



A Mobile Data Collection Tool Using Android Tablets for In-Home Observations in Sierra Leone Improves Data Quality

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BACKGROUND & OBJECTIVE

The **Food Aid Quality Review project of Tufts University** aims to answer important questions that will improve nutrition among vulnerable people receiving food aid (<https://www.foodaidquality.org>).

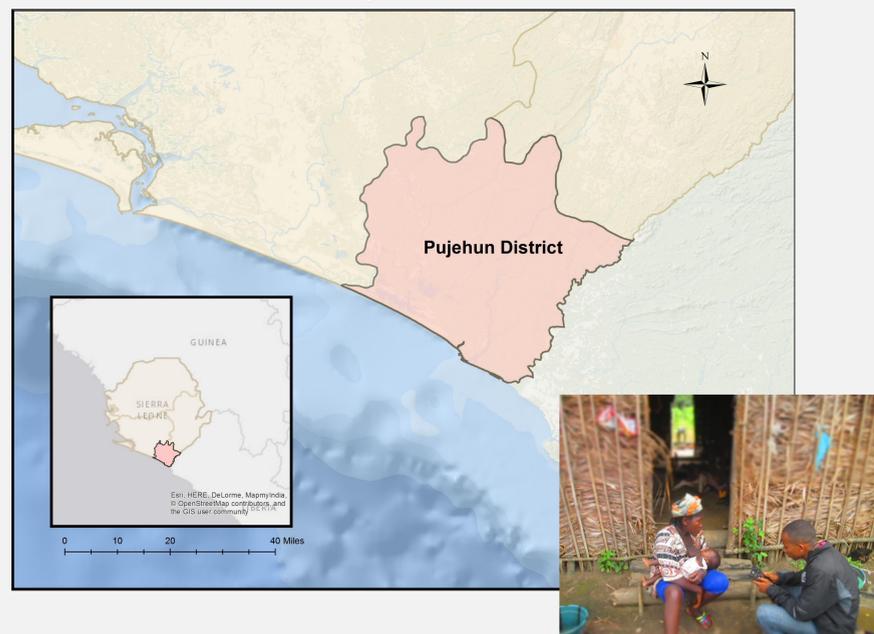
In an ongoing trial assessing the **effectiveness and cost-effectiveness of 4 specialized foods used for treatment of moderate-acute-malnutrition (MAM)**, In-Home Observations (IHOs) are being conducted to help understand behaviors surrounding use of supplementary food rations in the household. Paper-based methods used in prior studies were prone to data quality issues. We describe a tablet-based IHO data collection tool developed by the Food Aid Quality Review Project.



STUDY SETTING & METHODS

- ❖ Pujehun District, Southern Region, Sierra Leone
- ❖ Cluster-Randomized Clinical Effectiveness trial comparing 4 foods used for treatment of MAM: CSB+, CSWB, SC+ w/A, RUSF
- ❖ Target of 5,344 children, age 6-59 months with MAM (mid-upper arm circumference 11.5 < MUAC < 12.5cm), **sub-samples of caregivers randomly selected for IHOs** (target sample size of ~400)
- ❖ IHOs are conducted over 5 consecutive days on participating households using a newly developed mobile data collection tool
 - ✓ Created using Open Data Kit and Enketo Webforms
 - ✓ Records information about ration porridge preparation, consumption of the ration & other foods, breastfeeding, giving away or selling the ration, household visitors, other uses of the ration
 - ✓ Records activity durations using timestamps
 - ✓ Captures durations of multiple activities occurring at the same time through a repeat function
 - ✓ Allows questions about each corresponding activity by selecting a separate button
 - ✓ Stores data in a web browser to allow for offline data collection (data are uploaded to the server at the end of the observation when internet is available)

Four Foods Study Site in Sierra Leone



Snapshot of the In-Home Observation Mobile Data Collection Tool

Select when observed, if multiple things are happening at once then use the repeat function

1 WHAT IS HAPPENING? [SELECT ONE. IF MULTIPLE THINGS ARE HAPPENING AT ONCE, USE THE REPEAT FUNCTION.] <input type="radio"/> The CSWB is being prepared into a pap <input type="radio"/> The CSWB is being consumed (by anyone, in any form) <input type="radio"/> Beneficiary child is eating other foods (not with the study food) <input checked="" type="radio"/> Beneficiary child is being breastfed <input type="radio"/> Sharing with other households (giving away or selling the study food) <input type="radio"/> Someone is visiting the household <input type="radio"/> Fortified oil is being used for something other than the pap preparation (CSB+ AND CSWB ARMS ONLY) <input type="radio"/> Other	START TIME <input checked="" type="radio"/> [SELECT TO RECORD START TIME]	END TIME <input checked="" type="radio"/> [SELECT TO RECORD END TIME]
START TIME: [CHECK TO MAKE SURE THE START TIME IS CORRECT. CHANGE IF NEEDED.] 2018-05-25T15:19:12.201-04:00	END TIME: [CHECK TO MAKE SURE THE END TIME IS CORRECT. CHANGE IF NEEDED.] 2018-05-25T15:19:22.143-04:00	
QUESTIONS <input checked="" type="radio"/> [SELECT TO COMPLETE QUESTIONS]		

Questions about the selected activity appear

QUESTIONS <input checked="" type="radio"/> [SELECT TO COMPLETE QUESTIONS]
1. QUESTIONS ABOUT BREASTFEEDING PLEASE INDICATE IF THIS IS HAPPENING AT THE HOUSEHOLD OR AWAY FROM THE HOUSEHOLD none selected

FINDINGS

- ❖ The tool has been used in 188 participating households thus far
- Benefits**
- ❖ Easier collection of activity durations, allowing for a larger sample size
- ❖ Reduced error through a simplified form with built-in logic
- ❖ Improved data management by avoiding cumbersome double data entry
- ❖ A raw dataset requiring fewer manipulations
- ❖ User friendly – Research Assistants report liking the tool
- ❖ Immediate access to data allows the team to troubleshoot more effectively and manage issues during data collection for better quality control

Challenges & Lessons Learned

- ❖ Device malfunction and freezing of tablets requires replacements in the field and makes linking of cover sheet and activity data more difficult
- ❖ Detailed notes must be hand-written
- ❖ Unique device ID is recorded differently in Enketo Webforms and KoboCollect App, requiring a separate linking form to be completed manually



CONCLUSIONS

Use of a tablet-based offline platform for IHOs facilitated data collection and improved data quality. The tablets had a number of benefits over paper forms used in our prior studies. With experience, further improvements are possible.

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