

Appropriate Utilization of Multi-Chamber Bag Parenteral Nutrition

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1

Disclosures

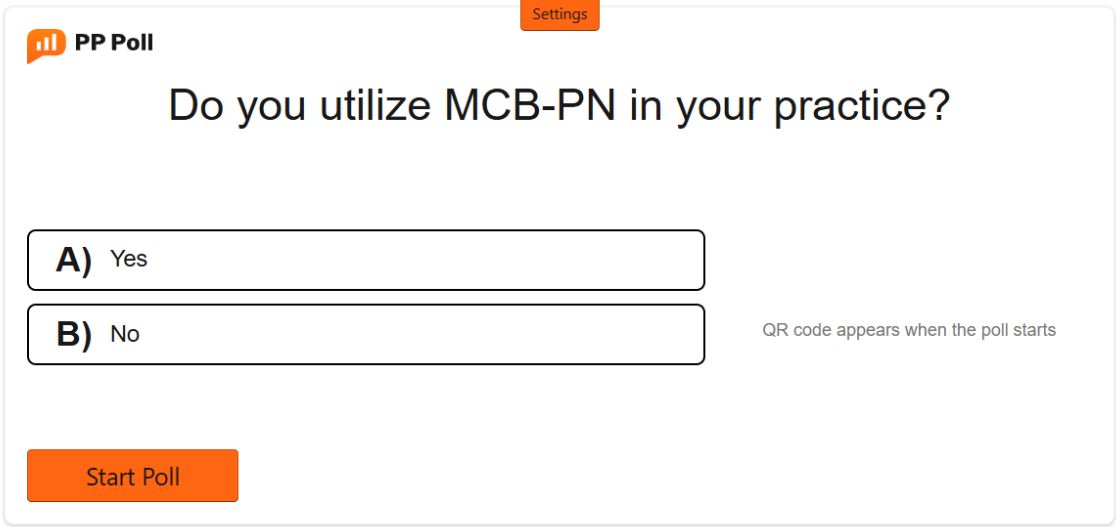
- American Regent: Consultant
- B Braun: Consultant
- Baxter: Consultant
- Fresenius Kabi: Consultant, Speaker

2

Objectives

- Summarize recent parenteral nutrition surveys and the utilization of multi-chamber parenteral nutrition (MCB-PN) in the United States.
- Identify candidates appropriate for MCB-PN.
- Develop strategies for the appropriate management of patients receiving MCB-PN.

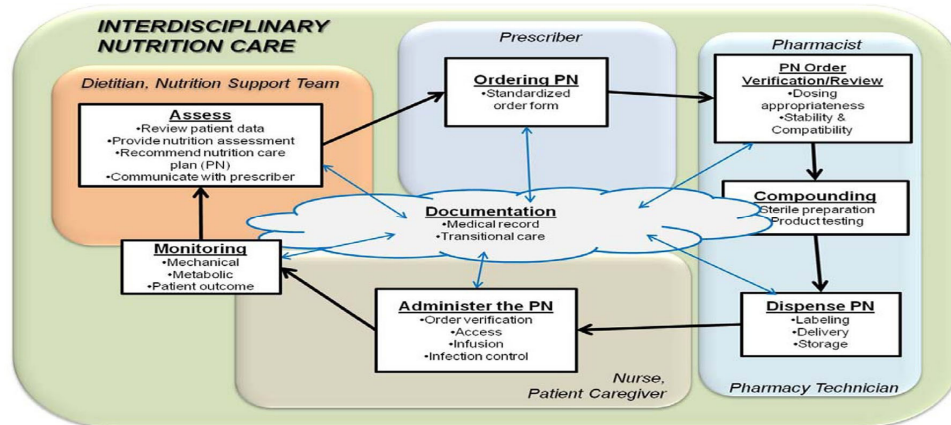
3



The screenshot displays the PP Poll application interface. At the top right, there is a "Settings" button. The main header area includes the "PP Poll" logo and the poll question: "Do you utilize MCB-PN in your practice?". Below the question, there are two response options: "A) Yes" and "B) No", each enclosed in a rectangular box. At the bottom left, there is an orange "Start Poll" button. On the right side of the interface, a note states: "QR code appears when the poll starts".

