Costing Methods for a Cluster-Randomized Cost-Effectiveness Trial
Comparing the Performance of Four Supplementary Foods
in Treating Sierra Leonean Children with Moderate Acute Malnutrition (MAM)

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Background & Objective
- Policy makers need cost-effectiveness measures to support better decision-making in nutrition policy and programming. Therefore, proper planning and implementation of cost data collection and cost-effectiveness analysis is needed.
- As part of the Food Aid Quality Review (FAQR) Project at Tufts Friedman School of Nutrition Science and Policy, a comprehensive cost-effectiveness research protocol was designed for a cluster-randomized field trial in Pujehun District, Sierra Leone. The study objective is to evaluate and compare the cost-effectiveness of four isocaloric supplementary foods in treating MAM.
- The objective of this communication is to share the results of the cost data collection and cost-effectiveness analysis undertaken alongside field-based nutrition trials.

Study Design

- Pujehun District, Sierra Leone
- Children 6-59mo diagnosed with MAM
- Bi-weekly Food Ration & Anthropometric measurements until recovery or reaching 12 wks
- Additional data collection (such as in-depth interviews, in-home observations, focus group) takes place at household, community, clinic and other levels.

Components of Program Cost

- Food
- Oil Repackaging
- Start-up
- Fixed/Overhead
- Transportation
- Storage
- Distribution @Clinic
- Other Programmatic: Clinical and SBCC
- Beneficiary Participation
- Program Costs
- Costs actually incurred as part of this trial (excluding research costs)
- Adjusted Program Costs
- Costs adjusted for what an NGO seeking to replicate the supplementary feeding program using one food would do in the same setting
- Policy Experiments
- Costs associated with moving from site-specific programs to broader implementation contexts

Activity-Based-Costing-Ingredients(ABC-I) approach
- In-depth Interview
- Accounting records
- Direct observation with time-use tracking

Three Lenses to Evaluate Cost

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- Adjusted Program Costs
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Effectiveness Outcomes

- Primary outcome: Recovered, or not (0/1), from MAM defined as MUAC ≥ 12.5 cm within the 12-week treatment period
- One example of the secondary outcomes: Recovered, or not(0/1), from MAM defined as MUAC ≥ 12.5 cm sustained at 1 month follow-up

Summary Measures of Cost

- Total cost per study arm for the entire duration of the study
- Cost per child treated per study arm
- Total cost per study arm per year

Linking Cost with Effectiveness

- Incremental Cost-Effectiveness Ratio (ICER) across all four arms: the study arm with the worst effectiveness outcome (Reference Arm) compared to each of the remaining three arms
  a) Primary Cost-Effectiveness Measure
  ICER calculation for One Arm compared to Reference Arm:
  Cost per Case of MAM Recovered

- Cost-Effectiveness Measures for selected secondary effectiveness outcomes e.g. Cost per Sustained Case of MAM Recovered (1 month follow up)
- Cost per Disability-Adjusted-Life-Year (DALY) Averted
- Sensitivity Analyses to Calculate Ranges of Cost-Effectiveness Estimates
  - Parameters with the greatest impact to cost
  - Parameters that change with three lenses
  - Parameters with substantial scientific uncertainty

Conclusions

- Proper design of cost data collection and cost-effectiveness analyses for nutrition research studies requires careful considerations of all components of program and beneficiary costs, and the specific effectiveness outcomes to be used
- Additional details available in the FAQR Technical Assistance Manual costs and effectiveness measures: a manual for food aid projects

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For more about the Food Aid Quality Review (FAQR) Project, visit www.foodaidquality.org