Food Aid Quality Review Phase III

Washington, DC
June 20 & 21, 2016
**FAQR Objectives**

- Helping USAID/FFP ensure that food aid products are evidence-based to achieve best outcomes (*fit for purpose*)

- Focus on **cost-effectiveness** of outcome, not just cost of the products

- **Efficiency gains** across USG and global food aid players
Food Aid Quality Review - Overview

- **FAQR Phase I: Title II food aid ‘fit for purpose?’**
  - * Delivering Improved Nutrition: Recommendations for Changes to U.S. Food Aid*
  - Scientific consultations
  - Identifying differences across specs.

- **FAQR Phase II: Implement recommendations**
  - October 2011 – January 2016
  - Multiple field studies
  - Stakeholder consultations

- **FAQR Phase III: Implement recommendations**
  - February 2016 – January 2019
Summary of FAQR II Accomplishments - Products

• New specifications adopted for 21 food aid products

  – 8 products have new specifications after micronutrient level upgrades (All-Purpose Wheat Flour, Bread Flour, Bulgur, Soy Fortified Bulgur, Cornmeal, CSB+, Soy Fortified Cornmeal, Veg Oil)

  – 8 products added to Title II list (Dried Dairy Ingredients (WPC34 and WPC80), HEBs, RUTF, Super Cereal+)

  – Milled Rice specs updated (part of Fortified Rice work)

  – 4 products in development, draft specs written in FAQR II (Rice Soy Blend+/Supercereal Rice, Supercereal +, Rice, Wheat Soy+/Supercereal (Wheat)/Supercereal Plus (Wheat)).
Summary of FAQR II - Products

- **New sorghum-pea blend** and lipid-based products formulated and being field tested; other options?

- **Ready-to-Use Foods (RUFs)** now included in basket.

- **Dry dairy ingredients** (WPC34 and WPC80) also included.

- The **Commodity Reference Guide is being updated quarterly**. New product fact sheets written on a rolling basis.
Summary of FAQR II Accomplishments - Products

• Accelerated Shelf-Life Study: Products Tested

2 CSWB and 1 CSB+: 8 25-kg bags

SC+: 16 1.5-kg bags

RUSF: 24 92-g sachets

Veg Oil: 8 4-L steel cans
Summary of **FAQR II** Accomplishments - **Products**

- Accelerated Shelf-Life Study: Results

![Graph showing vitamin A levels over time for CSWB (Supplier A) and CSWB (Supplier B).](image)
Summary of **FAQR II Accomplishments** - **Products**

- Accelerated Shelf-Life Study: Results
Summary of **FAQR II Accomplishments** - **Products**

- Accelerated Shelf-Life Study: Results
Summary of **FAQR II Accomplishments - Products**

- Accelerated shelf life/stability testing should be conducted on all new & significantly changed products
  - Cost to be built into the cost of bringing products on line
- No new nutrient levels until studies are complete
- Vit A suppliers should develop methods to improve A stability
- Further research needed to determine optimal food delivery vehicles for vitamin A
- New packaging to be assessed to reduce vitamin degradation
Implications for FFP

• Degradation is less in RUFs
  – Optimization of formulation
  – Additional shelf-life studies (i.e. HEBs, fortified rice, protein ingredients)

• Improved packaging
  – Example: Oil cans v. plastic bottles
  – Optimization of packaging size and new packaging materials
  – Protecting food integrity

• Adequate levels at point of consumption
  – Supply chain management
  – Oil availability and use in the household
  – Food matrices (bioavailability once consumed)
Summary FAQR II Accomplishments - Process

USAID/USDA/other USG
- Technical **working groups set up** across agencies on auditing, food safety, and quality assurance

Global (USAID, WFP, UNICEF, MSF)
- **Formal Terms of Reference adopted**; FAQR as secretariat
- **Harmonization of specs** (premix, macronutrient composition)
- Dialogue on packaging, labeling, programming harmonization
- Food **safety standards, joint-audits**, novel products
- Successful promotion of **single RUF**
- Engagement with **Codex Alimentarius** on global RUF standards
Summary FAQR II Accomplishments - Evidence

Research Engagement on Food Innovation for Nutritional Effectiveness (REFINE)

32 currently ongoing studies

- Product Innovation
- Program Innovation
- Cost Effectiveness
- Effectiveness
- Efficacy
- Use
- Acceptability
- Composition

Bars represent the number of studies:
- Blue: MAM-specific
- Light blue: MAM/SAM/Stunting
Summary of FAQR II Accomplishments - Evidence

• Field studies ongoing or complete:
  – Field Study #1: **Malawi**, complete
  – Field Study #2: **Burkina Faso**, ongoing, enrollment complete
  – Field Study #3: **Sierra Leone**, stopped, (Ebola)/new study starting
Malawi (complete): CSB + oil and packaging/messaging

- Beneficiaries **added more oil** in both intervention groups
- **Messaging did not improve compliance** (on packaging)
- **Most cost-effective** intervention was oil + SBCC
  - Lowest cost in reaching porridge at target FBF:oil ratio
- **Repackaging** has added **benefits**
  -- e.g. hygiene, reduced distribution time, preference
- **Sharing highest in Control Group**
  - When sharing occurred, most common among children <5y
Malawi Field Study: Implications for FFP

- **Beneficiaries can add more oil** to CSB porridge if given sufficient oil and SBCC

- **Smaller bags** reduce handling breakpoints (with potential benefits to food safety and dignity)

