Summary box

In close collaboration with caregivers, health providers, programmers and nutrition researchers in Guatemala, Breakthrough ACTION used behavioral design to develop solutions that support families so they can continue feeding their young children of six- to 23-month-old during periods of illness and feed children more in the two weeks following illness.

Together, these solutions strengthen caregivers' understanding of why feeding during illness is important, remove uncertainty around how to feed children well during illness and recovery, and make it easier for caregivers to follow through on their feeding intentions.

This work is an adaptation and expansion of research and design activities that began in the Democratic Republic of the Congo (DRC).

Solutions box

Solutions work through multiple channels to support caregivers of six- to 23-month-old children to continue to breastfeed and feed children during illness, and to feed them more in the two weeks after illness.

- **"Foods to fight against illness**"(¡Alimentalos para luchar contra la enfermedad!) builds caregivers' understanding why children need food and energy to fight and recover from illness and helps them identify nutrient-dense options for feeding their sick and recovering children.
- **Support your family module** (Apoya a tu familia) alleviates mothers' cognitive and time scarcity by emphasizing the ways grandmothers can support their families and create more opportunities for their daughter/daughter-in-law to focus on feeding when a grandchild is sick.

Background

Young children experiencing illness require adequate nutrition to recover and avoid malnutrition. Global evidence shows that children's growth deteriorates rapidly during and after illness if foods and feeding practices do not meet the additional nutrient requirements associated with illness.[1] Global guidance suggests children aged six to 23 months should continue to eat and breastfeed as much as possible during illness, and they should consume more than usual in the two weeks following illness.[2]

In many settings, however, young children consume far less than needed during these critical moments. Research suggests that in Guatemala, young children often consume a smaller quantity of food and less nutrient-dense foods during periods of illness, and rarely consume extra

[1] Paintal, K., Aguayo, V.M. (2016). Feeding practices for infants and young children during and after common illness: Evidence from South Asia. Maternal & Child Nutrition,12 (Suppl 1), 39-71. doi: 10.1111/mcn.12222.
[2] Dewey, K. (2003). Guiding principles for complementary feeding of the breastfed child. Pan American Health Organization and World Health Organization.

food following an illness.[3,4,5] These gaps are not unique to Guatemala, but globally relatively little research and programming has focused on these behaviors.

In Guatemala, Breakthrough ACTION built upon a behavioral design process conducted in the DRC that explored the behavioral factors that prevent caregivers from feeding their children according to the recommendations and designed solutions to encourage improvements in feeding during and after illness. The DRC insights and solutions are described in the Behavioral barriers to feeding young children during and after illness brief and the Behavioral solutions to child feeding during and after illness brief.

The insights and solutions developed in the DRC formed the basis for a collaborative behavioral design process. Behavioral design is an approach that leverages insights from behavioral economics, social psychology, human-centered design, and other disciplines to develop and test innovative solutions that reshape people's environment to positively influence their behavior.[6] Breakthrough ACTION began by exploring, through a desk review and key informant interviews, to what extent the behavioral barriers identified in the DRC were present in Guatemala, and how they differed. The team worked with caregivers, health workers, and other stakeholders in Guatemala to build solutions for families and health workers to address suboptimal feeding during illness, building from elements of the solutions developed in the DRC and generating novel approaches to address distinct aspects of the challenge and cultural context. The team learned from these stakeholders through co-design activities, conversations, and live trials of the tools in action. It then iteratively refined and re-tested prototypes of the solution materials.

How can we support child feeding during and after illness? This brief introduces the package of solutions developed through this process. It is intended to support policymakers and programmers, when they consider which of these solutions may help them achieve their health, nutrition, and development program goals. The brief describes how the solutions work, what questions to ask to determine whether solutions might fit local needs, and considerations for adapting and integrating them into health services, community activities, or both. The solutions can be used separately or together in a package, depending upon program needs and services desired.

Behavioral Design Process: A Snapshot

The table below provides a brief overview of the behavioral design process beginning with the work conducted in the DRC and the continuation of efforts in Guatemala to adapt the resources for the Guatemalan context. The outcomes of each phase are described in greater detail in the brief.

