Cost Savings Associated With Commercial Blenderized Tube Feeding Formulas in Post-Acute Care Pediatric Patients

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BACKGROUND

- Enteral nutrition (EN) is an important, life-sustaining treatment for individuals with functional gastrointestinal (GI) tracts who are unable to consume adequate food orally.[1-3]
- EN is often initiated in the hospital setting and may continue as part of post-acute care, as indicated and tolerated.[4]
- Healthcare professionals, patients, and caregivers are increasingly requesting tube feeding formulas with easily recognized ingredients and more real food.[1,5]
- Due to its clinical and economic benefits, the use of home enteral nutrition (HEN) as part of post-acute care is increasing in the United States (US).[6]
- Intolerance of enteral formulas can be a challenge in children receiving HEN and can lead to increased healthcare resource utilization (HCRU) and costs.[7]

OBJECTIVES

- To evaluate adjusted healthcare costs among pediatric patients receiving commercial blenderized tube feeding (CBTF) formula up to 168 days after hospital discharge.

METHODS

- Retrospective observational study using a nationally representative US claims data obtained from the Decision Resources Group Real World Evidence Data Repository, which covers 98% of US health plans, including medical and pharmacy claims.
- Inclusion criteria were patients age 1 to 14 years with a prescription for CBTF (Compleat® Pediatric Organic Blends, Nestlé HealthCare Nutrition, US) as sole-source nutrition for at least 7 days in post-acute care.
- Patients treated for any medical condition between 1 January 2018 and 30 December 2020 were included.
- The index date was defined as the date of hospital discharge. Patient characteristics, concomitant medication use, GI intolerance symptoms, HCRU, and cost of care were recorded within one year before discharge and up to 168 days post-discharge.
- Demographics, clinical characteristics, and concomitant medications were analyzed using descriptive statistics (median, mean, and standard deviations) and the appropriate statistical test (chi-square, t-test, or non- parametric test) at the alpha=0.05 level of significance to compare pre-index and respective post-index outcomes.
- Multivariate costs after adjusting for age, sex and Charlson Comorbidity Index (CCI) score were compared in pre-index (within 1 year before hospital discharge date) and post-index (last record at 28, 84, and 168 days post-discharge) periods.

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Commercial blenderized tube feeding formulas are associated with **significant cost savings in** post-acute care **pediatric patients.**

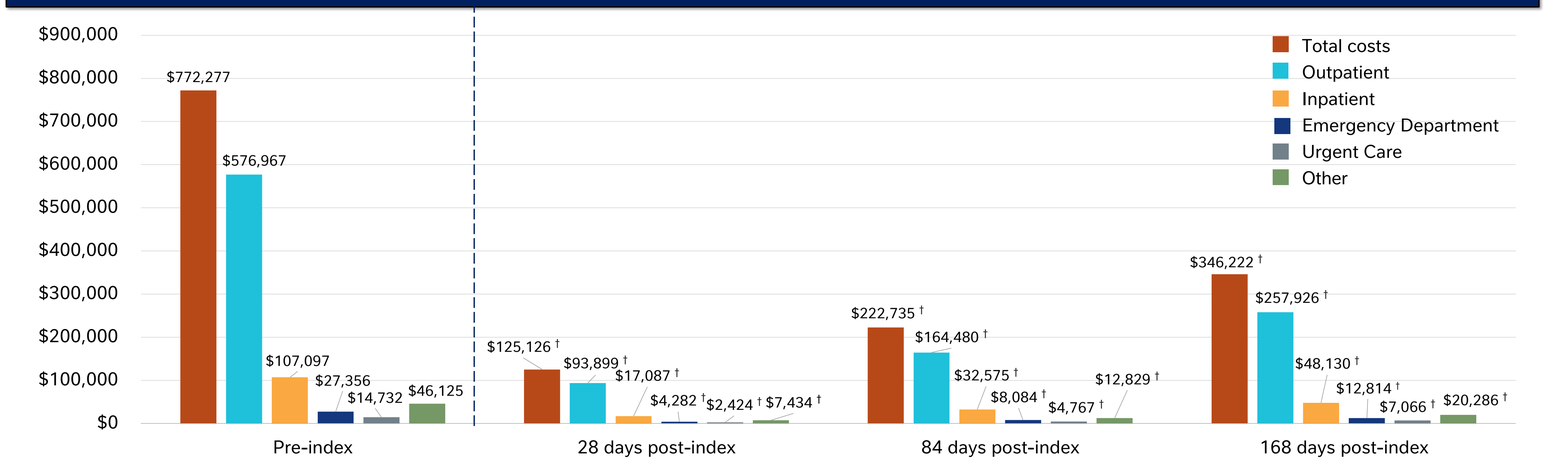

Figure 1. Cost Comparisons in Post-Acute Care Patients Receiving CBTF Formulas

† t-test (pre-index vs post-index); alpha=0.05 level of significance; CBTF, commercial blenderized tube feeding

RESULTS – PATIENT CHARACTERISITICS (TABLE 1)

- The study included 469 children using the CBTF formula in the post-acute setting (44% female; mean [standard deviation (SD)] age at index date 5.2 [3.32] years) from all US regions.
- Pre-index, the most common diagnoses were diseases of the digestive system (81%), respiratory system (78%) and congenital conditions (76%).
- The most common comorbidities were paraplegia and hemiplegia (28%), chronic pulmonary disease (28%), and cerebrovascular disease (7%).
- Among 277 patients (59%) with at least 1 additional comorbidity, 88% had a Charlson Comorbidity Index (CCI) score of 1 or 2 (mild comorbidity), 10% had a score of 3 or 4 (moderate), and 1% had a score of ≥5 (severe).
- The mean (SD) CCI score among patients with comorbidities was 1.6 (0.9).

RESULTS – ADJUSTED COSTS (FIGURE 1)

- Use of CBTF formula was well tolerated and associated with statistically significant reductions in GI intolerance and HCRU at post-index periods (data previously reported).[8]
- Results from a multivariate analysis revealed adjusted costs significantly decreased for outpatient, emergency department, inpatient, urgent and other visits at all post-index periods ($p<0.05$).
- There were significant reductions in total costs associated with these visits from $772,277 in pre-index to $346,222 at 168-days post-index.

Table 1: Patient Characteristics (N=469)

Mean age, years (SD)†		5.2 (3.32)
Gender, n (%)	Male	262 (56)
Comorbidities, n (%)‡	Paraplegia and hemiplegia	132 (28)
	Chronic pulmonary disease	131 (28)
Mean CCI Score (SD)†		1.6 (0.9)

Abbreviations: SD, standard deviation. † Calculated at hospital discharge. ‡ Assessed during the year prior to hospital discharge.

CONCLUSION

- Use of CBTF formula in post-acute care pediatric patients was associated with significant cost savings.
- The observed reductions in HCRU and costs indicate a potential role of CBTF in reducing economic burden both to patients and the healthcare system.