

## ABSTRACT

Enteral formulas for pediatric patients over 1 year of age have been generally limited to commercially prepared products containing protein isolates, dextrans, oils and vitamins and minerals. However, parents and care givers have been increasingly requesting products that are considered to be more “natural”, “organic” or based on “whole foods”. Blenderized tube feeding products made at home may be difficult to prepare and pose issues with viscosity and risk of tube occlusion. Several new enteral products based on “whole foods” are commercially available and have been marketed to the pediatric population. Currently there is no database that allows the pediatric dietitian to compare these products and determine which formula would be most appropriate for his or her patient. The purpose of this project was to develop an online database of the commercially available “whole foods” or “organic” enteral products for pediatric nutrition professionals. Two graduate-level dietetics students developed an online spreadsheet of the commercially available enteral products that are advertised as “whole food blends”, “organic” or both. The enteral formulary is divided into 2 sections. The first describes the manufacturer and includes caloric density, macronutrient distribution, vitamin and mineral content, osmolality, cost per serving, and insurance code for reimbursement. The second section includes a picture of the product label, list of ingredients and additional information such as viscosity for tube feedings. This section also includes the amount of each product that would meet or exceed the DRI based on the child’s age. This spreadsheet was field tested by 2 pediatric RDN’s and was revised based on their feedback. The next step is to distribute this database to pediatric and WIC dietitians in Florida for feedback and final revisions. This formulary will then be distributed to the Pediatric Nutrition Practice Group for inclusion in their newsletter. This database will be updated as new products are developed. This online database would enhance discussions between pediatric dietitians and parents/caregivers, and would help with the selection of appropriate formulas. Having families actively engaged in the discussion allows for better understanding and adherence to the formula recommendations.

## INTRODUCTION

- The University of Florida (UF) Pediatric Pulmonary Center (PPC) is one of 6 Maternal and Child Health Bureau–funded interdisciplinary training programs designed to develop leaders in the care of children with chronic respiratory conditions.
- PPC’s also promote comprehensive, coordinated, family-centered, culturally sensitive systems of health care that serve the diverse needs of all families within their communities.

## BACKGROUND

TAdministering a mixture of food and liquid enterally has been a standard practice for thousands of years(1); however, it wasn’t until recently that this original method of providing nutrition support re-emerged in the form of “blenderized tube feeding”(2). Over the past couple of years, tube fed patients and families have expressed increased interest in feeding enterally with “real food” as opposed to using standard commercial formulas.(3) As the popularity of blenderized feeding increased, so did the number of commercial food-containing formulas on the market. Several companies have produced and are continuing to create commercial formulas made with whole foods or food extracts (e.g., Real Food Blends®, Functional Formularies®, Kate Farms®, and Compleat®).

## PURPOSE

The purpose of this project was to review and compare commercial blenderized and whole food enteral formulas available for children at least one year of age, determine the need for these products, and develop a formulary to be used by pediatric nutrition professionals.

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## METHODS

- Researched various commercial blenderized or “whole-food” formulas currently on the market and used information about each product to produce a formulary
- Created a survey on Qualtrics to obtain feedback on the formulary and to assess registered dietitians’ experiences and opinions regarding the use of commercial food-containing or blenderized enteral products.
- The survey consisted of 11 multiple choice questions, and once the questions were completed participants were prompted to view a formulary and supplemental document to provide feedback and suggestions for improvement.
- The results of this pilot test are to be used to enhance and make improvements to the formulary.

## CHARACTERISTICS OF RESPONDENTS

<u>n = 21</u>	<u>n = 21</u>
Outpatient dietitian (10)	Clinical pediatric dietitian (11)
Inpatient dietitian (9)	Clinical dietitian (8)
Both inpatient and outpatient dietitian (2)	Other (2)

## RESULTS

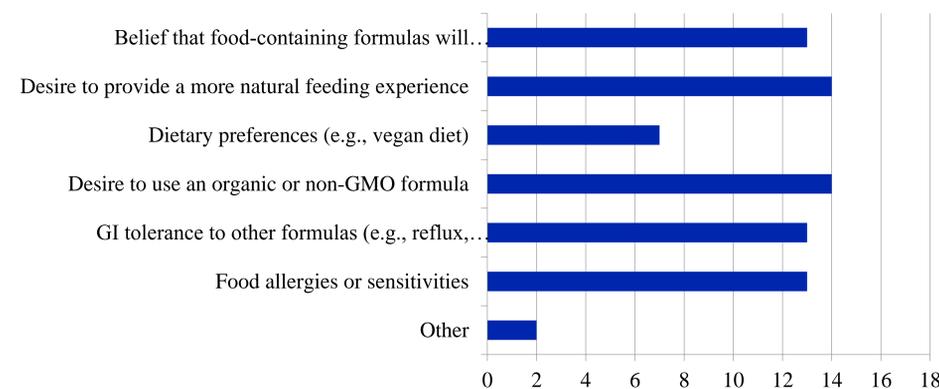


Figure 1. Reasons why patients/clients or their caretakers have requested commercial blenderized or food-containing enteral formulas.