[3] Olney, Deanna et al. 2012. Report of Formative Research Conducted in Alta Verapaz, Guatemala, to Help Inform the Health-Strengthening Activities and the Social and Behavior Change Communication Strategy That Will Be Implemented through Mercy Corps PM2A Program – PROCOMIDA. Washington, DC: FHI 360/FANTA.

[4] Deeney, M., & Harris-Fry, H. (2020). What influences child feeding in the Northern Triangle? A mixed-methods systematic review. Maternal & child nutrition, 16(4), e13018.

[5] Vossenaar, M., Garcia, R., Doak, C. M., & Solomons, N. W. (2012). Reported changes in feeding practices during and after illnesses in 6 to 23 month old children receiving continued breastfeeding in the Western Highlands of Guatemala.

[6] Datta, S. & Mullainathan, S. Behavioral design: A new approach to development policy. Review of Income and Wealth, 60(1), 7-35. doi:10.1111/roiw.12093.

Evolution of the designs from the DRC to Guatemala	• Conducted formative research in the DRC to identify five key behavioral barriers, through 58 qualitative interviews and observations of ten consultations in health clinics in South Kivu, DRC • Through a desk review and key informant interviews with 7 stakeholders translated the insights to the Guatemalan context, identifying similarities and points of divergence from the findings in the DRC • Validated and refined the insights with health providers and community members during co-design • Translated the behavioral insights into concrete objectives for program design
Designed solutions for families	• Through structured individual and group activities, generated design ideas to address the insights, including adaptations of solutions developed in the DRC and novel design concepts • Filtered and expanded ideas through co-design with stakeholders to identify high-impact, feasible, and innovative ideas • Built prototype versions of 2 designs to refine the ideas • Tested and refined prototype solutions with 46 mothers, grandmothers and community facilitators, and other community members in Huehuetenango and Quiche

Behavioral insights: The evolution from the DRC to Guatemala:

The DRC and Guatemala shared the same behavioral challenge: children 6-23 months old are not eating adequately during illness and recovery. In both settings, caregivers faced limitations in the resources and foods available to them and caregivers missed opportunities to feed their children in alignment with nutrition guidelines. However, the design process uncovered unique nuances about the drivers of the challenge in Guatemala, as well as important contextual differences that led to a set of new solutions.

Quality versus quantity

In the DRC, caregivers were intently focused on specific foods, often those depicted in counseling aids that were often unaffordable or unavailable to them. As a result, they missed opportunities to feed their children nutritious locally available foods. Caregivers did not recognize the value of feeding more food in general during illness and recovery.

In Guatemala, by contrast, caregivers understood that sick and recovering children was important and intended to do so. However, time and bandwidth constraints led to missed opportunities to offer food more frequently. Additionally, some nutritionally dense foods were salient household staples, but were prepared in less nutritionally valuable ways that caregivers expected children would most readily accept. This led to inefficient feeding during illness and recovery. For example, caregivers prepared beans for the family but only fed children the water the beans were prepared in. Caregivers understood that all foods contain some nutritional value and accept the bean water as a “good enough” option. Particularly when a child is sick, Caregivers were particularly concerned

about the child refusing food when sick and anticipated they were more likely to accept thinner less nutritionally dense foods.

Fear consequences of "incorrect" choices

Caregivers in the DRC described many foods that can safely be consumed by young children as harmful, either for all young children or specifically for those who are sick or recovering, though this was inconsistent across households. They also mentioned health workers as an important source of information about which foods their children can and should eat. This pointed to an opportunity for facility- and community-based health workers to counter misconceptions and expand caregivers' perceived options for what they can safely feed their sick and recovering children. Overcoming misconceptions about inappropriate foods was particularly important in a context of severe food insecurity where families routinely have very few foods available to them.

In Guatemala, there were also strongly held beliefs about which foods were appropriate to feed a sick child. These included beliefs that certain foods can cause illness, and that foods were appropriate or inappropriate for specific illnesses. As in the DRC, these rules were not well defined and varied between households. However, Guatemalan caregivers felt greater uncertainty and expressed intense concern that they might feed their child the "wrong" food during illness, which they worried would exacerbate their child's condition. For example, some households shared that eggs were inappropriate to feed a sick child because it was perceived as "heavy" and could exacerbate illness while others felt it was an appropriate food to feed sick children. This led to inaction and missed opportunities to offer a variety of foods and encourage their sick children with limited appetite to eat.

