

mMIST Project in the Northwest Region of Cameroon



The mobile Medical Information Service via Telephone (mMIST) project is a provider-to-provider mobile phone consultation line to improve pregnancy and perinatal outcomes in the Northwest Region of Cameroon.

mMIST Accomplishments

Aim 1:

Adapted and developed a 24/7 mHealth support system by conducting in-depth interviews (n=46) and 3 focus groups (n=18) with: current and previously pregnant women, maternity care providers, mobile service providers, Ministry of Health workers, and mobile service provider representatives.

Aim 2:

Pilot tested mMIST's feasibility and acceptability in Ndob health district. The mMIST system was established with the help of experts in Cameroon and providers* were trained including: 16 first line providers, 13 expert providers, and over 34 peripheral providers.

Aim 3:

Implemented mMIST across 16 health districts in Cameroon and evaluated mMIST in reducing maternal and perinatal deaths. Health districts were enrolled in 4 groups of 4 every 4 months (see rollout map below). Peripheral providers were trained from all health districts.

Dissemination*:

- Protocol Manuscript
- Qualitative Manuscript: Structural Barriers
- 2023 Society of Behavioral Medicine abstract and podium presentation
- 2024 International Nursing Research Congress abstract and podium presentation

R33 Rollout

Health districts were enrolled in 4 groups of 4 every six months and continued their engagement in the mMIST project from their time of enrollment (included in Table 1) until March 2025.

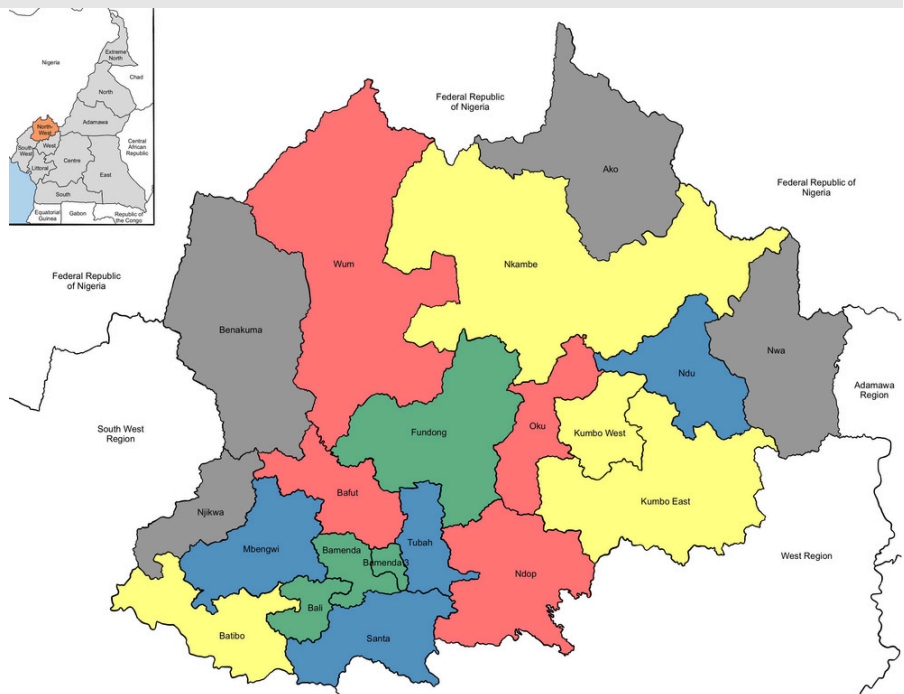
Table 1. Sites Randomized to Each Step

Step	Sites			
1: Mar 2024	**Ndob	Oku	Wum	Bafut
2: Sept 2024	Kumbo East	Kumbo West	Batibo	Nkambe
3: Mar 2025	Fundong	Bali	Bamenda	Bamenda 3
4: Sept 2025	Mbengwi	Ndu	Santa	Tubah

**Ndob was enrolled during Aim 2 for the pilot phase.

Challenges:

- Network connection
- Phone credit/airtime
- Transportation
- Ongoing civil conflict



*Published Manuscripts

1. Protocol for Translational Adaptation: <https://doi.org/10.2147/IJWH.S353919>
2. Qualitative Structural Barriers to Maternity Care: <https://doi.org/10.1186/s12978-024-01834-w>

Highlights



1,148+ Providers Trained

First line, expert, and peripheral providers were directly trained by the mMIST team or according to the train-the-trainer model.



