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IN MY TUMMY

Rainbow In My Tummy™ Expansion Feasibility Study:

Increasing Access to Healthy Foods and Wellness in Early Care and Education Programs across Buncombe County

December 2020

N.C. Center for Health & Wellness at UNC Asheville
Culture of Results™

Prepared By:

Emma Olson, MPH, MSW, Director of Partnerships and Evaluation
Alex Mitchell, MPH Candidate, Research Assistant

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Advisory Group Members:

- Ameena Batada, DrPH, Associate Professor, UNC Asheville
- Richard Caro, Vice President for Philanthropy, Verner Center for Early Learning
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- Genie Gunn, Director of Food and Nutrition, Verner Center for Early Learning
- Kaitlyn Guyer, Director of Grants and Compliance, Verner Center for Early Learning
- Deanna LaMotte, Early Childhood Systems Coordinator, Buncombe Partnership for Children
- Amy Joy Lanou, PhD, Executive Director of NCCHW
- Anja Mayr, Health Coordinator, Verner Center for Early Learning
- Kristin MacLeod-Johnson, Verner Center for Early Learning Parent

Key Informant Interview Participants:

- Kelly Brandon, Former Director of Development of Verner Center for Early Learning
- Genie Gunn, Director of Food and Nutrition, Verner Center for Early Learning
- Deanna LaMotte, Early Childhood Systems Coordinator, Buncombe Partnership for Children
- Anja Mayr, Health Coordinator, Verner Center for Early Learning
- Bronwen McCormick, Former Rainbow In My Tummy Director
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Executive Summary & Key Findings

The desired results of this feasibility study were to understand the impact of the Rainbow In My Tummy™ comprehensive nutrition program on key customers, identify recommendations for improvement and growth, and explore whether and how core components of the program could be expanded into early childhood education centers across Buncombe County and beyond.

The Culture of Results Initiative independent research team led this feasibility study through the following methods: 1) reviewed existing research regarding early childhood interventions focused on nutrition in educational settings and prior evaluations of Rainbow In My Tummy; 2) collected and analyzed primary data through a focused discussion and survey of early childhood center leaders participating in a Director of Practice group and eight key informant interviews; and 3) synthesized findings into this report. The report structure follows the Results-based Accountability™ evidence-based planning framework and includes: key customer changes and measures of impact; strengths and conditions of success; weaknesses and threats; general recommendations for improvement; and possible models for expansion. Equity considerations were intentionally explored throughout.

Through review of past evaluations and key informant interviews, Rainbow in My Tummy was found to positively effect change on children, parents, families, teachers, staff, and early childhood education centers. Primary changes for children included an increased understanding of and willingness to try a new and wider variety of foods as well as increased involvement in food choices both at home and at the grocery store. These changes were seen to positively impact the overall quality of children's diets. Key changes for parents of children in the RIMT program included an increased understanding of the importance of healthy foods and nutrition and subsequently increased preparation of healthy foods in the home. Studies also showed important changes in interactions between parents and children—children more actively participated in choosing healthy groceries and parents regularly asked about what their children were eating in school. Teachers and staff also reported an increased understanding of the importance of healthy foods and nutrition, eating healthy food more often at work, and modeling that healthy eating for the children in their care more regularly. Centers reported an increase in the quality and quantity of healthy foods they served after implementing RIMT, such as fresh fruits and vegetables, and a decrease in unhealthy foods served, such as processed foods, trans fats, high fructose corn syrup, and refined grains. The program was seen to further equality by enabling all children, families and staff to access healthy and nutritious foods regardless of their socioeconomic status. The interactions that result from "family-style dining" between children and staff with diverse backgrounds and with foods from different cultures is an opportunity to advance equity as well.

Core components of RIMT were identified as: 1) building awareness and buy-in for key stakeholders; 2) recipes and compliance documents and training; 3) nutrition education for staff, children, and family members; 4) nutrition and family style dining training for teachers; and 5) guidance on creating culture of health in the center environment. Many strengths and necessary conditions for expansion of these components were identified, in particular the need for a strong RIMT leader to gradually build buy-in at centers while also acknowledging that all centers have different capacities for change, requiring a flexible implementation approach. Key challenges and threats to RIMT were determined to be a lack of leadership around the program and the expectation that RIMT be a one-size-fits-all model which may be viewed as judgmental. Lack of buy in from teachers, families, and administration was also seen as an important threat to the program as well as challenges regarding food preparation, storage equipment and costs.

Key informants made many general recommendations for ways to successfully implement, expand, and sustain RIMT. These included Verner strengthening their own practices of RIMT and equally investing in the program across all three of its sites, potentially by hiring a full time RIMT director. Key informants highlighted the importance of a flexible "meet them where they are" approach to expansion and implementation. They also recommended further research and evaluation of the program to make it evidenced-based and more appealing to certain funders. They advocated for promoting RIMT more widely and developing better training for teachers and center staff. Several possible models of delivery for expansion of RIMT emerged from the key informant interviews as well as in background research: printing/publishing and disseminating RIMT materials, providing trainings to interested centers, providing implementation support for interested centers, creating farm to preschool partnerships, and using shared services models.

Overall, the many significant impacts of the Rainbow In My Tummy on children, families, and centers and their staff illustrate that strengthening and expanding the program across Buncombe County and beyond could improve the health and wellbeing of the community. Exploring implementation of some of the strategies that require fewer resources could be a beneficial first step as stronger funding is pursued, particularly in light of the effects of the COVID-19 pandemic on center capacity and interest in innovation. Additional research, evaluation, and funding for scaling and program development could greatly benefit the health and wellness of children across the region.

Background and Approach

Desired Results

The desired results of this feasibility study were drafted from the original grant proposal from Verner Center for Early Learning to the WNC Bridge Foundation and Verner's subsequent request for proposals from research teams. These were revised with input from the advisory group that was formed to guide and provide feedback on the research.

Key desired results that were achieved through this work include:

- Conduct a feasibility study to determine if Rainbow In My Tummy meals and curriculum could be delivered to early childhood education centers across Buncombe County
- Assess the Rainbow In My Tummy program through racial equity and social determinants of health lenses
- Determine the potential for Rainbow In My Tummy to be considered "evidence-based"
- Determine the core components and how these could be made sustainable for other centers
- Redefine the value of Rainbow In My Tummy
- Determine whether Rainbow In My Tummy would be profitable to expand and worth the effort

Other desired results that were identified but not achieved because of the effects of the COVID-19 pandemic on the methodology and budget and timeline constraints include the following. These should be considered in the future:

- Update the program based on this assessment
- Develop health and food literacy materials to supplement the curriculum

Program Overview

Rainbow In My Tummy (RIMT) is a comprehensive nutrition program for early childhood education (ECE) centers that was created at the Verner Center for Early Learning in 2008. Verner is a nonprofit agency providing high quality, affordable early care and education to over 300 children, birth to five years old, in three locations and a home-based program throughout Buncombe County, North Carolina. RIMT was developed to address the growing childhood obesity crisis in the United States. Through nutrition

awareness and consumption of diverse, nutritious foods, the program promotes a lifelong preference for fresh unprocessed foods in young children.

Background on Study

For several years, Verner Center for Early Learning has been considering and trying to expand their Rainbow In My Tummy nutrition program, and in 2020 they received funding from WNC Bridge Foundation to conduct a feasibility study on this topic. They posted a request for proposals from independent research teams to support this work, and The North Carolina Center for Health and Wellness (NCCHW) Culture of Results Initiative was chosen to lead this feasibility study from March 2020 through December 2020. Culture of Results (COR) is an independent training and evaluation initiative that supports assessment, planning, evaluation and improvement processes of communities and programs across North Carolina.

Culture of Results applies Results-based Accountability™ (RBA), an evidence-based framework for planning and evaluating population health and wellbeing and program effectiveness. The body of this report follows the data-driven RBA thinking process for planning and improvement. It presents the desired results, related headline community indicators in the introduction, key customer changes, performance measures, the context or "story behind the curve," and potential strategies or "what works to do better."