Consequences of bandwidth constraints and opportunities for task shifting

In the DRC, mothers bore most of the responsibilities for preparing and feeding young children in addition to many other household tasks. As a result, they struggled to find the time and energy to prepare food outside set mealtimes and to offer food and breastmilk more frequently to sick and recovering children. Activities were tested to encourage task shifting within households and free up time for the mother, but the activities presented some risk of generating conflict within the household and distracting from other discussions. As a result, they were deprioritized within the solution set.

Guatemalan mothers experienced similar responsibilities and constraints, which led to missed opportunities to offer additional food. Mothers shared that they were often told that they needed to encourage children to eat during illness but were never told why. When combined with the fear described above, their uncertainty about why it was so important to feed more led to inaction.

As in the DRC, in Guatemala it was unusual for caregivers to prepare and offer food outside of mealtime unless the child expressed hunger. While caregivers were aware of various techniques for encouraging the child to eat, which they used during mealtime, they were not offering food more frequently during illness. Mothers could not easily find the time to prepare extra meals amid their many routine household responsibilities. Families often live in multi-generational homes and grandmothers are influential and important members of the household, and often take on additional tasks around the house when asked by their daughter or daughter-in-law. However, grandmothers were often an underutilized resource as many daughters and daughters-in-law felt uncomfortable asking their mothers or mothers-in-law for support.

Design implications

As a result of the differences described above, new solutions were developed in Guatemala to address the barriers and contextual features that prevented caregivers from feeding sick and recovering children according to nutritional guidance.

In DRC, the solutions emphasized the importance of **quantity** of food and encouraged caregivers that "every bite counts" and even small increases in the quantity of food could meaningfully contribute to the child's recovery. By contrast, in Guatemala the solutions support caregivers to offer high **quality**, nutritionally dense options available to them. They steer caregivers toward a set of default foods and preparations that caregivers can feed their sick and recovering children without fearing the consequences. They aim to make it as easy as possible for caregivers to make decisions about what they can and should feeding their sick and recovering child.

To address mothers' desire to understand why their child need food during illness, the solutions focus on conveying how the body uses food and needs energy during illness and recovery. This builds the caregivers' confidence that they are doing the right thing by feeding a child more frequently and encouraging them to eat during illness and recovery.

Lastly, the designs seek to take advantage of the important and respected role of grandmothers in the household so that mothers had more time and attention to focus on feeding children during and after illness. Rather than rely on mothers to ask for help when it may be uncomfortable for them, the solutions work with grandmothers to find ways they can proactively support their daughters and daughters-in-law during these times.

Add a note that in the Guatemalan context when we say feed more that meant increasing frequency of feeding and the quality of food.

Solutions at a glance

Feed them to fight the illness
!Aliméntalos para luchar contra la enfermedad!

A facilitated activity in group and individual settings that builds caregivers' understanding of the importance of nutrition for children during and after illness and helps them identify nutrient-dense options for feeding sick and recovering children.

Caregivers learn the importance of food during illnesses and empowered to take action to help their child recover

Caregivers can identify nutritionally rich foods to serve during illness reducing fears that the foods they feed could exacerbate their illness.

Voice of Grandmothers Modules
La Voz de Las Abuelas Module

A facilitated reflection activity integrated into an existing grandmothers groups that emphasizes the need for grandmothers to support their families when a grandchild is sick and prompts grandmothers to consider household tasks they can do in order to allow mothers' to focus on caring for the sick child.

Grandmothers reflect on their experience as young mothers and identify ways they can support their daughter and daughter-in-laws when a grandchild is sick.

Grandmothers have a sense of shared ownership of household tasks, alleviating some of the time and mental constraints mothers experience.

Mothers have more time and mental resources to feed sick and recovering children.

Sick and recovery children continue to eat and breastfeed.

