health. The Ministry of Health then agreed to use this book as the MCH handbook for  
77 mother and child services as the pilot highlighted the usefulness of the handbook for a more  
78 accessible health information for families, especially regarding emergency preparedness and risk  
79 awareness. The handbook's introduction in Sierra Leone marks a significant step toward for achieving  
80 Sustainable Development Goals related to maternal and child health. The Ministry of Health plans to  
81 roll out the MCH Handbook in **2025**, replacing the current Antenatal Care (ANC) card and Under-5  
82 card.

83 Sierra Leone's maternal mortality rate was **717 per 100,000 live births** in 2019, with neonatal and  
84 under-five mortality rates at **31 and 122 per 1,000 live births**, respectively. The MCH Handbook is a  
85 standardized document tool to replace the Antenatal Card and under five cards which is being used for  
86 the recording of vital information on mother and child health care services. It is an evidence- based  
87 strategy for the effective continuum of care for mother and child health services. This book is being  
88 used in more than 156 countries including Ghana, Nigeria, and South Africa. In this view, the ministry  
89 deemed it fit to introduce the MCH Handbook into the health care delivery service as a means of  
90 holistic reduction in the mortality rates among our mothers, neonates and children. The first step was  
91 to develop a Sierra Leone Home Based Book which involved several activities as follows:

- 92 • Development of the draft MCH HB
- 93 • Pretest of the draft MCH HB
- 94 • Plan for the Pilot test
- 95 • Development of Conceptual framework of the MCH HB
- 96 • Technical team visited Ghana for technical exchange
- 97 • Pilot test for 15 months: Pujehun District (3 PHUs), Moyamba District (1 PHU), Western  
98 Rural (1PHU)
- 99 • Conducted periodical stakeholder meeting and regular monthly visits
- 100 • Review Pilot test results
- 101 • Revision of the MCH HB based upon the Pilot Test results
- 102 • Printing of the MCH HB
- 103 • Launching of the National version of the MCH HB by the Minister of Health in 2023
- 104 • Seeking fund for the printing of the MCH HB for national distribution

## 105 **Objectives of the Pilot Study**

106 The MCH Handbook pilot study focused on Six core objectives:

- 107 1. Strengthen the link between maternal and child health services from pregnancy through age  
108 five.
- 109 2. To improve access and availability of individual MCH information which allows health  
110 workers to understand patient health status and histories.
- 111 3. To share information for referrals and counter referrals.
- 112 4. Improve parental knowledge through health education.
- 113 5. Promote self-learning and self-monitoring.
- 114 6. To advocate for male involvement in maternal and child growing period

## 115 **Methods**

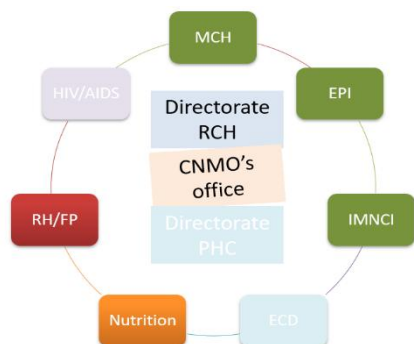
### 116 **Study Design**

117 The pilot utilized a quasi-experimental design with target and control facilities, allowing for  
118 comparison between health facilities implementing the MCH Handbook and those utilizing standard  
119 tools.

## 120 Implementation Structure

121 Coordination was established through:

- 122 • Directorate of Reproductive and Child Health (RCH)
- 123 • Chief Nursing and Midwifery Officer's Office (CNMO)
- 124 • Directorate of Primary Health Care (PHC)



125

126 [Figure 1: Flowchart of Pilot Implementation Structure]

## 127 Distribution Criteria

128 Eligible clients were:

- 129 • Pregnant women on their **first ANC visit**
- 130 • Able and willing to complete the **continuum of care**
- 131 • Capable of engaging family participation
- 132 • Permanent residents within facility catchment areas