4

Parenteral Nutrition Process



Boullata JJ JPEN J Parenter Enteral Nutr. 2012;36:10-13S

5

DOI: 10.1002/jpen.70087

ORIGINAL RESEARCH



Parenteral nutrition practice in the United States: A cross-sectional survey with gap analysis

Phil Ayers PharmD¹ | Joseph I. Boullata PharmD, RPh² |
 Todd W. Canada PharmD³ | Sarah V. Cogle PharmD⁴ |
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J Parenter Enteral Nutr. 2026; 50: 701-716. doi:10.1002/jpen.70087

6

Prescribing

Discipline	2003 Survey (n =651)	2011 Survey (n =895)	2025 Survey (n=1160)
Dietitian	n/a	20.9	61.3
Pharmacist	n/a	28.3	59.2
Physician	78	71.6	38.3
Nurse Practitioner/Advanced Practice RN	n/a	14.7	21.7
Physician Assistant	n/a	12.8	11.2
Nutrition Support Service	n/a	30.5	n/a

7

MCB-PN Formulations

Characteristics	2-Chamber MCB-PN	3-Chamber MCB-PN
Chamber ingredients	Dextrose and amino acids	Dextrose, amino acids, and ILE
Volume	1,000 and 2,000 ml	1026 ml, 1440 ml, 1540 ml 1920 ml, 2053 ml, 2566 ml
Electrolyte options	With or without electrolytes	With electrolytes only
Macronutrient Concentrations and Dose	2-Chamber MCB-PN	3-Chamber MCB-PN
Amino acid concentration after mixing	2.75%-8%	2.34%-3.31%
Amino acid dose (g/L)	27.5-80	23-33
Dextrose concentration after mixing	5%-20%	7.4%-10.7%
Dextrose dose (g/L)	50-200	74-107
ILE dose (grams/liter)	0	35-39

8

Electrolyte Composition per 1 Liter: 2- and 3-chamber MCB-PN

Characteristics	2-Chamber MCB-PN (with electrolytes)	3-Chamber MCB-PN
Calcium	4.5 mEq	2.6-3.9 mEq
Magnesium	5 mEq	5.5-7.8 mEq
Phosphate	15 mmol	7.3-9.7mmol
Potassium	30 mEq	17-23 mEq
Sodium	35 mEq	22-31 mEq

Baxter US Products. <https://ushospitalproducts.baxter.com/clinimix-amino-acids-dextrose-injections-0> (accessed Oct 25)
 Fresenius Kabi US Products. <https://www.freseniuskabinutrition.com/products/kabiven-perikabiven/> (accessed Oct 25)

9

Standardized Competencies for MCB-PN

- Identifies the correct product and volume to meet the PN order
- Inspects the product for any damage or deterioration prior to removing the overwrap
- Completely activates and agitates the product to mix all components together
- Identifies inappropriate additives
- Makes manual additives as ordered
- Completely affixes patient-specific and auxiliary labels
- Places completed PN in refrigeration prior to delivery

Boullata J, et al. *Nutr Clin Pract.* 2016;31(4):543-555.

10

Institute for Safe Medication Practices (ISMP) Parenteral Nutrition Survey

- 280 respondents (December 2024-January 2025)
 - Pharmacists 79%
 - Nurses 10%
 - Pharmacy technicians 4%
 - Dietitians 4%
 - Prescribers 2%
 - Others 1%

ISMP. March 13, 2025. Volume 30 Issue 5

<https://home.ecri.org/blogs/ism-p-alerts-and-articles-library/survey-exposes-risks-with-custom-and-multi-chamber-bag-parenteral-nutrition-part-i>

11

Institute for Safe Medication Practices (ISMP) Parenteral Nutrition Survey

- Hospital Size
 - 26% 100-299 beds
 - 25% 300-499 beds
 - 22% 500 beds or more
 - 10% 26-99 beds
 - 5% 25 beds or less
 - 12% Not applicable

ISMP. March 13, 2025. Volume 30 Issue 5

12

Institute for Safe Medication Practices (ISMP) Parenteral Nutrition Survey

- Setting (87% United States)
 - 38% Community Hospitals
 - 28% Teaching Hospitals
 - 8% Critical Access Hospitals
 - 6% Home Infusion
 - 4% Pediatric Hospitals
 - 3% Cancer Care Hospitals
 - 2% Long Term Care Facilities
 - 1% Women and Children Hospitals
 - 10% Other