Introduction

In the United States almost one-third of children are overweight or obese, with these numbers disproportionately higher among communities of color, low income, and rural populations. Nationally, "obesity prevalence among 2-5 year old children is almost twice as high in African American children and three times as high in Hispanic children compared to white children (10.4%, 15.6%, and 5.2% respectively)".[1] This disparity can be attributed to numerous inequities related to accessibility of heathy foods, cultural elements, and access to places to be safely physically active. In Buncombe County 28% of children aged 2-4 are

% "Very/Somewhat" Difficult to Buy Fresh Produce

	2012	2015	2018
Buncombe	20.9%	28.9%	—
WNC	n/a	30.6%	—

5+ Servings of Fruits/Vegetables per Day

	2012	2015	2018
Buncombe	9.0%	10.6%	7.2%
WNC	8.0%	8.1%	6.5%

calculated as % with 5+ F/V per day; not comparable to averages

Average Servings of Vegetables in the Past Week

	2012	2015	2018
Buncombe	8.6	9.3	—
WNC	8.3	8.4	—

Average Servings of Fruit in the Past Week

	2012	2015	2018
Buncombe	7.6	8.4	—
WNC	7.4	7.3	—

Table 1: Community Health Assessment data related to food insecurity and nutrition

[1] Yates, D. (2018). Childcare Centralized Meal Service: White Paper on Benefits, Economics and Guidance for Implementation.

overweight or obese, only 7.2% of residents of Buncombe are consuming the recommended servings of fruits and vegetables daily, and 28.9% of residents report it is very difficult or somewhat difficult to buy fresh produce (see Table 1).[2]

Poverty places children at higher risk of being overweight or obese. Marcia Whitney, president, and CEO of Verner Center for Early Learning, shared that "80% of the families we serve are living in poverty--overburdened and under-resourced." In the Western North Carolina region children experience poverty at slightly higher rates than across the state of North Carolina, 25.1% and 24.7% respectively. Rates are lower in Buncombe County with 15.2% of children under the age of 5 living below the poverty line.[2] The population served by Verner experiences poverty at more than 5 times the rate of Buncombe County, and this is also true at many other early childhood education centers in the area, particularly those providing Head Start and Early Head Start programming.

High quality nutrition programs in early education environments can greatly impact children's health and wellbeing. A 2018 study on dietary intakes of children in North Carolina childcare centers found that "although the diet quality of young children in the United States has improved marginally over the past few decades, in general, reports suggest that preschool age children consume excessive amounts of sugars, fruit juices, and dairy, while consuming inadequate amounts of fruits, vegetables, and whole grains."[3] Children consume as many as 40% of their daily calories while attending full day child care programs,[4] and it is recommended that centers provide one-half to one-third of the USDA recommended daily allowance of fruits, vegetables, whole grains, lean protein, and dairy.[5] Many poor health indicators over a lifetime can be affected by the foods that we eat, illustrating the importance of nutrition programming as an intervention to support children's health across the community. [4]

Robust nutrition services can be an opportunity for all children attending early childhood centers to access healthy food and nutrition resources equally, including trying new foods that might not be available to some children at home because of the relatively high costs of nutritious food and concern over waste. Thus, nutrition programs in early childhood education centers can offer expanded opportunities for children to try new and healthy foods and for families to incorporate them into meals at home.[5]

Verner teacher, Melissa Wilson, discussed the need for nutrition services not only to support children's health but also their ability to learn, as "having access to good food, nutritious food, is important for children to be able to pay attention, is important for children to

[2] WNC Healthy Impact Community Health Assessment, Secondary Data Workbook 2019.
[3]Ball, S. C., Benjamin, S. E., & Ward, D. S. (2008). Dietary Intakes in North Carolina Child-Care Centers: Are Children Meeting Current Recommendations? p 719
[4] Luecking, C. T., Mazzucca, S., Vaughn, A. E., & Ward, D. S. (2020). Contributions of Early Care and Education Programs to Diet Quality in Children Aged 3 to 4 Years in Central North Carolina.
[5] Ball, S. C., Benjamin, S. E., & Ward, D. S. (2008). Dietary Intakes in North Carolina Child-Care Centers: Are Children Meeting Current Recommendations?

feel ready to learn, and important for their needs to be met." Several stakeholders mentioned the importance of sitting down together to "break bread" as a means of supporting children's development in various ways. Providing children with an opportunity to sit down to a meal with their teachers and peers furthers the case for high quality nutrition services in early childcare education centers.

The COVID-19 pandemic adds additional urgency to the need for nutrition programing for children and families. According to reports from local food distributing agencies, the pandemic has increased food insecurity in many households, making meals served in the early childcare setting even more important. Additionally, obesity in adults has been linked to complications from COVID-19 and nutrition programs that encourage healthy eating can prevent childhood obesity, thereby decreasing the likelihood of adult obesity and complications in future pandemics.[6]

In sum, this background research illustrates that a nutrition program, particularly one that serves young children in early childhood education settings, could greatly benefit children and families in Buncombe County and beyond, particularly those who have low income and are at higher risk for experiencing childhood obesity.

Methods

From March-December 2020, the Culture of Results Initiative conducted this feasibility study through the following methods:

- Establishing an advisory group made up of key stakeholders to guide the process, including: Verner staff, parents, and administrators; and community partners from Bounty & Soul and Buncombe Partnership for Children.
- Developing a feasibility study design, work plan, and instruments for data collection and revising with feedback from the advisory group.
- Collecting and analyzing secondary data through review of relevant background materials and prior research to understand the RIMT program and various issues related to delivery.
- Collecting and analyzing primary data from a focused discussion among early childhood education center leaders participating in a Directors Community of Practice group, from a follow up survey and through eight key informant interviews with various stakeholders.[7]

[6] Dietz, William H. (2020). Reducing Childhood Obesity Now May Help in the Next Pandemic

[7] Interviews were approved as exempt by the UNCA Institutional Review Board. The interview protocol and questions and key findings from the survey of Directors Community of Practice participants are included in Appendix A and B, respectively. It is important to note that qualitative research is inherently biased and, in this case, based on key informant perceptions and perspectives. Views and opinions shared by key informants should not be taken as indisputable fact.

- Synthesizing secondary and primary data into this feasibility report that presents key findings related to exploring expansion and improvement of RIMT.

The COR research team analyzed all qualitative data through a grounded theory approach to identify emergent themes. The various sources of research were organized and key findings triangulated and grouped using the Results-based Accountability evidence-based planning framework.

This feasibility study was conducted from March 2020 until December 2020 during the COVID 19 global pandemic. The pandemic influenced the ways in which the team collected data, the answers that key informants and focused discussion participants gave, and many aspects of life for those working in and utilizing childcare services. The research team originally considered surveying families about impacts of RIMT and observational assessments, and these methods were deemed no longer appropriate during the pandemic.

Study Findings

Key Customer Changes

The following sections include information that was collected through this study or other previous studies related to the Rainbow In My Tummy Initiative specifically. Review of this research reveals that the Rainbow In My Tummy initiative can create many positive changes for key customers served.

Customer is a term used to describe the people whose lives are affected or influenced by an initiative. Through primary and secondary data, the research team determined that Rainbow In My Tummy impacts multiple customer groups including: children, parents, families, teachers, staff, and centers. Key customer changes and performance measures, measures of the quality and impact of RIMT, follow for each group. This research shows important impacts across all customer groups that include positive changes in knowledge and understanding, attitudes and opinions, skills and behaviors, and circumstances. However, key informants felt those among children, especially increased comfort with and consumption of diverse nutritious foods, were the most important programmatic changes, since these form the foundation for lifelong habits and influence important health and wellness conditions across the lifespan.

Key changes among children participating in Rainbow In My Tummy include the following:

- Recognizing more foods and understanding where they come from;[8]

[8] McDowell Implementation Study- 2014

- Being more willing to try new foods (71%-91%[9] of parents report);[10]
- Eating a greater variety of foods when RIMT menus are used (92% of staff report);[11]
- Becoming more involved with food choices at the grocery store and at home and choosing healthier foods (45% of parents report);[8]
- Significantly improving their diet and eating patterns (accordingly to 75% of parents).[12]

Parents of participating children reported the following changes about their own behaviors and attitudes:

- Regularly talking with children about what they ate in school (87%);[13]
- Preparing a meal at home based on a RIMT recipe (74%);[13]
- Choosing healthier foods for themselves and their family; [13]
- Seeing greater importance in healthy foods and nutrition;[14]
- Being satisfied with the accommodations for their children's dietary needs.[15]

Teachers and staff working in centers with RIMT report similar benefits:

- Seeing greater importance in healthy foods and nutrition; [14]
- Trying more food at work and eating their center's food more often;[15]
- Craving less junk food and preferring healthier foods;[15]
- Modeling healthier eating with children (94%);[16]
- Appreciating the benefits of having two meals and a snack provided at work.[18]

Key changes to early childcare centers after beginning RIMT include:

- Increasing the amount of fresh fruits and vegetables served (80%)[17] and the variety of fruits (41%) and vegetables offered (31%);[17]
- Decreasing processed foods served for snacks (85%);[17]
- Eliminating trans fats, high fructose corn syrup, MSG, and artificial sweeteners (98%);[17]
- Offering seasonal menus;[17]
- Reducing the use of refined grains;[17]
- Increased consumption of breakfast and snack because of improvements in their quality and taste; [17]

[9] A-B Tech Parent Survey- 2014
[10] A-B Tech Staff Survey- 2014
[11] UNCA student Verner Staff Survey- 2018
[12] UNCA student Verner Parent Survey- 2018
[13] Verner Family Survey- 2014
[14] McDowell Implementation Study-2014-2015
[15] A-B Tech Staff Survey- 2014
[16] Staff survey conducted by UNCA students in 2018
[17] A-B Tech Early Care and Education Center Report Highlights

- Appreciating the diversity and inclusion at mealtimes;[18]
- Integrating nutrition into classroom culture;[19]
- Community-building that sharing meals creates, both in the classroom and in the staff room across teams;[19]
- Reducing food waste because children are given ample time to eat.[19]

The Culture of Results team also identified possible customer changes through facilitating a focused discussion and administering a survey to Buncombe County area early childhood education center directors engaged in a Directors Community of Practice group with Buncombe Partnership for Children. These participants named the following as their perceived benefits of RIMT to children, families, and centers:

- Easy for parents;
- Well-fed children;
- Fresh fruits and veggies for children who may not otherwise get fresh fruits and veggies;
- Exposure to healthier foods;
- Family style dining;
- Teaching good eating habits;
- Everyone is receiving the same meal;
- No one is bringing something in that could cause an allergic reaction;
- Supporting good nutrition;
- Nutritional guidance;
- Variety of foods children don't usually get at home.

