

Contents

	Introduction	ix
1	Parenteral Nutrition Competency	1
	Vocabulary.....	1
	Defining the Importance of Parenteral Nutrition Competency.....	1
	Designing Institutional-Based Competency Training and Assessment	6
	Implementing Parenteral Nutrition Competency	14
2	Adult Cases	19
	Introduction	19
	Vocabulary.....	19
	Adult Case 1: Female (Age 36) With Intestinal Obstruction	21
	Day 1	21
	Day 2	28
	Adult Case 2: Male (Age 46) With Enterocutaneous Fistula	34
	Day 1	34
	Day 2	42
	Day 3	48
	Adult Case 3: Female (Age 48) on Home Parenteral Nutrition With Staphylococcus Infection.....	55
	Day 1	55
	Day 2	63
	Day 5	69
	Adult Case 4: Female (Age 61) With Intestinal Obstruction	75
	Day 1	75
	Day 2	84
	Day 3	91

Adult Case 5: Female (Age 37) With Failure to Thrive	97
Day 1	97
Day 2	104
Day 3	109
Day 4	114
Adult Case 6: Male (Age 59) With Possible Femoral Artery Dissection, Acute Respiratory Failure, and Multiple Fractures	115
Day 1	115
Day 2	123
Day 4	129

3 Pediatric Cases 135

Introduction	135
Vocabulary.	135
Pediatric Case 1: Infant With Possible Central Line–Associated Bloodstream Infection	137
Day 1	137
Day 2	144
Pediatric Case 2: Teen With Intestinal Obstruction.	151
Day 1	151
Day 2	158
Pediatric Case 3: Infant With Congenital Heart Disease.	164
Day 1	164
Day 2	172

4 Neonatal Cases 179

Introduction	179
Vocabulary.	179
Neonatal Case 1: 23-Week Gestational Age Neonate.	181
DOL 2	181
DOL 4	191
DOL 10	198

Neonatal Case 2: 35-Week Gestational Age Neonate With Gastroschisis. 207
 DOL 2 207
 DOL 3 218
 DOL 24 225
 DOL 150 234
Neonatal Case 3: 39-Week Gestational Age Neonate With Heart Condition. 237
 DOL 2 237
 DOL 4 249

5 Home Cases 261
 Introduction 261
 Vocabulary. 261
 Home Case 1: Adult With Enterocutaneous Fistula 263
 Home Case 2: Adult Female With Failure to Thrive 282
 Home Case 3: Teen With Intestinal Obstruction 295
 Home Case 4: Infant Born With Gastroschisis. 311

Appendix A: Equations. 329

Appendix B: Tables and Exhibits. 333

Appendix C: Terms. 367

Introduction

Parenteral nutrition (PN) is a complex nutrition support modality for patients with inadequate gastrointestinal function. Many reasons account for its complexity, including the use of multiple components, the creation of a safe and stable formulation, and the management of clinically challenging patients. Prescribing and ordering PN is a process that should be performed by experienced clinicians who have demonstrated the necessary proficiency and competence. A PN order completed by an inexperienced clinician may result in an unsafe PN formulation with the potential to cause serious patient harm.

The knowledge and skills to prescribe and order PN are gained through a combination of content mastery and experiential activities. There is overlap between the terms *prescribe* and *order*, so for the purposes of this text, the terms *order* or *ordering* will be used and should be understood to include both prescribing and ordering. This workbook is intended to augment PN knowledge with experience. It consists of various fictitious adult, pediatric, and neonatal patient cases requiring PN. Important clinical information is provided, combined with key questions and practice exercises to guide you through the PN order writing process. Appendices A–C provide essential information to assist with completing PN orders. A case-based approach is an established teaching technique used across disciplines that enables application of knowledge to real-world scenarios, reinforcing and augmenting the learned content. Lastly, recommendations and guidance to facilitate competency development in PN ordering as well as home case examples are also included.

Reviewing the following resources on safe PN prescribing and ordering and PN ordering competency will enhance your experience with this workbook:

American Society for Parenteral and Enteral Nutrition. *Appropriate dosing for parenteral nutrition: ASPEN recommendations*. 2019. <https://www.nutritioncare.org/PNDosingRecommendations>

Ayers P, Adams S, Boullata J, et al. A.S.P.E.N. parenteral nutrition safety consensus recommendations. *JPEN J Parenter Enteral Nutr*. 2014;38(3):296–333.

Boullata J, Gilbert K, Sacks G, et al. A.S.P.E.N. clinical guidelines: parenteral nutrition ordering, order review, compounding, labeling, and dispensing. *JPEN J Parenter Enteral Nutr*. 2014;38(3): 334–377. <https://doi.org/10.1177/0148607114521833>

Guenter P, Boullata JI, Ayers P, et al. Standardized competencies for parenteral nutrition prescribing: the American Society for Parenteral and Enteral Nutrition model. *Nutr Clin Pract*. 2015;30:570–576.

How to Use This Workbook

Sharpen your PN ordering skills by completing these adult, pediatric, and neonatal cases. Each chapter is independent of the others so that you can practice and complete single or multiple cases depending on your practice setting and interest. The appendices provide further information to support the concepts and practices exemplified in the cases.

Look for the following symbols to guide you throughout the workbook:



This symbol denotes the key background information and patient scenarios needed for you to complete the practice exercises.



Now, you try it! Write in your answers. If you need extra practice, make a copy of the sheet before writing on it.



Shine some light on the answers with the conveniently placed answer key.

The answers provided are for educational purposes and could vary depending on the medical status of the patient and facility or site-specific factors (eg, clinician resources, pharmacy practices). The answer key may provide a range of values or several options with explanations, thus offering a comprehension strategy that will allow you to connect new information with prior knowledge, verify predictions, and help clarify meaning and interpretations.



Vocabulary

Competence/competency

Order/ordering

Parenteral nutrition (PN)

Prescribing