

# Hypoallergenic free amino acid formula utilization and home enteral nutrition formula selection shifts related to supply chain shortages

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## Background

Free amino acid (FAA) enteral formulas are commonly prescribed to patients with protein allergies or gastrointestinal intolerances. By providing the protein in the form of free amino acids, the potential for a protein to trigger an allergic response is eliminated or reduced. FAA formulas are higher in cost and not routinely available over the counter. When these products become unavailable, there are limited options for alternatives. A supply chain problem with FAA formulas results in increased stress and challenges for patients, caregivers, and prescribers.

## Purpose

The purpose of this study was to determine what category was most prescribed and ordered as an alternative to FAA formulas during a recent supply chain shortage, as well as determine what formula was used by those with the most common diagnoses seen.

## Methods

### Inclusion Criteria:

- Patients prescribed a FAA enteral formula and placed a refill for formula during a four-month defined time frame.

### Exclusion criteria:

- Patients prescribed a combination of intact protein formulas and FAA formulas.
- Patients who failed to place at least one refill during the period of examination.

## Outcome measures

- Prescription at the beginning of the formula supply chain shortage
- Prescription four months later
- Products ordered when placing monthly refill order

## Secondary outcome measures

- Relationship between formula at start of shortage to formula at end of study period
- Relationship between diagnosis and formula used at end of study period

## Results

- 774 patients prescribed FAA formula in February 2022
- 347 prescribed and using oral/enteral formula in June 2022
- 83% receiving hydrolyzed protein formula at end of study period
- 17% transitioned to intact protein formula at end of study period
- Of patients moving to intact protein formula, 46% changed to plant-based alternative
- Of patients transitioned to intact protein, feeding difficulties and dysphagia were most common diagnoses

# Conclusions

## Infants receiving FAA formulas are less likely to be transitioned to more intact protein formulas than older pediatric patients or adults

- With the emergence of peptide and intact protein plant-based formulas free of common allergens, there is an opportunity to successfully use these formulas as an alternative to FAA products in some patients.
- Further studies could evaluate infants, older pediatric, and adult patients with allergies on more intact protein formulas (extensively hydrolyzed, peptide or plant-based) to determine if patients could successfully be maintained on them.