566 Total Calls

From March 2022 (start of the Aim 2 pilot) to October 2024. Final call totals will be available in March 2025.



183 Expert Consultations

First line providers used evaluation forms to collect data on each call into the mMIST system. 183 calls involved advice from an OB/GYN or neonatologist/pediatrician.

mMIST System and Call Flow

Top Reasons for Calls

Mothers (81%)

- Abnormal labor (13%)
- Hemorrhage (9%)
- Hypertensive disorder in pregnancy (7%)
- PROM (6%)
- Preterm labor (6%)
- Infection (5%)
- Prior cesarean (4%)
- Fetal malpresentation (3%)

Baby (19%)

- Prematurity (14%)
- Asphyxia (13%)
- Infection (12%)
- Jaundice (4%)
- Multiples (3%)
- Low birth weight (3%)

Note: These are the top specific common reasons for calls. Other conditions and multiple reasons for calls could be selected.

Step 1: Peripheral providers use mobile phones to call into the mMIST line using current MTN, Orange, and Nextel numbers.

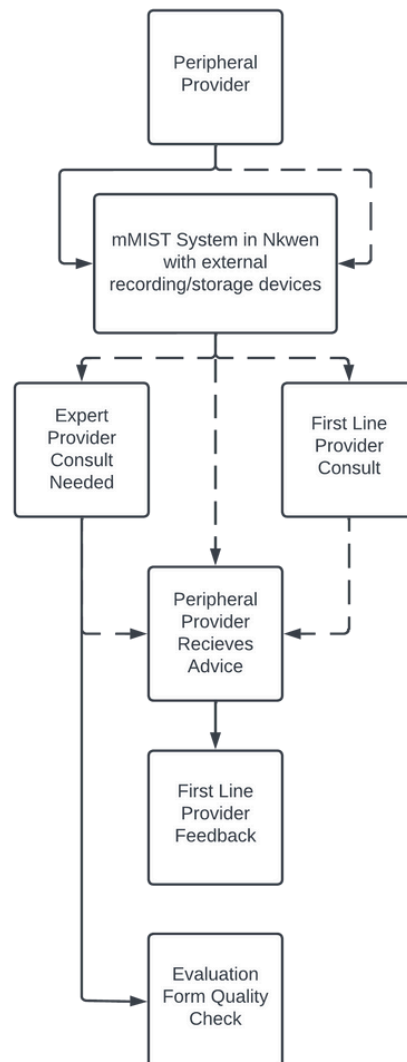
Step 2: First line responders based in Nkwen Baptist Hospital answer the mMIST calls. If they cannot answer when the call comes in, they will call the peripheral provider back.

Step 3: If first line responders would like additional input from maternal or neonatal doctors, they can add them to the call to speak directly with the peripheral provider.

Step 4: Whether an expert provider is needed or not, the peripheral provider will receive advice on how to resolve their case.

Step 5: First line providers call peripheral providers back to get the patient's outcome. The first line provider completes the call evaluation form.

Step 6: Expert providers fill out the quality check form in REDCap.



Note: Only one peripheral provider can call in at a time. If the line is busy, the second peripheral provider's will be called back as soon as possible.

Note: First line responders are midwives based in the maternity ward. All midwives are ALSO trained and trained in the mMIST system.

Note: One OB/GYN and one neonatologist/pediatrician will be available at all times.

Note: If the advice is to transfer the patient, mMIST does not pay for these services but will help with coordination.

Note: Time between the initial call and follow up will vary based on the nature of the case.

Note: Please see the associated protocol for more details on this step.



Project Number: 4R33HD103061-03

UAB IRB Number: IRB-300006254

CBCHS IRB Number: IRB2020-49

*Provider Definitions:

Peripheral providers: Providers in remote areas calling into the mMIST system

First line providers: maternity midwives and nurses in Nkwen Baptist Hospital answering the calls

Expert providers: OBGYNs and pediatricians on call for additional consultation, as need