Recovering children eat and breastfeed more in the 2 weeks following illness.

“¡Aliméntalos para luchar contra la enfermedad! / Help them fight the illness with food.”

Building caregiver confidence and removing the uncertainty of how to feed sick and recovering children

Relevant Insights that informed solution

When children are sick, caregivers are worried, and often feel limited in their ability to help their children recover from illness. This concern takes up a significant amount of caregivers’ mental bandwidth and attention and is compounded because, although most know feeding is important during and after illness, they may not know why. Furthermore, sick children often have limited appetite, and without knowing why feeding is important during and after illness, caregivers are uncertain if they should encourage their child to eat or defer to children’s cues. There are also strong community beliefs about which foods are appropriate to feed sick children, but these beliefs vary and are often contradicting. As a result, caregivers are unsure of which foods are safe for sick and recovering children. Caregivers fear that if they provide children with an “inappropriate” food for the specific type of illness it can lead to their condition worsening. They often spend significant mental energy considering food choices, though often end up offering foods that are household staples they anticipate the child will accept, even when these foods are less nutritionally dense.

Solution Description

“¡Aliméntalos para luchar contra la enfermedad!/Help them fight the illness with food” is a facilitated group activity that builds participants’ understanding of why food and nutrition are important for children during and after illness. The activity recommends specific nutritionally dense foods that can be fed to sick and recovering children to help the recover from illness, in a way that removes uncertainty about the acceptability of foods and is memorable. After the activity, participants receive a visual reminder of the activity’s main points. The reminder alleviates participants limited mental bandwidth when their child is experiencing or recovering from illness, by helping them easily remember which foods to feed. By removing uncertainty around food choice and emphasizing the importance of food during and after illness, the activity builds participants’ confidence to feed their children. The solution is primarily used during group caregiver sessions to support shifting community norms and beliefs around appropriate foods. However, the solution can also be used during one-on-one sessions to further reinforcement the messages and reach.

How the ““¡Aliméntalos para luchar contra la enfermedad!/**” activity works in practice**

1. Participants gather in a group for a brief facilitated discussion.
   Why? – A group setting is most appropriate for shifting beliefs around appropriate foods for children, since these norms are strongly held in communities.
2. The facilitator describes what is happening in the child’s body during periods of illness and recovery, and how food supports the child at these times.
   Why? – Building knowledge helps to reduce participants’ fear and supports them to understand how they can make a difference to their child’s recovery.
3. The facilitator shares a story about the differences in how thin and thick blankets protect children. The story is a metaphor for food quality and helps the facilitator explain which foods are best for children when they are sick and recovering from illness.

Why? – The metaphor introduces the concept of nutrient density in a relatable and memorable way.

4. The facilitator provides a few specific examples of nutrient dense foods that are readily available in communities and are appropriate to feed sick and recovering children.

   Why? – Providing suggestions for trusted foods helps remove uncertainty, instils confidence in what to feed, and guides participants towards selecting nutrient dense options.

5. After the activity, the facilitator distributes a sticker which visually depicts the foods discussed and reinforces the thick blanket metaphor.

   Why? – The sticker can be placed in the participant's home and serves as reminder of what to feed at key moments, during times of cognitive scarcity.

6. After the activity, during facilitated home visits, if the facilitator identifies a household with a sick child, they share an illustrated guide that depicts the key messages conveyed in the previous exercise.

   Why? – Sharing the key messages during times of illness helps reinforce and remind participants about what to do, at moments when they can act.

To understand whether the activity could be a good fit for your context, please respond to the questions below. If you answer "yes", the activity could be beneficial for your context.

- Could children's caregivers benefit from a deeper understanding of why quality nutrition is important for their children during and after illness?
- Do caregivers feel uncertain about whether they should encourage sick or recovering children to eat, particularly when their appetite is limited?
- Are there nutritious, affordable, locally available foods that caregivers don't always offer to their sick and recovering children?
- Are caregivers uncertain about which foods are safe and appropriate to feed sick children?
- Are there strongly held beliefs or norms about the appropriateness of food for sick children?