Furthermore, successful implementation and expansion of RIMT has the potential to impact equity issues. Key informants believe that the educational components of RIMT can lead both children and adults to be more comfortable advocating for themselves. One informant mentioned that receiving this nutrition education and information from a trusted source, such as RIMT providers or teachers, may make people more comfortable communicating with clinicians around nutrition needs such as what foods are appropriate for their child's age or food sensitivities their child may be experiencing. RIMT may also impact equity via the food that is served. Key informants pointed out that all children attending a center serving RIMT food are being served the same, high quality food and that all children are being well fed. Kelly Brandon, former Verner development director describes RIMT as "available to any preschooler that is eating." Key informants and focus group participants also pointed out that RIMT is able to accommodate food allergies and dietary restrictions, eliminating the need for parents to

[18] RIMT Feasibility Study Key Informant Interviews

send food to school with children and potentially preventing some inequities from being brought into the classroom.

RIMT has the potential to expose students, staff, and family to food that varies from the "standard American diet" by including recipes that represent diverse cultures. Melissa Wilson shared that RIMT "brings this new appreciation of culture, a new appreciation of diversity and inclusion into mealtime" and that she "saw the switch of children eating chicken nuggets into tabouli". White children participating in RIMT may be introduced to more ethnically diverse foods and cultures through RIMT. Children of color may see their White peers trying and appreciating their culture's foods. Both of these phenomena contribute to children growing up with more inclusive attitudes as a result of participating in RIMT. However, while the these were identified as equity changes in key informant interviews, the Director of Food and Nutrition has indicated there is still greater opportunity to diversify cultural food choices in this area.

What's Working: Core Components and Strategies

Rainbow In My Tummy is a robust and holistic nutrition and meal program with the following core components: 1) building awareness and buy-in for key stakeholders; 2) recipes and compliance documents and training; 3) nutrition education for staff, children, and family members; 4) nutrition and family style dining training for teachers; and 5) guidance on creating culture of health in the center environment. Key informants were asked about which of these strategies were the most important for effecting the customer changes previously described.

Building Awareness and Buy-in

Creating buy-in with key stakeholders within the centers was frequently named as both the most important and most difficult component to support successful RIMT programming. Some key informants viewed the comprehensive and holistic version of RIMT as the most effective version, acknowledging that this version of RIMT requires the most work on buy-in. Genie Gunn, Director of Food and Nutrition at Verner, described buy-in as "a deliberate effort to get to the center of that stakeholder circle and have it be their idea and to facilitate that embrace." Key informants also consistently named administrative buy-in in centers looking to implement RIMT as important to drive wider buy-in and set expectations in centers. One key informant named outreach to interested centers with funding tied to implementation and expansion of the program as an important method of building buy-in. Building relationships with and providing resources for implementation in centers can influence the depth of infusion of RIMT into center life, as well as impact sustainability of the program.

Creating a Culture of Health

Creating a culture of health was named by many key informants as an important component of RIMT. Modeling healthy eating by teachers is an important part of the culture of health in the classrooms. Key informants named kids seeing trusted adults eating the same food as they do and hypervigilance around the language used during meals as vital to children accepting the RIMT meals. Additionally, a survey of teachers found a positive correlation between teacher and child acceptance of foods.[19]

Building a healthy culture in the classrooms is not only happening at mealtimes. RIMT classrooms bring healthy food into play time by, for instance, stocking kitchens with non-branded, non-junk food containers. Providing nutrition education and trainings for teachers, parents, and children were also named as important, non-mealtime ways to enhance the culture of health in centers and to increase acceptance of RIMT.

It is important to note that healthy food cultures in centers do not grow without work. Research emphasizes the importance of understanding teachers', students', and families' cultures and relationships to food, as well to remain sensitive to the fact that people may have a difficult time accepting that food that they grew up with is not healthy.[20]

Family Style Dining

Family style dining, a practice of allowing children to serve their own food, was often mentioned as an important component of RIMT. Key informants saw family style dining contributing to how children approach food and observed that if the children were able to choose to put food on their plate, they were more likely to try it. Key informants described family style dining as a nonjudgmental, non-confrontational style of eating that is not berating and encourages curiosity. Marcia Whitney describes family style dining as creating an environment in which "foods are an opportunity, but foods are not an obligation." Family style dining may be seen as a way to build buy-in and equity for RIMT for students in ECE centers. By offering high quality foods and letting children choose what and how much they would like to eat, children are allowed some autonomy in their participation in the program as well as respect for their choices at a young age. Family style dining may also advance equity for staff, through creating a community setting to experience food and by impacting possible food insecurity among staff.

[19] Mission Hospital Child Development Center Food Acceptance Survey- 2014
[20] Hunt, G. (2012). Enhancing or Impeding Nutrition and Physical Activity Best Practice in Early Childhood Education Centers: An Exploratory Study.

Unfortunately, during the COVID 19 pandemic, key informants from Verner shared that staff, other than teachers in classrooms during meals, were no longer able to share RIMT meals and missed the community component that this created. During the pandemic, Verner has also stopped certain aspects of family style dining, as children can no longer serve themselves, removing children's ability to have control over their meals and potentially impacting the benefit experienced.

Recipes and Compliance Documents

Using recipes and compliance documents to change the food served as part of RIMT is often the main focus of implementing the program. Key informants noted that an advantage to using RIMT to improve nutritional quality in ECE centers is that all menus are compliant with meal patterns required by the Child and Adult Care Food Program (CACFP), the federal food reimbursement program. Many centers rely on the money received from this program to run their food programs at low or no cost.

Using recipes and compliance documents to serve high quality, nutritious foods is a main aim of RIMT. The resulting variety of foods served as part of RIMT was specified by key informants as an important component for improving the nutritional quality of food served to young children. Research shows that children generally consume a large percentages of the food served to them at meal time in centers, noting that deficits in nutrition are not due to children not consuming enough food, but rather that the food being served is not high quality enough to meet nutrition needs.[21] Rainbow In My Tummy can improve the nutritional quality of foods served and the overall diets of the children eating the food.

Equality and Equity

Key informants named the equality in the way that Rainbow In My Tummy is run as an important component of the program. All students are served the same food in the same way across sites, supporting greater equity as they are all able to access nutritious food at school regardless of their family situation. This equality also applied to the way in which families are included in the program. All families are encouraged to join in meals in the classroom, to request recipes from the staff, and are oriented to the program in the same way. Families also engage with Rainbow In My Tummy at parent nights and other events where RIMT food is served, and conversations around healthy eating and RIMT are incorporated into home visits. Additionally, key informants mentioned that parents are connected with menu changes and are able to work with staff to address issues such as picky eaters or food allergies. Because RIMT is equally distributed across centers serving predominantly people experiencing poverty, it enables people with less access to nutritious foods to gain it, promoting equity in turn.

[21]Ball, S. C., Benjamin, S. E., & Ward, D. S. (2008). Dietary Intakes in North Carolina Child-Care Centers: Are Children Meeting Current Recommendations?

Story Behind the Curve

What's Helping: Strengths, Necessary Conditions and Opportunities

The primary purpose of this feasibility study is to explore recommendations related to possible expansion of RIMT programming. Key informants named numerous strengths and essential conditions to successfully implement Rainbow In My Tummy. Bronwen McCormick, former director of Rainbow In My Tummy at Verner, shared that at "the centers that I was involved with that heavily implemented Rainbow In My Tummy…there was considerable buy-in and considerable effort put into the RIMT concept. It really went across the board from teachers, to administrators, to parents, to kids…once that culture begins to get established it definitely takes hold."

Other informants agreed but added that ***gradual buy-in is most effective*** when making large changes to the food programs in centers. A study conducted in McDowell County found that when entering a new community, ***RIMT must allow 6 months to 1 year to develop trust, partnerships, and general education prior to beginning implementation.***[22] Key informants stated that not only must this buy-in be gradual, it also must happen through community consensus and ***involve all stakeholders*** who will be affected by the change.

Key informants named that it is important to recognize that ***different centers will have different levels of readiness, capacity, and revenue and funding***. The McDowell County study advised that ***centers must be stable and ready*** to take on a new challenge prior to RIMT implementation.[21] Several key informants recognized that RIMT has high standards, that not all centers are able to immediately meet those standards, and this means that it is important to have ***flexibility in implementation and to meet centers where they are***.

