

# Describing Pharmacist-Led Nutrition Support Interventions Under a Collaborative Practice Agreement in the Home Infusion Setting

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## BACKGROUND

- Advancements in technology and clinical practices have led to the development of home parenteral nutrition (HPN) programs, revolutionizing the field of clinical nutrition.<sup>1</sup>
- Patients on HPN require specialized care due to the complexity, high cost, and high-risk nature of parenteral nutrition (PN) therapy.
- The nutrition support pharmacist (NSP) is recognized by the American Society for Parenteral and Enteral Nutrition (ASPEN) as a crucial member of the multidisciplinary team for the specialized care of patients receiving PN.<sup>2-3</sup>
- There is a lack of data describing the role of the NSP within a nutrition support team in the HPN setting. Further, pharmacist management of HPN within the scope of a Collaborative Practice Agreements (CPA) has not yet been investigated.
- Our organization established a shared service model with a CPA between NSPs from a health-system-based home infusion pharmacy and a hospital-based digestive disorders clinic (DDC).
- This innovative model enabled our NSPs to address the complex needs of patients receiving HPN and introduced a clinic-embedded role for home infusion pharmacists to manage HPN patients. This study aimed to better understand the contributions made by NSPs within this novel approach and highlight the skill set a pharmacist brings to a nutrition team.

## PURPOSE

- The purpose of this quality improvement study was to comprehensively identify and categorize the types and frequencies of NSP interventions, while operating under a CPA in the home infusion setting. The results of this study will be utilized for continuous quality improvement efforts within our institution.

## METHODS

### STUDY DESIGN

- Single-center retrospective observational study
- Approval for this study was granted by the Institutional Quality Review Board
- Data was collected and characterized for DDC patients on service from March 1, 2023 to August 31, 2023
- Data was obtained from electronic health records and was de-identified
- Data was analyzed using descriptive statistics

### INCLUSION CRITERIA

- NSP documented encounters for patients who received PN or customized hydration

### EXCLUSION CRITERIA

- Encounters that lacked patient review or interaction

## RESULTS

### INTERVENTIONS MADE BY NSPS:

- Laboratory monitoring and ordering
- Home parenteral nutrition or custom hydration formula management
- Other intravenous medication therapy management
- Patient counseling and education
- Intravenous line monitoring
- New therapy recommendations
- Escalations to a higher level of care (when applicable)

## RESULTS

- A comprehensive analysis of 287 patient telephone encounters within the six-month study period was assessed. 270 encounters met eligibility and comprised a total of 58 patients. A total of 723 interventions made by the NSPs were identified and categorized according to type.
- A total of 263 (97.4%) encounters consisted of at least one intervention made by the NSP. Documented encounters with a total two interventions encompassed 133 (49.3%) encounters. Finally, 126 (46.6%) encounters involved three or more NSP interventions.
- PN formula adjustments constituted 21.6% of all interventions conducted

Table 1. Baseline Characteristics of HPN Patients

Patient Characteristics (n = 58)	
Age, years*	54
Male sex assigned at birth, n (%)	17 (29)
BMI^	22
Primary Indication for PN	
Dysmotility, n (%)	5 (8.6)
Fistula, n (%)	4 (6.9)
Malabsorption, n (%)	2 (3.4)
Obstruction, n (%)	6 (10.3)
Pancreatitis, n (%)	8 (13.8)
Post-operative complication, n (%)	3 (5.2)
Short bowel syndrome, n (%)	24 (41.4)
Other, n (%)	6 (10.3)