Considerations for adapting and implementing the activity

- The activity can be integrated into programs that convene groups of children's caregivers to discuss topics on nutrition and/or child health. For example, in Guatemala, the activity is integrated into existing mothers' support groups. The activity can also be used during one-on-one sessions with caregivers.
- In Guatemala, the activity is most appropriate in a group setting because of strong norms around appropriate foods. However, if the impact of norms is less prevalent in your context, the activity could be conducted during one-on-one sessions with children's caregivers and during household visits.
- The visual tool used to facilitate the activity could be delivered in a printed format, as designed for Guatemala, or adapted to be presented digitally (e.g., via a tablet). If adapted to a digital format, making the tool interactive may help to facilitate participant engagement.
- When adapting for your context, the specific foods presented can be easily adjusted to depict nutritious, affordable, locally available foods.
- The story of the thin and thick blanket can be adapted to use another item relevant to the context as the metaphor. The item chosen should carry the same message and distinctions as the thick and thin blankets.

Links to downloadable versions of the activity and implementation guidance.

Grandmother Voices Module/La Voz de Las Abuelas Module

Leveraging grandmothers' support to enable good feeding practices

Relevant Insights

Caregivers and mothers in particular experience cognitive and time scarcity as they are responsible for majority of the household chores and childrearing. This is exacerbated when there is a sick child. This often leads to missed opportunities to offer the child additional food. In Guatemala, where there are typically set mealtimes, it is particularly difficult for a mother to find time to prepare additional food outside those times.

Additionally, grandmothers are important members of the household and are influential in family decision making and childbearing and often live with or near their grandchildren. While grandmothers can help with chores to free up mother's time to focus on feeding the sick child, mothers are not always comfortable asking the child's grandmother for support.

Solution Description

The Grandmothers Voice (La Voz de Las Abuelas) module is a facilitated activity integrated into existing curriculum, La Voz de las Abuelas. The additional activity encourages grandmothers to provide household support when a grandchild is ill and recovering. Grandmothers are prompted to reflect on their experience as young mothers when their child experienced an illness and what they can do now as grandmothers to alleviate the challenges their daughters and daughters-in-law may experience at these times.

How the "La Voz de Las Abuelas" activity works in practice

1. Participants gather in a group for a facilitated discussion.
   Why? – A group setting is most appropriate for shifting norms and creates peer accountability for supporting their daughter or daughter-in-law.
2. The facilitator prompts grandmothers to reflect on how they felt as a young mother when their child was sick.
   Why? – Grandmothers reflect on the challenges they experienced as young mothers and are then provided an opportunity to change that experience for their family.
3. Grandmothers are asked to consider what tasks they can do around the house to support their daughter and daughters-in-law when a grandchild is sick.
   Why? – Create ownership amongst grandmothers to identify how they can support rather than relying on daughter or daughter-in-law to ask.
4. The facilitator displays a visual aid with images of a grandmother performing different household tasks to help grandmothers consider what they can do.
   Why? – Rather than prescribing tasks that a grandmother can do, she decides for herself, empowering her to define how she will support her daughter or daughter-in-law.
5. During subsequent sessions, the facilitator begins each session by asking participants who had a sick child since the last meeting and then asking what tasks they did around the house.
   Why? – Sharing amongst the group creates peer accountability for the grandmother's role when their grandchild is ill.

To understand whether the activity could be a good fit for your context, please respond to the questions below. If you answer "yes", the activity could be beneficial for your context.

- Is there an existing grandmother group or platform to integrate the module?
- Do time scarcity and bandwidth constraints contribute to low frequency of feeding a sick and recovering child?
- Are grandmothers typically a source of support for their daughters and daughters-in-law and live within the vicinity?
- Do mothers hesitate to ask their mothers and mothers-in-law for support?
- Are grandmothers respected and valued in the household?

Considerations for adapting and implementing the activity

- The activity can be integrated into programs that convene groups of grandmothers. For example, in Guatemala, the activity is integrated into existing grandmother groups.
- Consider how relationship dynamics may influence the success of this activity. For example, in Guatemala, the grandmothers' groups also facilitate discussion on healthy communication with other members of the family.

Links to downloadable versions of the activity and implementation guidance.

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