ISMP. March 13, 2025. Volume 30 Issue 5

13

Institute for Safe Medication Practices (ISMP) Parenteral Nutrition Survey

- Multi-Chamber Bag Parenteral Nutrition (MCB-PN)
 - 53% use MCB-PN
 - 26% use for all PN patients
 - 34% use in less than 25% of their patients
 - 34% said their organization had increased use in the last 3 years due to shortages

ISMP. March 13, 2025. Volume 30 Issue 5

14

Institute for Safe Medication Practices (ISMP) Parenteral Nutrition Survey

- Multi-Chamber Bag Parenteral Nutrition (MCB-PN)
 - 91% stored/dispensed from pharmacy
 - 8% Combination pharmacy/Automated Dispensing Cabinet (ADC)
 - 2% Locked cabinet for nurses

ISMP. March 13, 2025. Volume 30 Issue 5

15

Institute for Safe Medication Practices (ISMP) Parenteral Nutrition Survey

- MCB-PN Errors
 - 29% experienced or are aware of a close-call or error that reached the patient
 - More than 40 errors described
 - Infused beyond 24 hours most common error reported

ISMP. March 13, 2025. Volume 30 Issue 5

16

Institute for Safe Medication Practices (ISMP) Parenteral Nutrition Survey

- MCB-PN Competency Assessment
 - 68% indicated that their organization does not provide initial and/or annual competency assessment for
 - Prescribing
 - Dispensing
 - Activating
 - Administering

ISMP. March 13, 2025. Volume 30 Issue 5

17

ISMP/ASPEN MCB-PN Nutrition Consensus Statements

- ASPEN and ISMP conducted a stakeholders meeting
- Purpose was to reach consensus on 18 statements involving:
 - MCB-PN general use
 - Ordering/order review
 - Preparation and labeling
 - Administration
 - Documentation
 - Monitoring
 - Transition of care

ISMP/ASPEN Multi-Chamber Bag Parenteral Nutrition Consensus Statements, 2025
<https://home.ecri.org/blogs/ismp-tools/multi-chamber-bag-parenteral-nutrition-consensus-statements>

18

The Institute for Safe Medication Practices (ISMP)/ American Society for Parenteral and Enteral Nutrition (ASPEN) Multi-Chamber Bag Parenteral Nutrition Consensus Statements

PRACTICE TOOL



Parenteral nutrition (PN) is a complex life-sustaining therapy for patients who cannot intake adequate oral or enteral nutrition. A PN formulation is one of the most complex medications prescribed to patients and is considered a high-alert medication that is susceptible to errors that can result in patient harm.¹

A pharmacy can compound PN specifically for a patient (i.e., custom-compounded PN), or it can be delivered using standardized, commercially available multi-chamber bag parenteral nutrition (MCB-PN). While MCB-PN is PN and subject to PN-specific guidance and recommendations,^{2,3} there are unique safety considerations to MCB-PN that must also be considered.

Recently, ASPEN and ISMP conducted a stakeholder meeting to reach consensus on 18 statements involving MCB-PN general use, ordering/order review, preparation and labeling, administration, documentation, monitoring, and transition of care. These consensus statements were published by ISMP⁴, and ASPEN will publish a paper that further details the methods and rationale for each statement in the *Journal of Parenteral and Enteral Nutrition*.

19

Consensus Statements

- What is the appropriate terminology to use when referring to standardized commercially available parenteral nutrition products from a manufacturer?
 - *Commercial multi-chamber bag parenteral nutrition*
 - Avoid the term **Premixed**
- Based on the current MCB-PN products available in the US market, what populations are appropriate?
 - Adult and older pediatric patients with an appropriate indication for whom MCB-PN can meet their targeted needs
 - Not recommended
 - Long term patients for whom targeted needs cannot be met
 - Preterm and term neonates
 - Inborn errors of metabolism
 - Highly individualized electrolyte and/or macronutrient requirements