Target & Control Facilities		
	Name of PHU	Distribution No.
Target Facilities	Potoru CHC	120 booklets
	Moyamba Junction CHC	80 booklets
	Waiima MCHP	40 booklets
	Vaama Barri MCHP	40 booklets
	Waterloo CHC	220 booklets
Control Facilities	Gbundapi CHC	50 samples
	Gandorhun CHC	30 samples

133

134 Table 1: MCH Handbook Eligibility Criteria

## 135 Project Activities

136 Key activities included:

- 137 • Development and pre-testing of the Sierra Leone version of the MCH Handbook
- 138 • Selection of pilot facilities
- 139 • Training of health workers
- 140 • Baseline and end-line studies
- 141 • Monthly supervision and quarterly monitoring

- Review workshops for maternal and child phases

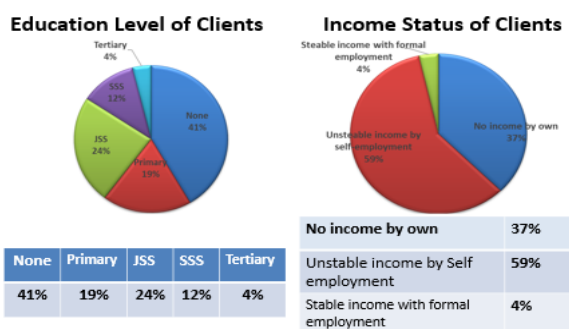
## Findings

### Characteristics of Clients

The demographic and reproductive characteristics indicated:

- High teenage pregnancy rates: **64% had their first pregnancy under 18 years**
- Low income and limited formal education
- High parity among many clients

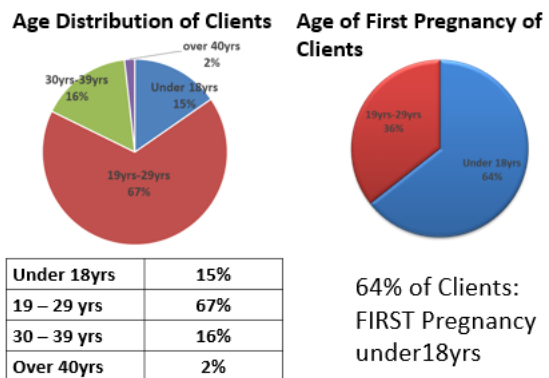
#### Characteristics of Clients 1



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152 *[Fig2: Socio-demographic Characteristics of Participants]*

#### Characteristics of Clients 2

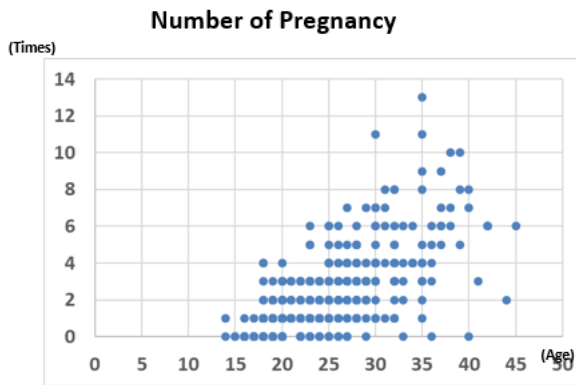


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154 *[Figure 3: Age Distribution of Clients]*

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### Characteristics of Clients 3



156

157 [Fig 4: Reproductive History of Clients]

### Characteristics of Clients 4

Number of Pregnancy in Past	n=494	Average Interval of Pregnancy	N=339
None (Primipara)	22%	Less than 1 year	1%
1-3 times	57%	1-2 years	17%
4-6 times	16%	2-4 years	48%
7 times above	4%	More than 4years	34%

Abortion/Still Birth Experience (Multiple Abortion/Still birth)	62% (29%)
Lost Child Experience	18%
Experienced both above	2%

158

159 [Table 2: Number of Pregnancies per Client]

160 These characteristics reflect the complex socio-economic realities that directly influence maternal and  
 161 child health outcomes.