Table 1. Patients ordering FAA formula

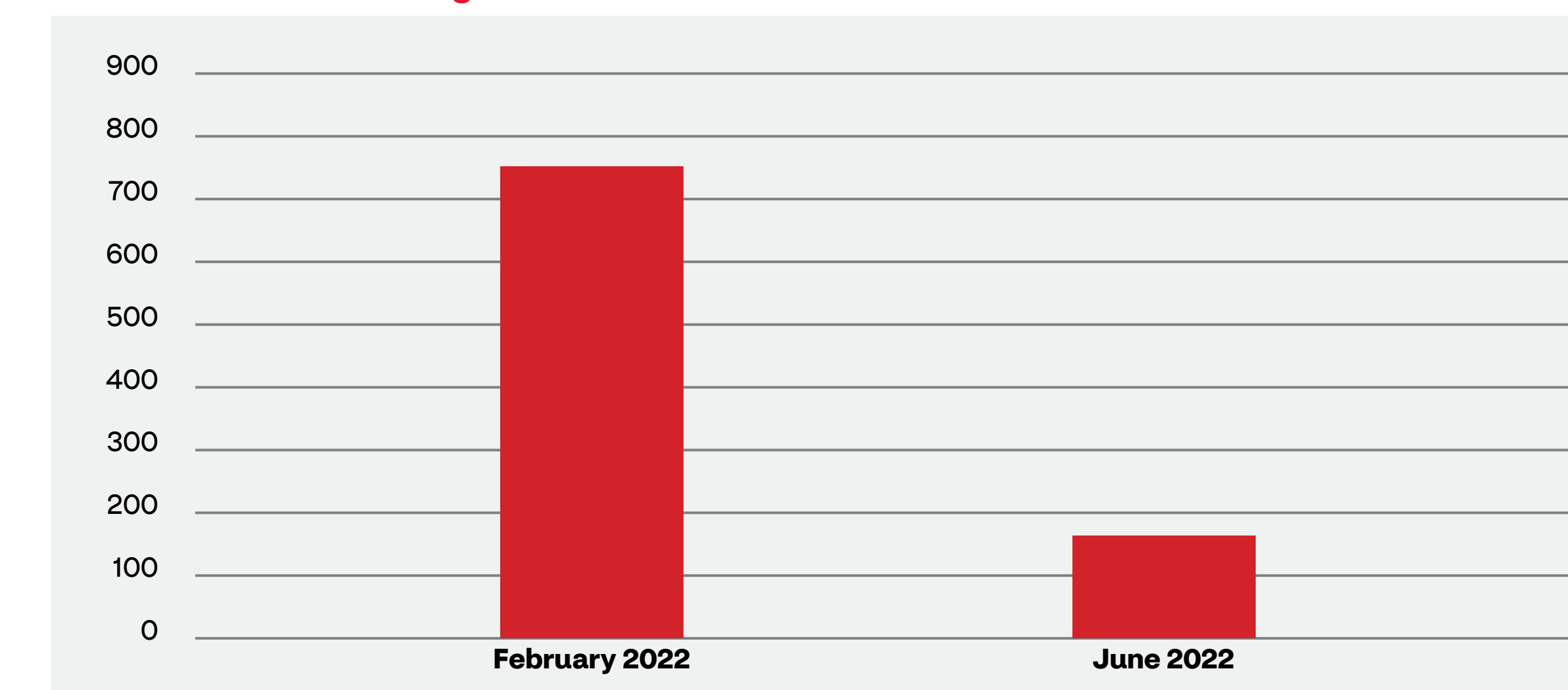


Figure 2: Enteral nutrition formula prescriptions — as of June 2022 (N=347)