\* Presented as a mean

^ Mean BMI when accurately documented in the patient record

Figure 1. No. of Interventions Made By Primary Indication

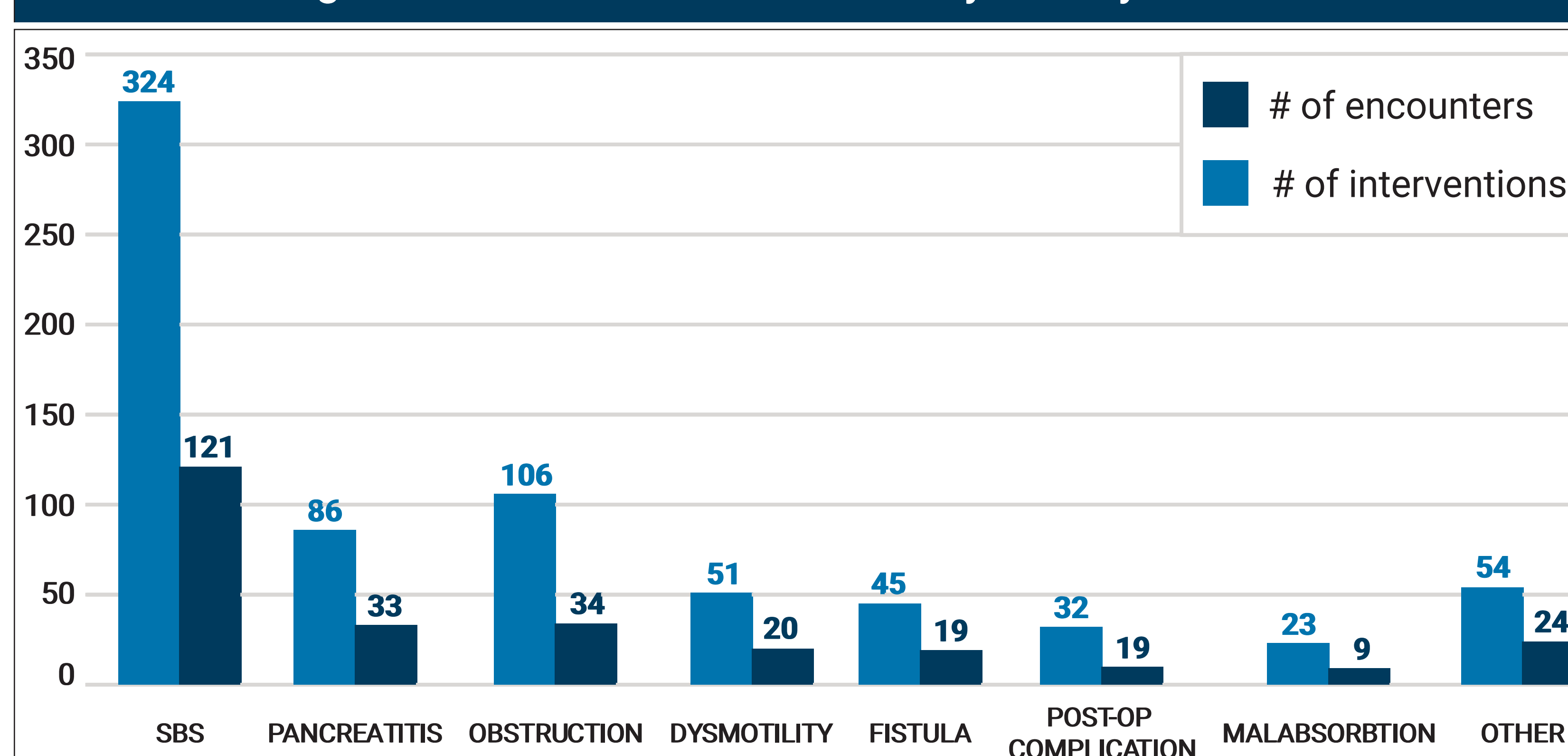
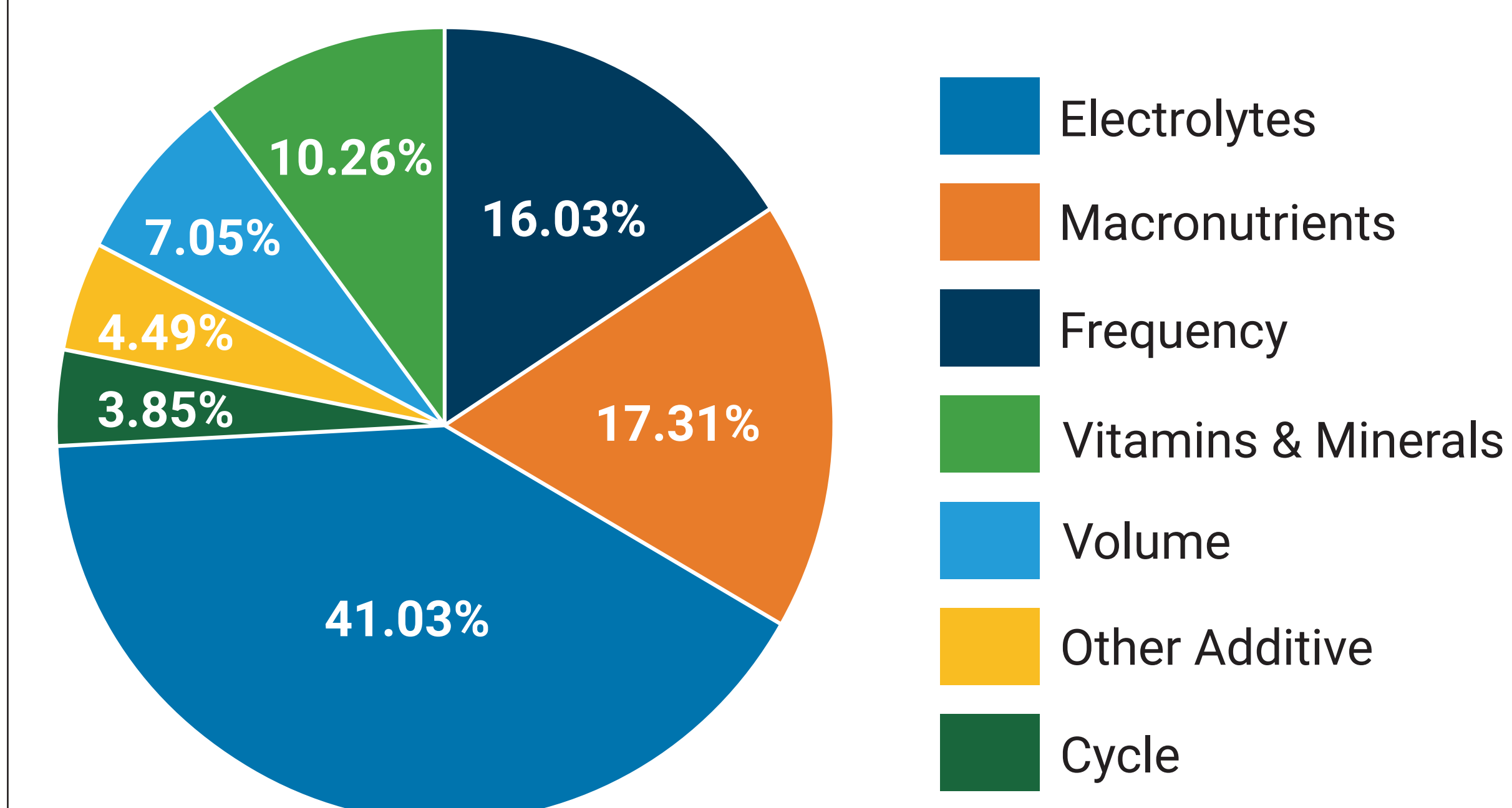


Table 2. No. of Interventions Made Per Patient Encounter

# of Interventions	# of Encounters	% of Encounters
0	7	2.6%
1	4	1.5%
2	133	49.3%
3	79	29.3%
4	29	10.7%
5	14	5.2%
6	2	0.7%
8	2	0.7%
<b>TOTAL</b>	<b>270</b>	<b>100.0%</b>

Figure 2. Types of Formula-Related changes



## DISCUSSION

- The role of NSPs in the context of HPN under a CPA is an important yet understudied area of patient care. In our study, the role of the home infusion pharmacist was expanded under a CPA to support the independent management of HPN patients. This study provides crucial insights into the specific contributions made by NSPs in this novel patient care model. The results of this study also demonstrated the varying levels of pharmacist involvement in managing the complexities of PN therapy within this specific patient population.
- Limitations of this study include:
  - Small sample size
  - Retrospective observational design
  - Some encounters that were included lacked patient interaction and were only informational in nature

## CONCLUSION

- The findings of this study not only contribute to current practice recommendations but also identify the need for continuous quality improvement efforts in managing HPN patients. Given the high-risk, complicated, and costly nature of PN therapy, our innovative CPA model can provide a basis for providing specialized care and optimizing patient outcomes.

## REFERENCES

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