162

### 163 Case Stories Highlighting Key Concerns

164 The pilot study identified several critical stories illustrating systemic gaps and social determinants of  
 165 health.

#### 166 Case 1: Hawa – High Parity and Lack of Family Planning Support

167 Hawa, 30 years old, had her 12<sup>th</sup> pregnancy, with only six surviving children. Her husband refused  
 168 family planning due to religious misconceptions. The family habitually gave away children to  
 169 relatives in , perpetuating high-risk fertility patterns.

#### 170 Implication:

171 Cultural and religious barriers significantly impede uptake of family planning services.

#### 172 Case 2: Fatmata – Limited Risk Awareness

173 Fatmata, 24, experienced repeated pregnancies driven by partner expectations. She underwent an  
 174 unsafe abortion at 18 weeks and returned with another pregnancy at 12 weeks shortly afterward.

175 **Implication:**

176 Lack of knowledge of health risks and limited reproductive autonomy contribute to unsafe maternal  
177 health outcomes.

178 **Case 3: Baby Mohamed – Breastfeeding Challenges**

179 Baby Mohamed’s mother had a medical condition preventing breast milk production. Her two  
180 previous babies died from severe malnutrition due to lack of access to infant formula. The pilot team  
181 provided powdered milk from personal funds, enabling Baby Mohamed to survive and thrive.

182 **Implication:**

183 There is a **critical absence of systematic support** for infants of mothers with lactation-limiting  
184 medical conditions.

185 **Case 4: Waterloo CHC – Systemic Implementation Challenges**

186 The Waterloo CHC lost its status as a target facility due to inconsistent record keeping, lack of  
187 training cascade, and poor client follow-up. High client volumes and fragmented ANC service flow  
188 reduced opportunities for proper MCH Handbook use.

189 **Implication:**

190 Urban high-volume facilities require **different implementation strategies** compared to rural settings.

191 **Discussion**

192 The pilot demonstrated that the MCH Handbook has strong potential to:

- 193
- Enhance maternal knowledge
  - Improve continuity of care
  - Strengthen family involvement
- 195

196 However, barriers such as staff training gaps, socio-cultural factors, inadequate resource allocation,  
197 and high facility workload hinder optimal utilization. High-risk cases highlight the need for  
198 complementary interventions such as structured nutritional support, improved family planning  
199 acceptance strategies, and targeted urban facility approaches.

200 **Recommendations**

- 201
1. Scale nationwide implementation with emphasis on consistent trainings, supervision and  
202 Monitoring.
  2. Develop strategies for urban settings, where workload and system flow differ greatly from  
203 rural settings.
  - 204
  - 205 3. Introduce support schemes for non-lactating mothers, ensuring no newborn is left behind.
  - 206 4. Strengthen family planning engagement, particularly addressing religious and cultural  
207 misconceptions.
  - 208 5. Enhance community engagement to promote continuity of care and behaviour change.
  - 209 6. Integrate digital monitoring tools to improve record completeness and data accuracy.
  - 210 7. Revise Facility Register form to align with new ANC/PNC protocol
  - 211 8. Each programme (especially many clients said “Problem to understand”) to review Health  
212 Education illustrations in MCH HB

- 213 9. Establish implementation structure and modification rules for MCH Handbooks  
214 10. Secure Copy Right for MCH HB to avoid any malpractice  
215 11. Provide plastic pouches to clients for safekeeping of MCH Handbook

216

## 217 **Conclusion**

218 The Maternal and Child Health Handbook is a promising tool for improving maternal and child health  
219 outcomes in Sierra Leone. The pilot project demonstrates its potential impact while underscoring the  
220 need for strategic, context-specific implementation. Ensuring systematic support, family involvement,  
221 and strong health facility engagement will be critical as the country moves towards nationwide  
222 rollout. No pregnant woman should be left behind.

## 223 **Acknowledgments**

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