ISMP/ASPEN Multi-Chamber Bag Parenteral Nutrition Consensus Statements, 2025

20

Consensus Statements

- How can the selection of MCB-PN products offered by institutions promote the safe and appropriate use of MCB-PN?
 - *Evaluate nutrient requirements of patient population and offer MCB-PN products that best meets those needs*
 - *Develop a systematic approach to provide a variety of forms of PN, if appropriate. Special considerations may be made during shortages, emergency crisis, travel, initiating therapy*
- How can practitioners use what is currently known about the potential benefits and risks of MCB-PN versus compounded PN to support their decision between these two types of PN?
 - *Apply scientific literature and error data to evaluate potential risk vs. benefit*
 - *ACD/EHR interface use in place to reduce the risk of errors*

ISMP/ASPEN Multi-Chamber Bag Parenteral Nutrition Consensus Statements, 2025

21

Consensus Statements

- How should MCB-PN errors be reported?
 - *Document errors and near misses during PN use process through the organization's reporting system for analysis and ISMP for shared learning*
- Is additional training necessary for practitioners involved in any step of the PN use process at an institution or facility that provides MCB-PN?
 - *Provide initial and annual training and competency assessments for any practitioner involved in any step of the PN use process*

ISMP/ASPEN Multi-Chamber Bag Parenteral Nutrition Consensus Statements, 2025

22

Institute for Safe Medication Practices (ISMP) Parenteral Nutrition Survey

- MCB-PN Competency Assessment
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 - Prescribing
 - Dispensing
 - Activating
 - Administering

ISMP. March 13, 2025. Volume 30 Issue 5

23

Institute for Safe Medication Practices (ISMP) Parenteral Nutrition Survey

- MCB-PN Activation
 - 50% Most often in pharmacy in sterile environment but not always (24%)
 - 11% Combination nursing and pharmacy staff
 - 11% Always by nursing
 - 4% Patient/nurse in the home

ISMP. March 13, 2025. Volume 30 Issue 5

24

Consensus Statements

- What should be changed at the manufacturer level to improve MCB-PN safety?
 - *Consider providing a broader variety of MCB-PN formulations to meet the needs of a more diverse patient population*
 - *Consider completing a human factors engineering analysis for new MCB-PN formulations prior to introduction to the market (packaging, labeling, barcoding, ease of administration)*
- What EHR functionality is required for safe ordering of MCB-PN?
 - *Clinical decision support (dose range, compatibility, drug-drug, duplicate therapy, maximum concentrations)*
 - *Soft warnings, hard stops*
 - *Regular review of alert overrides to determine appropriateness*

ISMP/ASPEN Multi-Chamber Bag Parenteral Nutrition Consensus Statements, 2025

25

Consensus Statements

- What specific actions should be taken when ordering, reviewing and verifying an order for MCB-PN (beyond that of compounded PN)?
 - *Standardized order templates for prescribing MCB-PN*
 - *Select a product appropriate for the patient with the least amount of waste*
 - *Brand name with generic name*
 - *Rate and duration clear*
 - *Verify for compatibility and stability*
- Where can the inactivated MCB-PN product be safely stored?
 - *In the pharmacy away from similar looking products*
 - *Avoid storing in patient care areas*
 - *In the home setting, store according to prescribing information*

ISMP/ASPEN Multi-Chamber Bag Parenteral Nutrition Consensus Statements, 2025

26

Consensus Statements

- What are the critical steps in preparing MCB-PN for administration?
 - *Activate in pharmacy and add any prescribed additives in a sterile environment*
 - *Barcode scanning should be used to verify vials and syringes (IVWMS)*
 - *Pharmacist review of final product*
 - *In the home setting, MCB-PN should be prepared according to the manufacturer's instructions. If additives are required at home, they should be incorporated using aseptic technique (e.g. Aseptic Non Touch Technique (ANTT®))*
- What nutrient components are safe to add to MCB-PN?
 - *Components added to MCB-PN must have established stability and compatibility data. Policies should be developed*