- Collecting **cost-effectiveness** information provides a sound basis for program decisions
  - Costs include products, transportation, storage, and distribution, and time and money costs to beneficiaries
### Sierra Leone: Treatment of MAM

#### Time to recovery among those enrolled and recovered ≥ 10 weeks prior to study suspension, n=514

<table>
<thead>
<tr>
<th></th>
<th>SC+ (comparison)</th>
<th>SC</th>
<th>RUSF</th>
<th>CSWB</th>
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<tbody>
<tr>
<td>n</td>
<td>171</td>
<td>88</td>
<td>141</td>
<td>114</td>
</tr>
<tr>
<td>mean ± SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time to recovery (weeks)</td>
<td>4.7 ± 2.6</td>
<td>4.3 ± 2.5</td>
<td>5.8 ± 2.9</td>
<td>5.5 ± 2.8</td>
</tr>
</tbody>
</table>

#### Growth outcomes among those with at least 2 research visits, n=1259

<table>
<thead>
<tr>
<th></th>
<th>SC+ (comparison)</th>
<th>SC</th>
<th>RUSF</th>
<th>CSWB</th>
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<tr>
<td>n</td>
<td>367</td>
<td>189</td>
<td>377</td>
<td>326</td>
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<tr>
<td>mean ± SD</td>
<td></td>
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<tr>
<td>Weight gain, first 4wks (g/kg/d)</td>
<td>1.9 ± 2.3</td>
<td>1.8 ± 2.6</td>
<td>1.2 ± 2.6</td>
<td>1.7 ± 2.9</td>
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<td>MUAC gain, first 4wks (mm/d)</td>
<td>0.1 ± 0.3</td>
<td>0.2 ± 0.3</td>
<td>0.1 ± 0.3</td>
<td>0.1 ± 0.3</td>
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<tr>
<td>Length gain, total (mm/d)</td>
<td>0.4 ± 0.4</td>
<td>0.4 ± 0.6</td>
<td>0.2 ± 0.5</td>
<td>0.4 ± 0.5</td>
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Sierra Leone Study: Implications for FFP

- No one food performed best on all growth outcomes
  - Different metrics for outcomes give different conclusions
- FBFs had outcomes comparable to or better than RUSF: recovery rate, time to recovery, rate of weight gain and length gain
- Cost-effectiveness data critical for programmatic decision making
  - RUSF at a lower calorie content per dose was most costly per treatment and per recovered child
- Recovery rates overall were lower than in similar studies (~47-60%, cf. 70-80%)
- Effects of Ebola Virus Disease are unknown
## Burkina Faso: Prevention of MAM and stunting

**Enrollment and follow-up information, Burkina Faso FAQR, May 2016**

<table>
<thead>
<tr>
<th>Group</th>
<th>Number children enrolled</th>
<th>Excluded for SAM* at enrollment</th>
<th>SAM* Referrals: Follow-up</th>
<th>Deaths</th>
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<tbody>
<tr>
<td>Group 1</td>
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<td>24</td>
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<td>Group 2</td>
<td>1513</td>
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<td>TOTALS</td>
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<td>68</td>
<td>141</td>
<td>114</td>
</tr>
</tbody>
</table>

*Severe Acute Malnutrition screened using mid-upper arm circumference, where < 115 mm = SAM*
Burkina Faso: Insights from ongoing study

• Beneficiary practices:
  – Sharing with other children in the family is universal
  – Sharing with other families is common
  – Flour (CSB+, CSB14, SC+) often eaten dry

• Storage and transport:
  – Difficult to store the foods in the warehouse at the appropriate temperature (<30C), as temperatures usually exceed 40C
  – Transport of RUSF and SC+ is more expensive due to surface area to volume ratio (these commodities are very light but take up a lot of space).
Evidence on Cost-effectiveness

- Comprehensive Cost matrices developed to calculate total cost side of cost-effectiveness (including product losses): Commodity cost, repackaging, transportation, storage, distribution, cost to household
FAQR Phase III: Improved packaging

- Enhancing/retaining nutrients in food aid products
- Extending product shelf life
- Improving transportability
- Resisting pest infestation
- Packaging as a vehicle for messaging
FAQR Phase III: Bioavailability, absorption (matrices)

- Ways to improve food digestibility and ability of consumers to absorb nutrients
  - Physiological use of nutrients
  - Amylase addition
  - Extrusion techniques
  - Other food ingredients (for shelf-life, digestibility)
Optimizing supply chain management
   – Single websites/commodity management systems for FFP and USDA updates on specs, food quality feedback, etc.?

Identifying appropriate commercial practices (product tracking technology, etc.)

Focus on the last mile of the distribution chain

Scenario building for optimizing procurement, delivery

Role of pre-positioning in the pipeline
FAQR Phase III: Food Safety and Quality Assurance

- Quality Assurance feedback system

- Role of Food Safety and Modernization Act (FSMA)

- Local and Regional Procurement
  - Auditing, Sampling, and Inspection
FAQR Phase III: Future Evidence and Practice

• Developing a Community of Practice; USG Working Groups

• Evidence Summit
  – Share advances and challenges in food aid research, new questions.

• Research
  – New metrics and measures for sustained recovery.
  – Understanding etiology of malnutrition, prevention and treatment programs, dietary amino acid sufficiency, improved protein quality.
  – Environmental enteropathy dysfunction (EED), lean mass versus fat mass accretion, neurological/cognitive function.

• Operational questions
  - Optimizing SBCC, last mile concerns, guidance on food product choices for cost-effective impacts, reaching adolescent girls/pregnant women, linking development and emergency programming, etc.