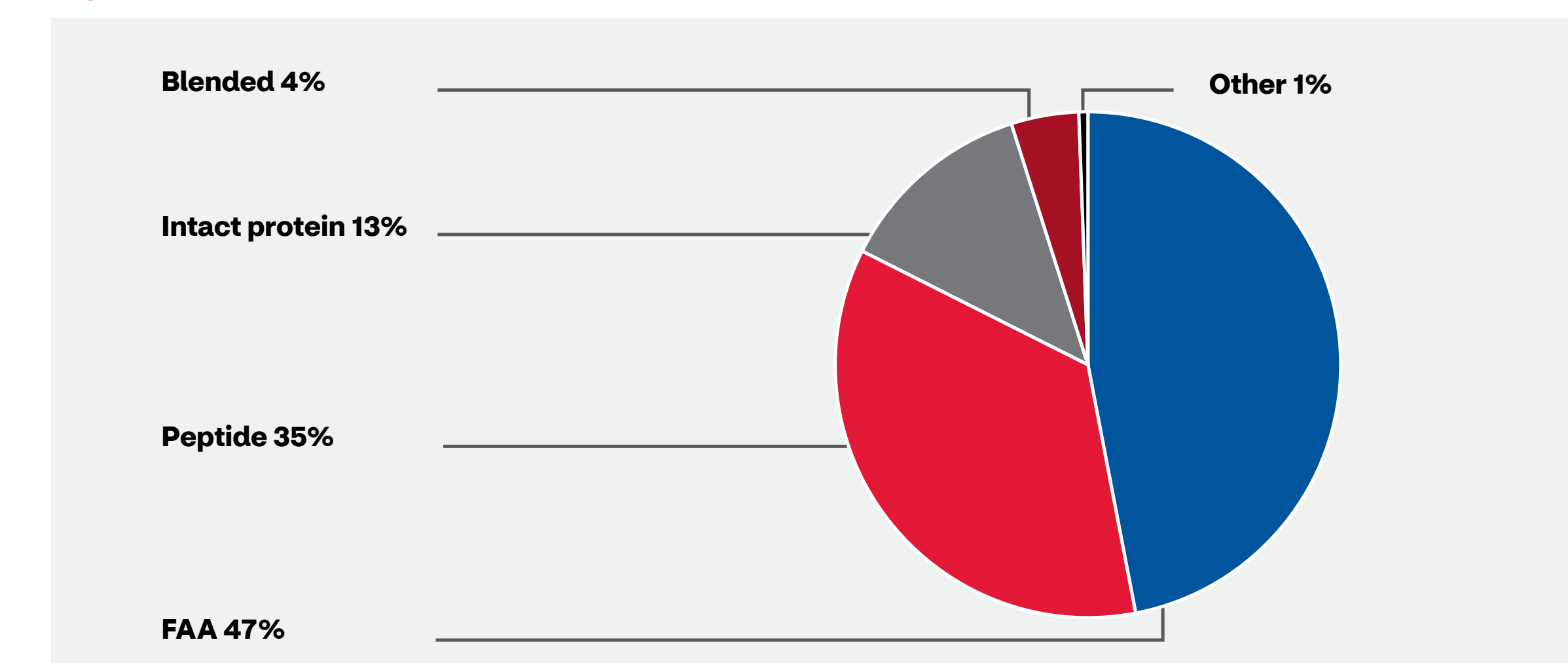


Figure 3: Number of patients on intact protein that moved to plant-based alternative (N=44)

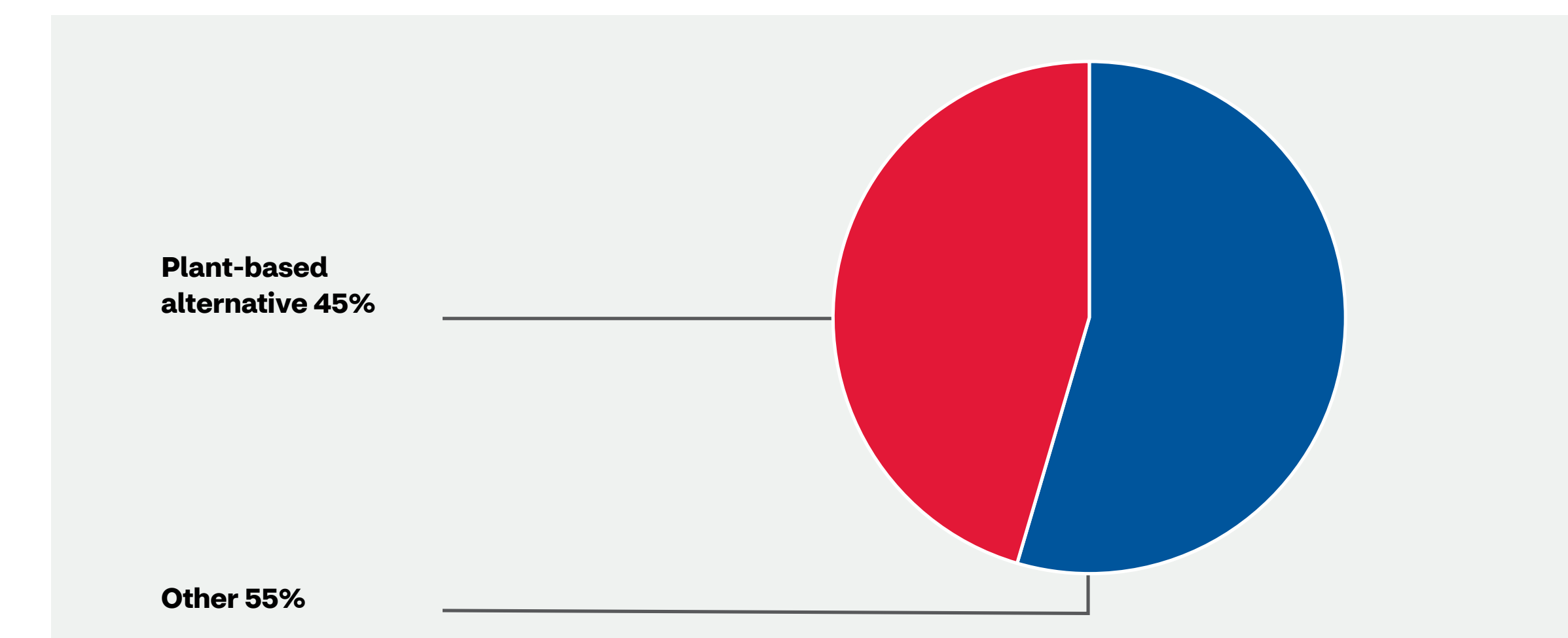


Table 2. Enteral nutrition formula prescriptions — as of June 2022 (N=347)

Infant Formula Category	n (%)
FAA	79 (23)
Peptide	23 (7)
Intact protein	4 (1)
Jr./Adult Formula Category	
FAA	84 (24)
Peptide	100 (29)
Intact protein	40 (12)
Blended tube feeding	15 (4)
Other	2 (<1)