ISMP/ASPEN Multi-Chamber Bag Parenteral Nutrition Consensus Statements, 2025

27

Consensus Statements

- What components are essential to add to MCB-PN?
 - *Unless there are specific patient specific contraindications*
 - Multivitamins
 - Trace elements
 - Provide lipid injectable emulsion (ILE) to non ILE formulations
 - Electrolytes in electrolyte non containing formulations
- How should the labeling of MCB-PN differ from the labeling of compounded PN?
 - Pharmacy should add a label to the MCB-product
 - *Label should include brand and generic name*
 - *Total volume, rate, volume to be infused, BUD of the final admixture*
 - *Amount of each component and Beyond Use Date*

ISMP/ASPEN Multi-Chamber Bag Parenteral Nutrition Consensus Statements, 2025

28

Consensus Statements

- What specific actions should be taken to improve the safety of MCB-PN administration?
 - *Use of technology and safe workflows*
 - *Ensure bag is activated*
 - *Do not exceed 24 hours timeframe*
- How can practitioners support patients to receive appropriate amounts of prescribed additives when the full bag of MCB-PN is not infused?
 - *Consider whether Compounded PN may better meet the patients needs*
 - *Choose MCB-PN formulations that minimize waste*
 - *If incomplete amounts of prescribed additives are provided due to patients not receiving the full MCB-PN, additional supplementation may be required*

ISMP/ASPEN Multi-Chamber Bag Parenteral Nutrition Consensus Statements, 2025

29

Consensus Statements

- What specific actions should be taken to safely transitions patients on MCB-PN across care settings?
 - *Review order prior to transition*
 - *Verify products ordered are available and the order is clear, feasible, safe and meets the patient's needs.*
 - *MCB-PN home patients should receive education related to storage, preparation, administration and monitoring*
- What specific actions should be taken when switching between compounded PN and MCB-PN?
 - *Be aware of distinct product components, safety concerns and practice recommendations for each. Take appropriate action to ensure safe and adequate nutrient delivery*

ISMP/ASPEN Multi-Chamber Bag Parenteral Nutrition Consensus Statements, 2025

30

DOI: 10.1002/jpen.70087

ORIGINAL RESEARCH



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J Parenter Enteral Nutr. 2026; 50: 701-716. doi:10.1002/jpen.70087

31

MCB PN Use 2011 Survey vs. 2025 Survey

- 2011 Survey (n=895)
 - 21%
- 2025 Survey (n=1160)
 - 21.7% with additives
 - 15.9% without additives

32

MCB-PN and Beyond Use Date (BUD) N=253

PN Admixture System (MCB) activated	24h	30h	9d	10d	N/A	Other	Unsure
With Vitamins/trace elements (%)	24.9	4.7	1.6	0.8	46.6	0.4	20.9
Without Vitamins/trace elements (%)	22.5	4	4	1.6	46.2	0.4	21.3

33

Revised USP Chapter <797>

Table 13. BUD Limits for Category 2 CSPs*

Preparation Characteristics		Storage Conditions		
Compounding Method	Sterility Testing Performed and Passed	Controlled Room Temperature (20°–25°)	Refrigerator (2°–8°)	Freezer (–25° to –10°)
Aseptically processed CSPs	No	Prepared from one or more nonsterile starting component(s): 1 day Prepared from only sterile starting components: 4 days	Prepared from one or more nonsterile starting component(s): 4 days Prepared from only sterile starting components: 10 days	Prepared from one or more nonsterile starting component(s): 45 days Prepared from only sterile starting components: 45 days
	Yes	30 days	45 days	60 days
Terminally sterilized CSPs	No	14 days	28 days	45 days
	Yes	45 days	60 days	90 days

* A shorter BUD must be assigned when the physical and chemical stability of the CSP is less than the BUD limit stated in the table.

[USP General Chapter 797](#)

34

ASPEN Parenteral Nutrition Guidelines

Clinical Guidelines

A.S.P.E.N. Clinical Guidelines: Parenteral Nutrition Ordering, Order Review, Compounding, Labeling, and Dispensing

Joseph I. Boullata, PharmD, RPh, BCNSP, FASPEN¹; Karen Gilbert, RN, MSN, CNSC, CRNP²; Gordon Sacks, PharmD, BCNSP, FCCP³; Reginald J. Labossiere, MD⁴; Cathy Crill, PharmD, BCNSP⁵; Praveen Goday, MD, MBBS, CNSC⁶; Vanessa J. Kumpf, PharmD, BCNSP⁷; Todd W. Mattox, PharmD, BCNSP⁸; Steve Plogsted, PharmD, BCNSP, CNSC⁹; Beverly Holcombe, PharmD, BCNSP, FASHP¹⁰; and the American Society for Parenteral and Enteral Nutrition

