



BACKGROUND

- Short bowel syndrome (SBS) commonly leads to intestinal failure in children, requiring use of specialized enteral nutrition support.¹⁻⁴
- SBS is associated with increased colonic expression of PepT1, which can enhance the absorption of small protein peptides, promote intestinal growth and stimulate the release of hormones that improve intestinal motility and secretion.⁵ Ultimately, these adaptations can lead to better gastrointestinal (GI) tolerance and overall gut health.

OBJECTIVE

- To assess the clinical outcomes, healthcare resource utilization (HCRU) and related costs in enterally fed children with SBS who were prescribed a 100% whey, peptide-based EN formula in post-acute care settings.

METHODS

- Retrospective study using nationally representative US claims data from the Decision Resources Group Real World Evidence Data Repository between January 2013- July 2023 .
- Inclusion criteria:
 - Children (1-17 years) in post-acute care setting, prescribed 100% whey peptide-based formulas (w-PBF), [Peptamen[®] Junior formulas, Nestlé Healthcare Nutrition, US], as sole-source nutrition for at least 7 days.
- Data collected:
 - Patient characteristics, GI intolerance symptoms (abdominal distention, abdominal pain, constipation, diarrhea, flatulence, gagging & retching, and nausea & vomiting), HCRU and costs of care.
- Study definitions:
 - Index date was defined as date when patients were initiated on w-PBF. Pre-index period was within 1 year to index date. Post-index periods were 1-, 3-, 6- and 12-months post-index.
- Outcomes in pre- and post- index periods were compared using appropriate statistical tests, with results presented as mean standard deviation (SD) or N (%).

RESULTS - PATIENT CHARACTERISTICS

- 145 children (52% male; mean [SD] age 5.6 [3.9] years) from all US regions,
- 94% with ≥1 additional comorbidity, most frequently congenital malformations (61%), GI conditions (52%) and developmental delays (27%),
- Overall mean [SD] Pediatric Comorbidity Index (PCI) weighted score was 5.2 (3.6); 57% of patients with PCI ≥4.

RESULTS - GI INTOLERANCE SYMPTOMS (FIGURE 1)

- After initiating w-PBF and compared to pre-index:
 - Significantly fewer patients experienced overall GI intolerance symptoms at all post-index time points (all p≤0.05),
 - Significant reductions in abdominal distention, diarrhea and nausea & vomiting were observed at all post-index time points (all p≤0.05),
 - Reduction of abdominal pain and flatulence were observed up to 6 months post-index (p≤0.05).

RESULTS - HCRU AND ASSOCIATED COSTS

- Significantly fewer patients required inpatient visits at all time points post-index versus pre-index (p<0.05). Mean number of visits, including emergency room, outpatient, inpatient, and total visits, significantly decreased up to 6 months post-index (p≤0.05). Data not shown.
- Reductions in HCRU resulted in significant costs savings associated with all types of healthcare visits up to 12 months post-index compared with pre-index. (p<0.001) (Table 1).

Significant reductions in GI intolerance symptoms, HCRU and Costs were observed in children with short bowel syndrome receiving 100% whey peptide-based enteral formula

Figure 1. Gastrointestinal Intolerance Among Post-Acute Care Pediatric Patients with Short Bowel Syndrome Receiving 100% Whey Peptide-Based Formulas

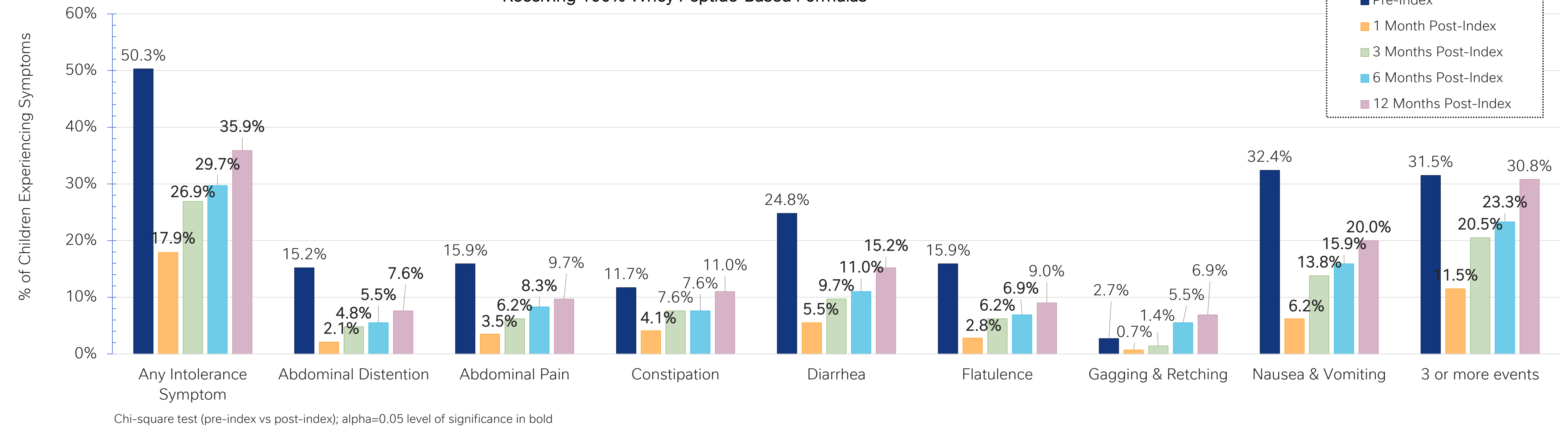


Table 1. Healthcare Costs Among Post-Acute Care Pediatric Patients with Short Bowel Syndrome Receiving 100% Whey Peptide-Based Formulas

Place of Service	Pre-index	1 Month Post-index		3 Month Post-index		6 Month Post-index		12 Month Post-index	
	Costs (\$)	Costs (\$)	p [†]	Costs (\$)	p [†]	Costs (\$)	p [†]	Costs (\$)	p [†]
Emergency Department	\$8,118	\$630	<0.001	\$1,932	<0.001	\$3,913	<0.001	\$6,734	<0.001
Inpatient	\$71,598	\$5,164	<0.001	\$14,825	<0.001	\$30,901	<0.001	\$59,395	<0.001
Outpatient	\$798,460	\$69,529	<0.001	\$217,220	<0.001	\$421,168	<0.001	\$662,372	<0.001
Urgent Care	\$1,274	\$104	<0.001	\$334	<0.001	\$552	<0.001	\$1,057	<0.001
Telemedicine	\$2,492	\$185	<0.001	\$562	<0.001	\$1,188	<0.001	\$2,067	<0.001
Other	\$17,045	\$1,163	<0.001	\$3,440	<0.001	\$6,852	<0.001	\$14,140	<0.001
Total	\$898,988	\$76,775	<0.001	\$238,313	<0.001	\$464,573	<0.001	\$745,766	<0.001

[†]Adjusted costs obtained using multivariate GLM model adjusted for age, gender, PCI score (pre-index vs post-index); alpha=0.05 level of significance in bold

CONCLUSIONS

- Use of pediatric 100% whey peptide-based formulas in children with SBS was well tolerated and associated with significant reductions in GI intolerance symptoms up to 12 months following formula initiation.
- Reductions in healthcare visits resulted in significantly lower healthcare costs.
- These clinical and health economic benefits support the use of w-PBF formula for children with SBS requiring enteral nutrition support in a post-acute care setting.