The following figures represent necessary components for the successful implementation and growth of nutrition programming, the first from academic literature and the second from the research team findings.

[22] McDowell Implementation Study-2014-2015

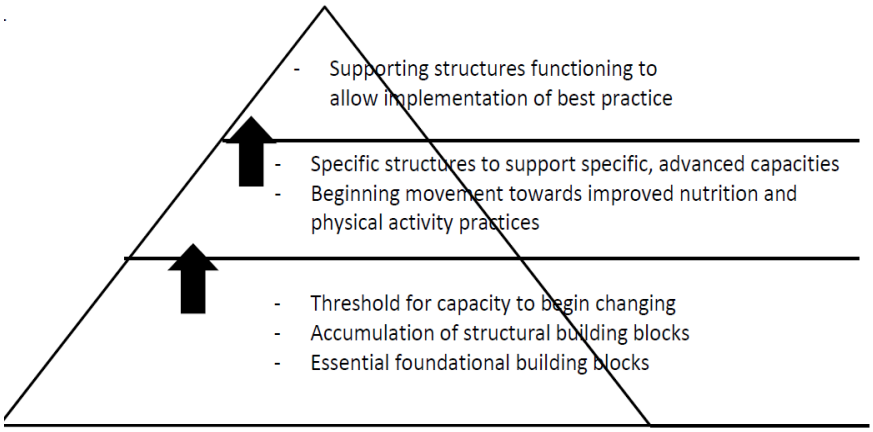


Figure 1: Theoretical pyramid for capacity building among centers implementing nutrition and physical activity programming[20]

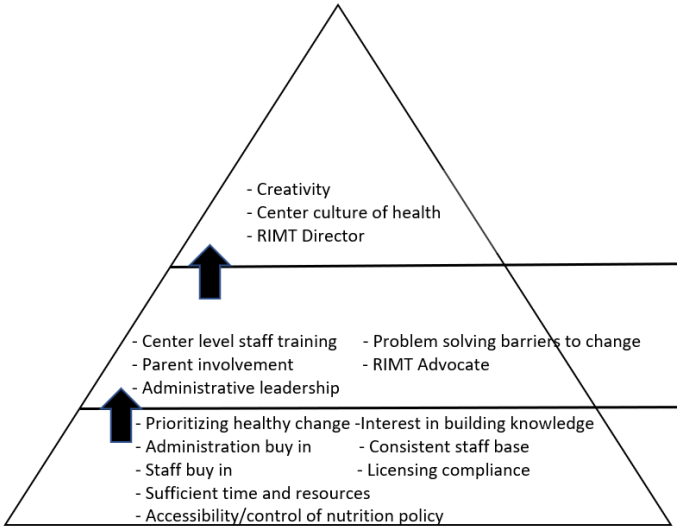


Figure 2: This pyramid reflects this type of framework, where levels build upon each other, with the key factors found in this feasibility study[20]

Key informants agreed that one of the most important factors related to successful implementation and expansion of RIMT was ***program leadership in each center***, independent of center administration. This leadership role was described as a champion of the program in each center, and/or a ***dedicated RIMT director*** who oversees implementation and offers ongoing support. Informants agreed that a strong, respected leader is necessary for sustainability of the program.

What's Hurting: Challenges, Weaknesses and Threats

Key informants also discussed numerous concerns or potential challenges to continued operations and future expansion of RIMT. Before considering expansion challenges, it is important to note that several key informants recognized challenges to the continued success of Rainbow In My Tummy at Verner Center for Early Learning. Marcia Whitney sees the ***potential for the program to be viewed as preachy and judgmental***, especially since it is run by a white-led organization serving clients of color. Another key informant viewed pushing a ***one-size-fits-all or comprehensive model only as problematic***. This all or nothing approach could be seen as a product of white supremacist culture. A survey of Verner staff noted that some felt there was an ***uneven distribution of resources and funds*** around RIMT for satellite campuses of Verner.[27] ***Lack of parental awareness*** of the program at Verner was noted in a parent survey, with only about 64% of parents having heard of the program.[23]

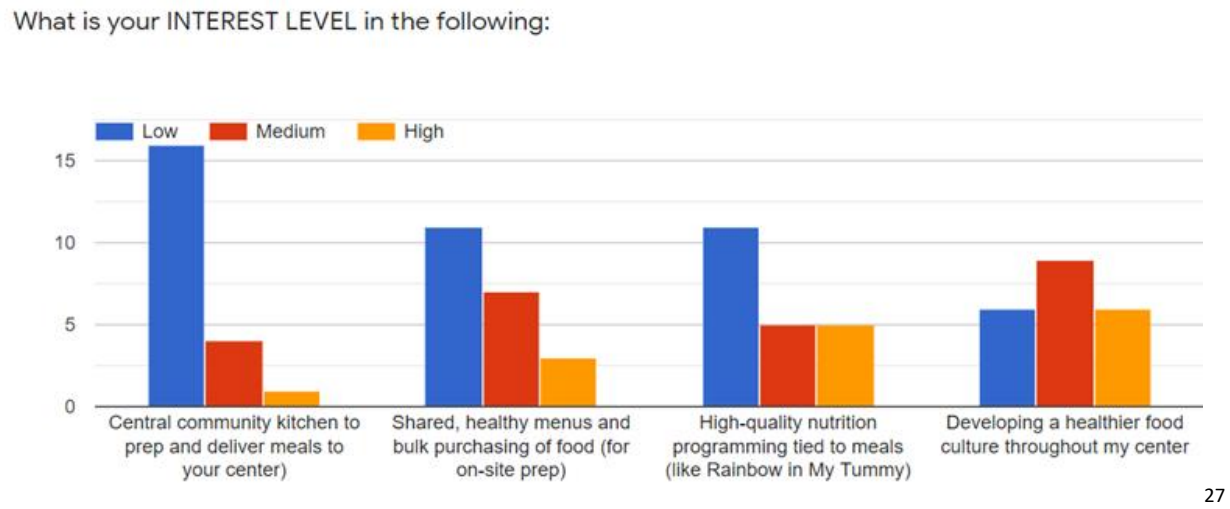
Lack of RIMT leadership was consistently mentioned by key informants as a challenge to the program. One key informant was specifically concerned about the sustainability of healthy culture change in centers without a RIMT Director. Another key informant saw not having a director as affecting policies and behavior that support center buy-in for RIMT. The 2018 UNCA study named having no director as leading to leadership issues and an inability to expand the program. [27]

As Verner considers future expansion, the following challenges are particularly important. Rainbow In My Tummy is resource intensive, both monetarily and time wise. A 2018 study by UNCA students found that ***RIMT is difficult to expand due to the high cost of the program***.[24] One key informant pointed out that RIMT is one of many possible ways that childcare centers can implement nutrition changes, and the ***full level of programming may not be feasible***. This was supported by a participant in the Directors Community of Practice discussion: "We don't continuously purchase the program [RIMT], but I know that [the chef] follows a lot of the same guidelines, menus, that kind of thing...If you're a licensed nutritionist it's pretty easy, once you figure out how it runs to do it your own self. "[25] Additionally, key informants mentioned that while RIMT has anecdotal evidence to support its use, it is ***not formally evidence-based, which creates barriers to pursuit of certain funding***. The ***expectation that RIMT be a revenue producing*** program was also seen as a challenge by key informants, especially since it operates in a resource poor early childhood education system.

Lack of center readiness and interest were identified by multiple key informants as challenges to expansion and implementation of RIMT. Rainbow In My Tummy was described as radical change that can be difficult for centers to implement all at once and easy to give up on. ***Forced or sudden implementation of RIMT*** was seen as a threat to successful implementation.

[23] Parent survey conducted by UNCA students in 2018
[24] UNCA student Verner Staff Survey 2018
[25] Directors Community of Practice Focus Group, May 2020

A grant report showed the differences from center to center: "We learned that while five centers self-selected participation in RIMT and have a desire to change their food service programs, not all are fully ready to embrace RIMT nor are they at the same starting place."[26] The research team surveyed the Directors Community of Practice participants and saw only limited interest in some aspects of RIMT. It is important to highlight again that this survey was during the COVID-19 pandemic and also this group may not be representative of child care center leaders across Buncombe County.



[27]

Figure 3: Figure reflects interest level of ECE directors surveyed in shared services.

Certain issues related to participating families were named as a challenging by key informants. ***High turnover of families*** can make consistent implementation of RIMT difficult, as can ***entrenched culture, established beliefs, behaviors, and traditions***. This is supported by the finding in a study that when ***families are unable or unwilling to provide healthy and diverse meals at home***, students are less likely to eat RIMT meals.[28]

From an equity standpoint, ***bias and stigmas can impact what is seen as healthy food*** and what are assumed to be barriers to healthy eating, making it difficult to communicate effectively and without judgement with families. Key informants also commented that there may be ways that the education components of RIMT are delivered that are more effective for some families than for others, another equity concern. Centers must also deal with health issues besides healthy eating among their staff and families. Anja Mayr, Health Coordinator at Verner, stated that "there are a lot of other health things that have to take priority".