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SAGE

6. What macronutrient dosing limits are expected to provide for the most stable 3-in-1 admixtures? We recommend that TNAs maintain final concentrations of amino acid $\geq 4\%$, monohydrated dextrose $\geq 10\%$, and injectable lipid emulsion $\geq 2\%$ to be more likely to remain stable for up to **30 h at room temperature (25°C) or for 9 d refrigerated (5°C) followed by 24 h at room temperature.** Strong

35

Potential Advantages

- Reduced risk of prescribing and compounding errors
- Cost advantage including reduced pharmacy preparation time
- Less manipulation and reduced infection rates
- Can be used in times of shortages
- Comparable nutrition efficacy in selected patients
- Emergency preparation

http://nutr.org/uploadedFiles/Documents/Guidelines_and_Clinical_Resources/PN_Resources/MCB-PN-Practice-Tool.pdf

36

Disadvantages/Limitations

- Limited formulations
- Significant fluid/electrolyte imbalances
- Volume (wastage/multiple bags)
- May require 2 systems for PN ordering
- Transitions of care
- Not a complete PN

http://nutr.org/uploadedFiles/Documents/Guidelines_and_Clinical_Resources/PN_Resources/MCB-PN-Practice-Tool.pdf

37

Safety Concerns with MCB-PN

- Not recognized as PN which can lead to inappropriate use, refeeding syndrome, overfeeding, underfeeding and electrolyte abnormalities
- Not activated under aseptic conditions
- Allowed to hang longer than 24 hours which may lead to increased risk of infection
- Additives introduced that may effect stability
- Essential components omitted (e.g. intravenous multivitamins and trace elements)
- ILE not administered with 2 chamber MCB-PN leading to essential fatty acid deficiency
- Errors in transitions of care
- Inadequate patient/caregiver education in the home environment

Ayers P, et al. Pharmacy Purchasing and Products, June 2026

38

Can I Utilize MCB-PN in My Organization?

- Review the institution size and number of PNs compounded daily
- Review the types of patients that require PN
- Do they require fluid restriction
- Do they require higher protein doses
- Do they have abnormal electrolyte requirements

http://nutr.org/uploadedFiles/Documents/Guidelines_and_Clinical_Resources/PN_Resources/MCB-PN-Practice-Tool.pdf

39

MCB-PN Cases

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Mississippi Baptist Medical Center
Clinical Associate Professor
University of Mississippi School of Pharmacy

40

MCB-PN Case Study 1

63-year-old male admitted to a community hospital with SBO and AKI. NG tube in place, surgery has elected to treat conservatively and avoid taking the patient to the OR. Nephrology consulted and will continue volume resuscitation with Lactated Ringer's solution. No plans for dialysis.

PMH: CKD, Ogilvie's syndrome, type 2 DM, NKDA

SBO: small bowel obstruction, AKI: acute kidney injury, CKD: chronic kidney disease OR: operating room, NKDA: no known drug allergy, NG: nasogastric

41

Case Study 1

Ht. 177.8 cm Wt. 85 kg NKDA

Sodium	139	(135-145 mEq/L)
Potassium	4.2	(3.6-5 mEq/L)
Chloride	101	(98-107 mEq/L)
Carbon dioxide	23	(22-31 mEq/L)
Calcium	8	(8.4-10.2 mg/dL)
Ionized calcium	1.14	(1.13-1.32 mmol/L)
Phosphorus	3.9	(2.5-4.5 mg/dL)
Magnesium	2	(1.7-2.2 mg/dL)
Glucose	160	(70-110 mg/dL)
BUN	42	(7-20 mg/dL)
Creatinine	3.1	(0.7-1.5 mg/dL)
Triglyceride	200 mg/dL	<150mg/dL

42

Case Study 1

- Nutrition Support Service (NSS) consulted to initiate parenteral nutrition to provide 0.8 g/kg/day of protein (68 g/day) per Nephrology request
- 3-chamber MCB-PN to be utilized. Nephrology orders a peripherally-inserted central catheter (PICC)
- NSS selects 3-chamber formulation utilizing a 2053-mL bag
- 10 mL of multivitamins for injection and 1 mL trace elements will be added to the 3-chamber MCB-PN bag