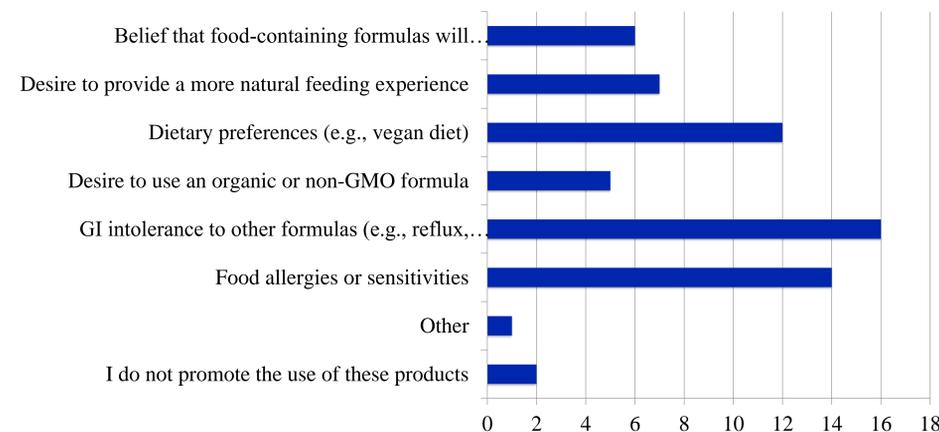


Figure 2. Reasons why RDNs might recommend commercial blenderized or food-containing enteral formulas to patients/clients.

## RESULTS

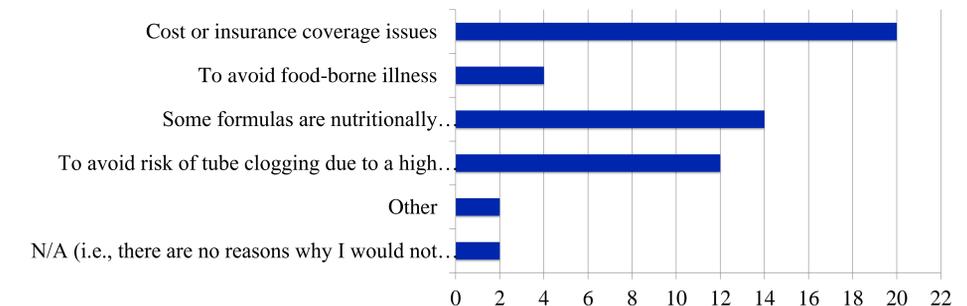


Figure 3. Reasons why RDNs might not recommend commercial blenderized or food-containing enteral formulas.

## WRITTEN FEEDBACK FOR FUTURE WORK

Do you have any suggestions for improving this database to make it more useful and/or user-friendly for healthcare providers?

- Contacting manufacturers to be able to fill in "unknowns" in the table (if this info is available)--for example, osmolality, cost, and volume needed for 100% DRI. Also the "To Compare" formulas could either be expanded on or removed. Just having a table of all of the food-based formulas is very helpful!
- Will you also include Kate Farms Complete products? Looks great!
- Vitamin D in IU, mixing preparation to avoid tube clogging
- I think it would be easier to follow if all nutrients were written per Liter instead of per container so that there is ease of use
- Looks great!
- This is very useful! Please check for accuracy - I quickly noticed some discrepancies (I only noticed because I had a patient on Jevity 1.2 today...) - %CHO is listed differently in the 2017-2018 reference guide (not sure if the formulation has changed), the osmolality is known (450), and the mL to meet RDIs is resource!! known (1000 mL). Besides that, this is extremely useful!
- This looks like a wonderful resource!
- None, this looks wonderful.
- It would probably be nice to have an additional page with more traditional formulas to see the comparison additional supplementation needed if product does not meet DRIs

## SUMMARY

- Constructive and valuable feedback was received from the respondents, and changes will be made to the formulary as appropriate.
- Of the 21 RDNs who completed the survey, 16 would find these formulary tools useful in his or her practice. The remaining dietitians do not find the need for the formulary due to the fact that they rarely or never have patients/clients who require enteral feeds.
- The formulary will be updated on a yearly basis, or as new commercial blenderized whole food enteral formulas are introduced to the market.
- Although the prices of these formulas may be higher than other commercially available enteral formulas, this formulary gives families and healthcare providers an opportunity to openly discuss all options for long-term nutrition support.

## REFERENCES

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- 2.Bobo E. Reemergence of Blenderized Tube Feedings. *Nutrition in Clinical Practice*. 2016;31(6):730-735. doi:10.1177/0884533616669703.
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