[26] Mission Hospitals 'Community Benefit Grant Final Results Report 2012
[27] Directors Community of Practice Survey
[28] UNCA student Verner Staff 2018

Key informants mentioned many staff perceptions, behaviors, experiences and circumstances as threatening successful implementation or expansion. One key informant pointed out that ***limited time and budgets for training*** can make it hard to keep staff fully up to date on nutrition programming. Working in childcare means stressful, low paying jobs where ***workplace wellness and healthy eating are not always a priority***. ***Staff's own experiences with food insecurity may affect the ways that they model eating*** in the classroom. This is especially important to consider during the COVID 19 pandemic, when it is becoming especially clear that early child care providers are highly vulnerable to mental health challenges and food insecurity and have been faced with the dual challenges of caring not only for their own families, but other people's children as well.[29] Just as with families, staff turnover can be an issue in early childhood education, as can existing beliefs around food. ***New teachers may not be familiar with or on board with RIMT*** or with modeling the eating of healthy foods. Linda Simmons from The Texas Department of Agriculture saw "kid culture," or the ***assumption by staff that children will only eat certain foods***, as a huge barrier to successfully implementing RIMT and a contributor to staff push back.

The literature supports the suggestion that staff pushback may be a significant barrier to implementation of nutrition programming. One study found that of 13 centers who reported challenges in implementation of a nutrition and physical activity program, nine centers named staff issues as a barrier to change.[30] The same study found that, for staff, it was "difficult to get past fears about underfeeding children, and difficult for some participants to grasp what was an appropriately sized serving for a young child."[31]

Participating in and concerns over not meeting CACFP requirements was named as a barrier to participating in RIMT for centers. While CACFP can actually be a helpful tool for covering the costs of implementing RIMT, there are barriers to participation in this program. A 2018 paper named these barriers as:

- Centers directors are already administratively burdened;
- CACFP has too many regulations;
- The amount of paperwork required to apply;
- Inability to attend midday training;
- Lack of clarity about qualification requirements; and
- Difficulty in getting parents to complete required paperwork.[32]

[29] Scott, Krista. (2020) "Research Shows the Importance and Paradox of Early Childhood Care and Education." Robert Wood Johnson Foundation.
[30] Hunt, G. (2012). Enhancing or Impeding Nutrition and Physical Activity Best Practice in Early Childhood Education Centers: An Exploratory Study. p 26
[31] Hunt, G. (2012). Enhancing or Impeding Nutrition and Physical Activity Best Practice in Early Childhood Education Centers: An Exploratory Study. p 40
[32] Yates, D. (2018). Childcare Centralized Meal Service: White Paper on Benefits, Economics and Guidance for Implementation. p 3

Challenges around food production may also make it difficult for centers to implement and maintain RIMT. Many key informants and participants in the focus group, noted the ***lack of commercial kitchen, including refrigerator and food storage space*** in centers, as well as the high, upfront cost of installing a large kitchen. A RIMT grant report stated: "the single biggest problem with every kitchen is the lack of refrigeration for storing fresh and frozen foods rather than canned products. "[33] One key informant cited ***existing contracts with food vendors*** that would need to be renegotiated in order to participate in RIMT as a challenge. An additional concern around food is the affect that the COVID 19 pandemic has had. Genie Gunn shared that certain food supplies were limited as everyone has had to rely more heavily on pre-packaged foods for safety reasons. She also shared that because of the nature of supply and demand, ***food costs have increased*** during the pandemic.

For centers that may be interested in implementing RIMT through use of a catering company, key informants described a ***lack of catering companies*** in the area and the fact that existing companies are ***not trained in the requirements*** for feeding young children. Caterers also face financial barriers to working with early childhood centers. ***Meals need to be mass produced*** in order for companies to break even or make a profit. This is supported by a participant in the small focus group of ECE directors, who shared that their center tried to do a smaller food program, "optional and outsourced," but it hasn't been successful over the years because it's difficult for caterers to deliver food and meet guidelines while also making money for only about 30-40 participants.[34] Verner key informants, as well as the UNCA student study,[35] cited the fact that the ***small size of Verner's own kitchen*** makes it difficult to keep up with the demand across its three centers, and that they are not fully reimbursed for the cost of the program.

The Directors Community of Practice survey listed concerns they had with implementation or expansion of nutrition programs, many of which aligned with those that came out in key informant interviews: [36]

- Facilities- we don't have access to a full kitchen on site
- Cost of fresh, healthy food
- Cost of staff/time to plan menus, shop, and prepare fresh food
- CACFP requirements and/or paperwork
- Parent preferences (ex. family wants to pack food from home)
- Parents perceptions that children would not eat food offered at school and go hungry for the day
- Diversity of culture and way of eating of families

[33] Mission Hospitals 'Community Benefit Grant Final Results Report 2011
[34] Directors Community of Practice Focus Group, May 2020
[35] Staff survey conducted by UNCA students in 2018
[36] Directors Community of Practice Survey, May 2020

- Cost of purchasing a quality curriculum
- Time to train teachers and ensure implementation
- Teachers' attitudes and interests around healthy food and nutrition
- Families' attitudes and interests around healthy food and nutrition
- I feel that we do a lot of things to give information to children, staff and families
- Kitchen
- Continuous cost to use the program
- Corporate requirements

During the COVID 19 pandemic centers have found themselves in the position of having to operate in crisis mode and unable to innovate or even spare attention to large, complicated changes to their nutrition programs. It is unclear if interest and capacity for expanding nutrition programming will increase when the pandemic has subsided.[37]

What Works to Do Better

General Recommendations for Improvement

Key informants made many general recommendations for ways to successfully implement, expand and sustain RIMT. Key informants pointed out that in order for Verner to expand RIMT to other centers, Verner must "practice what they preach". This means ***focusing first and foremost on the mission*** of RIMT and not necessarily the revenue generating potential of the program. Key informants observed the need to ***improve culture and training at Verner*** around food, besides what is served through RIMT. It was also mentioned more than once that there are internal constraints that need to be addressed in order to ensure ***consistency of food and resources across Verner's three sites*** before expanding to other centers. Marcia Whitney voiced that it would be important that Verner not present a message of "fixing" other centers when pursuing expansion. Additionally, while several key informants acknowledged that the diversity of foods served is important to RIMT's ability to affect equity, others stated that there is still ***room for improvement to the ethnic diversity of menus***.

Key informants often made recommendations for additional research, evaluation, and putting more resources into RIMT, especially during the COVID 19 pandemic when expansion is difficult. For example, one suggested that ***making the program truly evidenced-based*** would make it more likely to be funded and promoted by early childhood nutrition governing bodies such as a CACFP and the USDA. Nearly all cited ***the importance of additional resources:*** time; money; and people, and these would be necessary to provide the research to make the program evidence based.

[37] Directors Community of Practice Survey

Recommendations around ***promotion of RIMT*** were mentioned frequently. Key informants proposed visiting interested schools or school districts to conduct taste tests of menu items so that administrators and teachers experience RIMT firsthand and see "this is what we feed our children. "[38] Creating videos of RIMT classrooms and kids actually eating the food that could be used in info sessions for interested centers or as promotion material at national conferences were additional ideas.

As mentioned previously, staff turnover can be a challenge, and new teachers may not be aware of Rainbow In My Tummy. Creating a ***RIMT orientation program*** for new teachers was recommended as a way to encourage buy-in from a teacher's first day and is supported by a 2018 staff survey.[39] Other informants and advisory group members suggested ***meaningfully orienting parents to the RIMT program***, raising their awareness and levels of involvement from the outset, so they feel part of it, and take pride and ownership in implementing practices at home with their children. Finally, it was suggest that ***questions about values and food be incorporated into hiring practices,*** though this may be problematic and could even inadvertently lead to discrimination.

A recommendation made by all key informants was the need for a ***dedicated Rainbow In My Tummy director or team*** to expand RIMT. This was also a recommendation from the UNCA 2018 staff survey and was "very prevalent" among their interviewees. Someone in this position would be "someone to hold it, to own it, to be focused on it. "[40] This person or these persons would be able to provide help to centers implementing RIMT and would be able to support Verner in its own execution of the program. It will be difficult for RIMT to expand without the extra support that a director would provide.

Key informants also suggested exploring the ***possibility of partnering or embedding RIMT within other organizations*** whose values align. A partner organization with a different mission and infrastructure focus from Verner could lead one of the models of expansion that will be presented shortly. One key informant suggested the prospect of selling the RIMT copyright to another organization, with expansion not coming *from* Verner, but still in partnership *with* Verner. Additional recommendations for pursuing partnerships with other organizations were to train schools to provide RIMT meals and to partner with food distributors such as MANNA Food Bank or Bounty & Soul in order to address whole families' needs.