43

Composition of 3-Chamber MCB-PN

- 2053 mL Rate 86mL/h
- 68 g amino acids (0.8g/kg/day))
- 220 g dextrose (1.8g/kg/min)
- 80 g lipids (0.9g/kg)
- Total kcal 1820 (21 kcal/kg/day)
- Electrolytes
 - Sodium 64 mEq
 - Potassium 47 mEq
 - Magnesium 16 mEq
 - Calcium 8 mEq
 - Phosphorus 20 mmol

44

Case Study 1

- Hospital admission day 5, surgery elects to discontinue the NG tube and attempt to advance diet
- Patient does not tolerate diet advancement
- Nasoenteric tube is placed for enteral feedings. Patient is unable to tolerate advancement of feedings to goal rate.
- Primary team inquires whether patient would be a candidate for home PN. Patient's insurance will only reimburse the home infusion company for a MCB-PN, not a compounded PN

45

Case Study 1

- Patient is discharged on a 3-chamber MCB-PN at 86 mL/hr
- Weekly weight, labs ordered
- Labs
 - »Comprehensive metabolic panel (CMP)
 - »Magnesium
 - »Phosphorus
 - »Triglycerides
 - »Complete blood count (CBC)

46

Settings

PP Poll

If this patient was 65 years old or older, would they qualify for home PN under Medicare?

☐ A) Yes

☐ B) No

☐ C) Unsure

Start Poll

QR code appears when the poll starts

47

Medicare Coverage for Home PN

- September 2021 new Local Coverage Determination (LCD)
- Prosthetic Device Benefit within the Durable Medical Equipment benefit
- PN is covered for beneficiaries who qualify under the Prosthetic Device Benefit defined in the Medicare Benefit Policy Manual, Chapter 15, Section 120

Allen P. *Practical Gastroenterology*. October 2021

<https://med.virginia.edu/ginutrition/wpcontent/uploads/sites/199/2021/11/October-2021-Medicare-Coverage-for-Home-PN.pdf>

48

Medicare PN Qualifying Checklist

Consideration	Yes	No
Does the patient require PN for a long and indefinite duration?		
Has this been documented clearly in the medical record		
Daily PN is considered reasonable and necessary for a patient?		
Does the medical record have clear documentation that supports this?		
Documented in the medical record that enteral nutrition has been considered, ruled out, tried and been found ineffective?		
Does the home PN provide 20-35 kcal/kg/day calories? If not, has medical necessity of caloric intake outside this range been documented?"		
Does the home PN provide 0.8-2 g/kg/day? If not has medical necessity of protein outside this range, dextrose <10%, or lipid use outside of FDA-approved drug information been documented?		
Allen P. <i>Practical Gastroenterology</i> . October 2021		

49

MCB-PN Case 2

- KW, a 31 year old female with a past medical history of cerebral palsy is receiving enteral feedings per PEG tube at home.
- Height 152.4 cm, weight 40kg.
- Patient has developed a gastrocutaneous fistula at her PEG site and will require 6-8 weeks of home parenteral nutrition (PN).
- A custom PN is initiated to provide 1.5g/kg/day protein and 30kcal/kg/day.

50

MCB-PN Case 2

- During the course of her PN therapy, her insurance provider changes and they will no longer cover the cost of KW's custom PN. The home infusion PN team is tasked with developing a new PN regimen using an MCB-PN.
- The team decides to utilize a 1 liter 2-chamber MCB-PN (Amino Acid 5% and 15% Dextrose with Electrolytes) at 42mL/h along with 250mL (50g) of a 20% ILE product. Intravenous multivitamins and trace elements will be added to the 2 chamber MCB-PN.
- This regimen will provide 1.3g/kg/day protein and 30kcal/kg/day.

51

Summary

- MCB-PN is a viable option for some patients requiring parenteral nutrition
- Policies and procedures should be in place to ensure safe and appropriate use of MCB-PN
- Clinicians prescribing PN must be competent in the all phases on MCB-PN utilization

52