Possible Models of Delivery

Several possible models of delivery for expansion of RIMT emerged from the key informant interviews as well as in background research. The research team has arranged the

[38] Melissa Wilson interview
[39] Staff survey conducted by UNCA students in 2018
[40] RIMT Feasibility Study Key Informant Interviews

following models roughly in ascending order from those requiring the least resources to the most complex, recognizing that within each model there are opportunities for easier and less resource-intensive implementation. This order is also reflective of ways that RIMT could be expanded broadly and across many centers to ways that it could be more deeply embedded and sustained in existing and new centers. Verner should consider further exploring and prioritizing the following models with key partners and pursing funding for support.

Printing/Publishing and Disseminating Rainbow In My Tummy Resources

Many key informants state that an easy way to expand is to simply provide centers with a collection of resources or a "Rainbow In My Tummy Book." This could include recipes, production guides, guidelines, and compliance documents. The materials could be shared or downloaded as a PDF or a partnership with a publishing company could be explored to formally print these. This model would be relatively easy to distribute to interested centers; however, it would require that centers have already established buy-in with their administration, staff, and families. It would also likely require that centers have existing resources to put a new nutrition program in place. From an equity standpoint, this would limit the number of centers that are able to take advantage of RIMT and would see a broad but limited group experiencing the benefits. It is also worth noting that many state's CACFP programs provide these resources for free, limiting the likelihood that centers would pay for such a book.

Providing Trainings to Interested Centers

Another model for expansion is for Verner or a partner organization to create training materials that could be provided to centers. Informants discussed how important it is that teachers internalize their nutrition training and communicate this information with families, and observed that this phenomenon seems to occur naturally as teachers interact with RIMT over time. This recognition acknowledges the importance of robust and continued teacher training and coaching. One key informant discussed the need to investigate more robust funding for teacher training. Verner currently provides trainings to staff annually, and this could be recorded as a relatively low production resource for orienting new staff and training other center staff.

Training materials could take a variety of forms. One key informant suggested that parent testimonials should be included, and this could be taken a step further to create peer-led training presentations for parents and staff. A staff interview saw the need for "more extensive education to parents/guardians of students so that healthy food habits can be replicated at home,"[41] and this peer-led training could be an answer to this need.

[41] Staff interview conducted by UNCA students in 2018

Another key informant saw the need for the development of a "Rainbow In My Tummy 101" training that could be used not only as an outreach tool but also to build buy-in in the early stages of implementation. More training topics that were seen as important to include in this model were nutrition and family style dining for teachers and culinary training. Culinary training could be for kitchen staff, or teachers and parents that are interested in making RIMT meals at home. Training for parents could improve their buy-in and engagement with the program and may advance who they integrate into their homes. These trainings could be created for a remote audience by recording them and/or making them available via web conference programs such as Zoom. Additionally, it was suggested that RIMT can partner with local education centers to provide more in-depth training and coaching.

The COVID 19 pandemic has shown the need for flexibility around training methods for RIMT and also provided an opportunity for exploring this model as particularly useful to consider, develop and pilot during the COVID-19 pandemic, since people are becoming more comfortable with online learning. Key informants especially emphasized the use of video platforms for remote training, and one suggested creating tutorials specifically for RIMT in a pandemic, including safely plating foods when family style dining is not allowed. She suggested the idea of creating training on assembling RIMT boxes containing recipes, food, and activities that could be delivered to families should centers have to close. Using remote training methods and virtual tools could reduce costs and increase reach even post-pandemic. This model could be explored in partnership with a local food box distributor, such as Bounty & Soul, with a focus specifically on providing nutritious food and education for families with young children.

Implementation Support

Another model for expansion would be for a lead organization to contract with centers to assist them with implementation of RIMT. This model was mentioned by multiple key informants. This could mean meeting centers where they are and assisting them to make the changes that they are interested in. Bronwen McCormick, former RIMT director, describes this as a process that would take 12-24 months of small, incremental changes that build on each other until a center is where they want to be. Linda Simmons emphasized the importance of celebrating any and all improvements to the nutrition quality of food being served in centers as elements of RIMT are rolled out. Key informants suggested that a "train the trainer" or peer support component would be useful in this model. Key informants envisioned this model as providing ongoing support, coaching, and technical assistance to centers. This model would be more labor intensive and would likely require a RIMT director, however it has the potential to widen RIMT reach to a variety of early childhood education centers.

Incentivizing changes at centers was a component of expansion suggested by one key informant, and this could be expanded to incentivizing changes among teachers and families as well. This is a component of many workplace wellness programs. Creating a tiered recognition

program for implementing centers is a model that Linda Simmons used when expanding Rainbow In My Tummy in Texas. She created a system of bronze, silver, and gold dependent on how much change a center had the capacity to make. For example "if you were going for a bronze level you'd have to have one meal that was family style, if you were silver you had to have two, and if you were gold all of them had to be family style. " She used regular remote sessions and learning opportunities, including for peer centers to connect to each other. She conducted teleconferences on a monthly basis when she was implementing RIMT in Texas and found great success with this method. These approaches would allow centers implementing RIMT to learn from and support each other, building a community around healthy eating in early childhood centers.

Deanna LaMotte, Early Childhood Systems Coordinator with Buncombe Partnership for Children, recommended a version of this model specifically targeted to smaller, home-based centers. She suggested that the COVID 19 pandemic has changed the landscape of early childhood education, with smaller centers appearing to be more resilient and parents more comfortable with smaller centers. This makes it important to explore RIMT expansion in small centers moving forward. An academic review of best practices for improving nutrition programs in early childhood centers found that in smaller centers it may be easier to create large improvements for food programming because the director may have more control over the menu and purchasing and be able to take nutrition workshops.[42]

Part of this implementation support model would ideally involve examination of centers' access to kitchens and equipment. Centers may need resources to assist in improving their kitchens or help with determining what parts of RIMT can be implemented without large investment in kitchens. This has been addressed in the past by RIMT, as stated in a 2011 grant report to Mission Hospital: "part of our kitchen assessment process helps centers identify these and other equipment needs and strategize ways to either replace equipment (short-term and long term), work with what they have, or adopt only the pieces of RIMT menu and recipe guide that their equipment can handle." It is likely that centers will need similar support to move forward with expansion of Rainbow In My Tummy.

[42] Hunt, G. (2012). Enhancing or Impeding Nutrition and Physical Activity Best Practice in Early Childhood Education Centers: An Exploratory Study. p 32

Farm to Preschool Partnerships

Creating partnerships to expand school-based gardens into production gardens capable of supplying produce to centers, procuring foods from local farmers and distributors, and partnering with farms to facilitate farm to preschool programing in support of RIMT is a model of expansion that deserves attention and is well researched. This recommendation is likely to contribute to more environmentally sustainable practices in centers[43] which in turn may improve the nutritional quality of children's diets. Research suggests that there is a relationship between eating a balanced diet and supporting practices that include organic, local, and environmental sustainability.[44] The research into this model does recognize that there are challenges and barriers to farm to preschool programing but also offers suggestions for overcoming them.[45]

Shared Services

A final model for expansion of RIMT is the shared services model. Deanna LaMotte envisions this model as a combined community kitchen and catering operation that could provide RIMT meals to multiple centers. This would also include the sharing of high-quality menus and guidance on food procurement. The models for these types of shared services exist and were described by one of the participants in the focus group: **"**a number of folks who do food in the context of shared services… they typically try to do it in the context of comprehensive offering, so they also manage the food program for you, and that way it doesn't cost you anything. "[46] This model of expansion has been researched and successfully implemented in different communities, with different strengths and challenges being identified.

<u>Strengths</u>

- Coordination of resources
- Meeting and tracking regulations
- Distribution of meals
- Food procurement- prioritizes food quality and cost[49]

[43] Pollan, H. (2019). Assessment of Centralized Kitchens for Multigenerational Populations in North Carolina A Case Study Approach

[44] Luecking, C. T., Mazzucca, S., Vaughn, A. E., & Ward, D. S. (2020). Contributions of Early Care and Education Programs to Diet Quality in Children Aged 3 to 4 Years in Central North Carolina.

[45] Pollan, H. (2019). Assessment of Centralized Kitchens for Multigenerational Populations in North Carolina A Case Study Approach

[46] Directors Community of Practice Focus Group, May 2020

- Can bring in extra income by leasing space (shared kitchen)[47]
- Support better local food procurement[48]

Challenges

- Intensive infrastructure, personnel, and time resources to meet nutritional and safety requirements[48]
- Necessary to produce a lot of meals to break even[48]
- Differences in food safety and nutrition requirements between programs can prevent full integration [48]

This model of expansion would requires more robust partnerships throughout the early childhood education system in Buncombe County, as research shows interorganizational collaboration is necessary for the model of a central kitchen to be successful and is most effective among agencies with similar missions, access to resources, and agreement. [49]

In addition to shared kitchen services, interest was expressed in the Directors Community of Practice focus group in shared services around CACFP administration. Creating shared services for CACFP would take the burden off of centers. Thus, there are several variations of a shared services model that could be helpful for improving nutrition programming across early childhood centers, regardless of which aspects of RIMT core components are included.

Conclusion

This feasibility study sought to understand if Rainbow In My Tummy meals and curriculum could be delivered to early childcare centers across Buncombe County, as well as to determine the core components and how these could be made sustainable for other centers. The research team has found the need for programming of this type, while also identifying that there are numerous challenges to overcome in expansion, particularly within the current COVID-19 crisis.

Verner may want to focus internally first and address some of the challenges identified across its own centers. As Verner launches its new early childhood center in the spring of 2021, this could serve as a space for piloting some of these possible strategies. For example, as staff are trained in RIMT procedures, this could be recorded and shared with other interested centers, a low-cost way of producing video tutorials and trainings. As supplies are purchased,

[47] Yates, D. (2018). Childcare Centralized Meal Service: White Paper on Benefits, Economics and Guidance for Implementation.
[48] Pollan, H. (2019). Assessment of Centralized Kitchens for Multigenerational Populations in North Carolina A Case Study Approach.

carefully recorded budgets and developed training materials could help other Centers implement this as well and may serve as the foundation for future grant proposal budgets.

Expansion efforts should start slowly, given capacity constraints and the lasting effects of the pandemic on early childhood centers and food supply chains. Stakeholders should consider different ways to introduce the core components of RIMT to interested centers gradually and incrementally as funding is sought for more extensive expansion efforts. Expansion should leverage partnerships with key stakeholders like Bounty & Soul and build on their existing services. An intern or coordinator could support some aspects of expansion until there are sufficient funds for a RIMT director. It is clear from key informants that a focus on advancing the mission of the RIMT programming and not on producing revenue could be critical to this process.

Finally, more rigorous evaluation and research would be valuable in order to make the program more robust and evidence-based and provide the opportunity for large and sustained funding. While the studies reviewed illustrated program benefits, there were numerous limitations, particularly with regard to the sample size and methodologies.

In conclusion, Verner leadership should more meaningfully explore the recommendations set forth in this report and prioritize possible strategies for leveraging strengths and overcoming potential challenges of implementation and expansion. They may also consider developing more robust partnerships with organizations that share values and may be well positioned to lead certain aspects of the key models they wish to pursue. It is clear that the Rainbow In My Tummy program serves children, families and centers across the community and can be critical in supporting the health and development of young children at a crucial time in their lives. Even during this challenging pandemic, focus on and support for stronger implementation and expansion of RIMT could benefit many young lives across Buncombe County and beyond.

Appendix A: Key Informant Interview

Protocol:

Welcome: Thank you for agreeing to take part in this interview. My name is Alex/Emma, and I'll be conducting the interview today.

Purpose: The North Carolina Center for Health and Wellness has been contracted by Verner to conduct a feasibility study of the Rainbow In My Tummy™ program (RIMT™). We are investigating how to potentially expand Rainbow In My Tummy services across North Carolina. Through conducting short structured interviews with key informants about this program, the team will better understand the implementation and operations of RIMT™, as well as possible ways that RIMT can be expanded. These interviews will inform nutrition programming services for families with young children in communities across the state as well as advocacy efforts for stronger service systems.

Confidentiality: We'd like you to answer questions as openly and honestly as possible. Anything you share that you would like to remain confidential will not be associated with your name.

Logistics: This interview will take approximately 45 minutes but could last up to 1 hour. I will take notes during the interview and with your permission I will also audio record our conversation. If there is anything that you say that you would like to remain confidential, please let me know, we will not associate it with your name. You may end the interview at any time. If at any time you decide that you do not want to participate in the interview you may withdraw and we will not use the information that you share with us.

Questions:

1. The purpose of RIMT™ is to change the food culture surrounding young children and families to establish a foundation for lifelong health. Does this seem important in our/your community? Why? **Probe for disparities*

2. Does RIMT advance equity in our community? If so, how?
3. How have you been part of or experienced RIMT programming? What changes have you seen it make for children, families or centers? **Probe for headline customer changes* Is RIMT more effective for some people rather than others?*

4. What aspects of the RIMT program might have contributed to these changes? **Probe for strategies**

5. The core components of RIMT include the following:
    a. *Building awareness and buy-in for key stakeholders;*
    b. *Recipes and compliance documents and training;*
    c. *Nutrition education for staff, children, and family members;*
    d. *Nutrition and family style dining training for teachers;*
    e. *Guidance on creating culture of health in the center environment;*

Which of these components might be the most important to achieve changes in food culture for young children?

6. Which might be the easiest to expand? Why?
7. Which might be hardest? Why? **Probe for barriers. Probe for teacher attitudes or cultural aspects, communities that have not historically and access to these types of programs?*

8. If RIMT were to expand across the state, how do you see that happening? **Probe for possible kinds of expansion, like a central kitchen to provide food, training for teachers and administrators, coaching for healthy culture and policies, partnering with other organizations to implement components of RIMT™, etc.* Would teacher training be useful? Training around center environments? Community kitchen?*

9. What might a simple way of expanding RIMT? Or what would your recommendation for a first step in expansion of RIMT be?
10. What partners might have a role to play?
11. Is there anything that you might change about the way that RIMT has been delivered? **Probe for equity/inclusion-is the way that RIMT is delivered biased?*

12. Thinking about the effects of the COVID 19 pandemic on families with young children and ECE centers, what might be a way to expand RIMT or nutrition services more generally?
13. Is there anything else you would like to share?

Appendix B: Summary of Responses from Directors Community of Practice Survey

These are summaries of the questions pertaining to RIMT or Nutrition Services:

1. Which of these services would you be willing to pay for if they were not free? (check all that apply)

Support for HR legal issues, help developing benefits packages, perhaps sharing a health care navigator so that child care providers can access health care- **57.1% (8)**

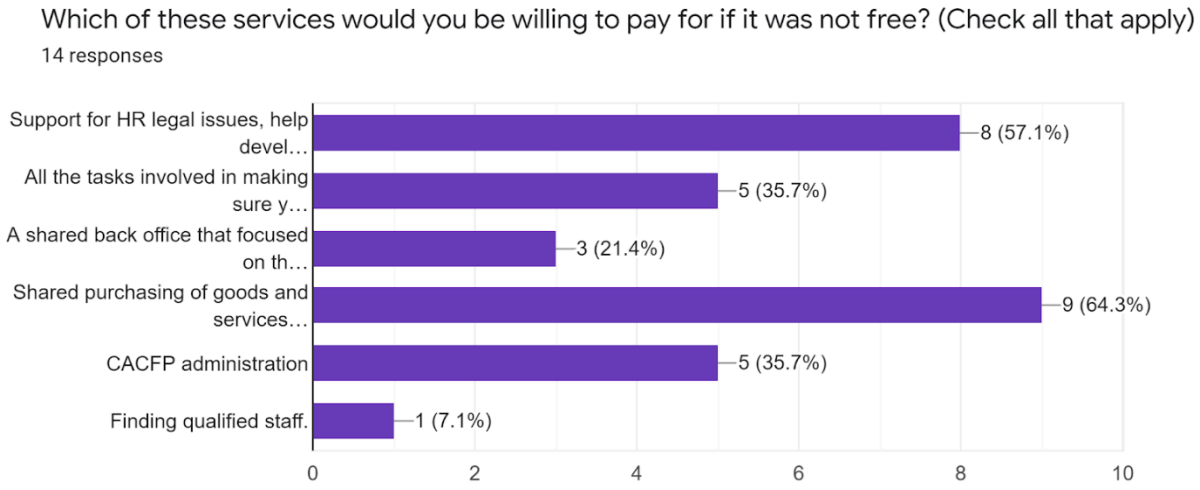
All the tasks involved in making sure your programs stay full, including marketing/recruiting children; completing enrollment paperwork (including subsidy applications); tracking enrollment trends and data- **35.7% (5)**

A shared back office that focused on the business side of ECE—billing families, collecting fees, calculating cost per child, monitoring cash flow- **21.4% (3)**

Shared purchasing of goods and services: food, supplies and equipment, shared contract for auditing, information technology, mulch, payroll services, etc. **64.3% (9)**

CACFP administration **35.7% (5)**

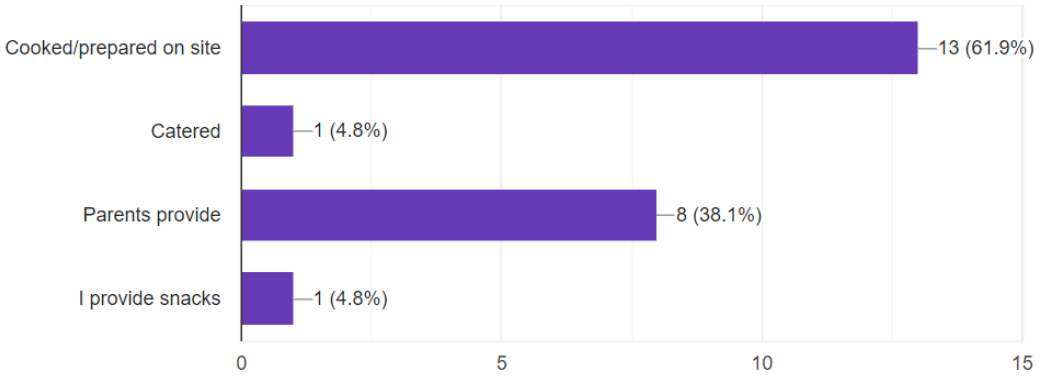
Pounding qualified staff **1.7% (1)**



2.

What is your current method of serving meals at your site?

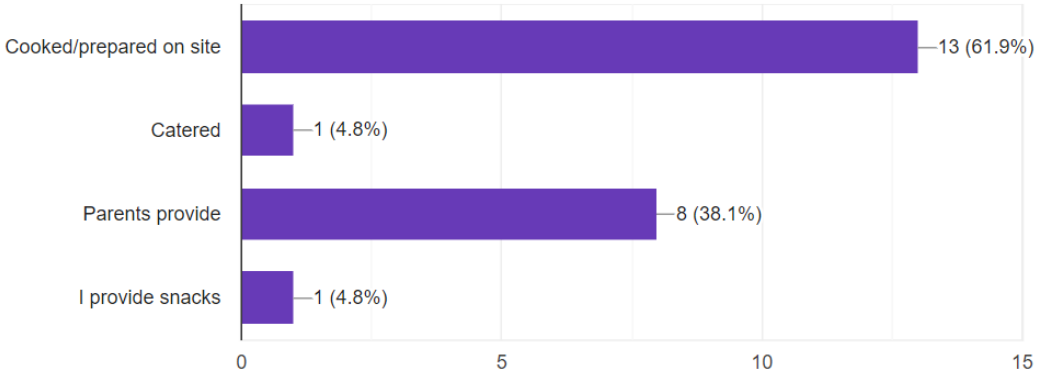
21 responses



3.

What is your current method of serving meals at your site?

21 responses



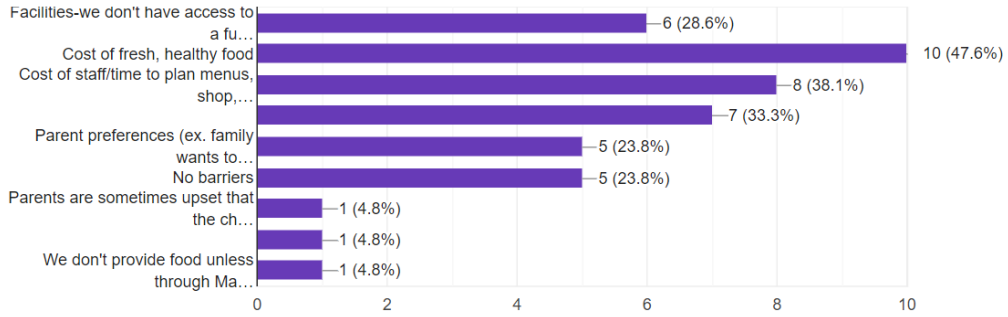
What benefits do you see in using a comprehensive nutrition enrichment program (like Rainbow in My Tummy) at your site?

Family style dining
Easy for parents. Healthy options. Family education
Well-fed children
none for my site
I don't know that we would because we already serve such wholesome meals, being always fresh, organic when possible and never frozen foods.
A healthy diet with fresh fruits and veggies for children who may not otherwise get fresh fruits and veggies.
Ensuring the children are eating a well balanced and healthy diet.
YES

exposure to healthier foods; teaching good eating habits; supporting good nutrition
We use CACFP and the children cannot bring their own food or drink in. I think it is great because everyone is receiving the same meal and no one is bringing something in that could cause an allergic reaction.
No sure
none
Nutritional Guidance
variety of foods children usually do not eat at home
I am not familiar with this program.
It gives a clear answer to questions of "Can I do this?" from parents and teachers
What we have works for us now.
At this time, I do not find that it would be beneficial. We do serve fresh fruits and vegetables and cook with fresh meat. However, many children eat very little of this, especially our older children. In our dining room we have nutritional activities for teachers to use to engage with children. We have given families nutritional information and fund snack and meal ideas. Most families are primarily preparing fast meals such as Chef Boyardee and chicken nuggets if they are not going through a drive through.
Nutrition value

4.

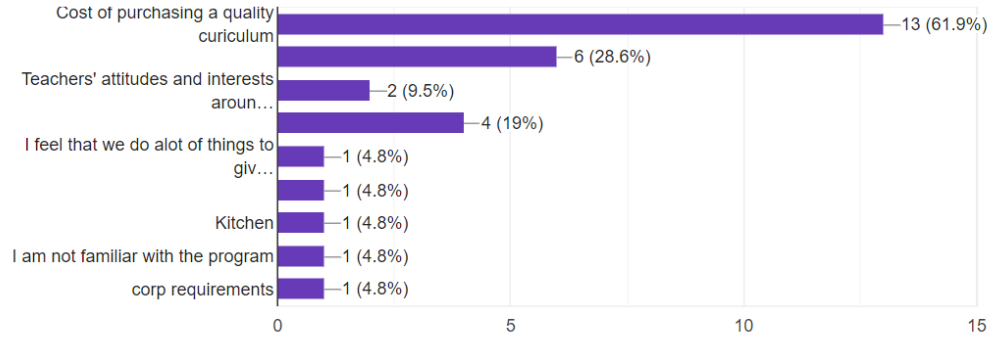
What are your biggest barriers to serving healthy meals to children daily (check all that apply)
Facilities-we don't have access to a full kitchen on-site: 6 (28.6%)
Cost of fresh, healthy food: 10 (47.6%)
Cost of staff/time to plan menus, shop, and prepare fresh food: 8 (38.1%)
CACFP requirements and/or paperwork: 7 (33.3%)
No barriers: 5 (23.8%)
Parent preferences (ex. family wants to pack food from home): 5 (23.8%)
Parents are sometimes upset that the children do not eat much and seem starved when they get home each day. 1 (4.8%)
Diversity of cultures and way of eating of families. 1(4.8%)
We don't provide food unless through Manna for families that have food insecurity. 1(4.8%)



5.

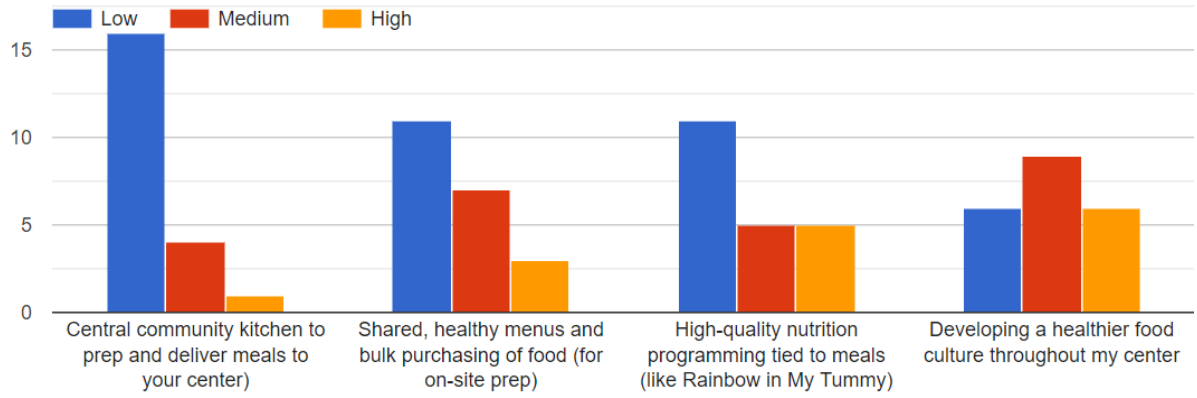
What are the biggest barriers to integrating a nutrition/food culture curriculum (like Rainbow In My Tummy) into instruction and practice? (Check all that apply)

Cost of purchasing a quality curriculum: 13 (61.9%)
Time to train teachers and ensure implementation 6 (28.6%)
Teachers' attitudes and interests around healthy food and nutrition: 2 (9.5%)
Families' attitudes and interests around healthy food and nutrition: 4 (19%)
I feel that we do a lot of things to give information to children, staff and families: 1 (4.8%)
Kitchen: 1(4.8%)
Continuous cost to use the program: 1(4.8%)
I am not familiar with the program: 1(4.8%)
Corp requirements: 1(4.8%)



6.

What is your INTEREST LEVEL in the following:



7.

Do you have any other comments about providing healthy food, modeling, and nutrition education, OR about Rainbow In My Tummy specifically?
No
No need to process the idea
While we do these things, it is hard to combat what children are used to eating at home.
We do provide very healthy meals every day. Our teacher model good eating habits in

front of the children. We encourage them to try things. But we throw away A LOT of food daily.
I would like some new menus that the kids would enjoy
I'm not familiar with Rainbow In My Tummy, so I don't have any questions about it specifically.
NO
Would like to have a central local connection for ordering of fresh items
I would like to explore this option with local food and farms. I am very passionate about healthy meals but the planning and implementation is tough. Organic is a very important concept to many and really kids should be eating that way.
no