

The Value of Nutrition Support Pharmacist Interventions

ABSTRACT: The PHarmacist Avoidance or Reductions in Medical Costs in CRITically Ill Adults: PHARM-CRIT Study by Rech et al demonstrated the value of critical care pharmacists' interventions. The services provided by nutrition support pharmacists were briefly mentioned. This article aims to highlight the value of interventions provided by nutrition support pharmacists.

KEY WORDS: cost; enteral nutrition; medication safety; parenteral nutrition; pharmacist; value

Geneene Salman, PharmD,
BCCCP, BCPS, CNSC¹

Joseph I. Boullata, PharmD, RPh,
CNS-S, FASPEN, FACN²

To the Editor:

We read with great interest the PHarmacist Avoidance or Reductions in Medical Costs in CRITically Ill Adults: PHARM-CRIT Study by Rech et al (1) published in the recent issue of *Critical Care Explorations*, which further demonstrated the value of critical care pharmacists. Within the well-described work, we were struck by the limited mention of nutrition support pharmacotherapy and the associated cost avoidance due to pharmacists' interventions in this area.

Parenteral nutrition (PN) is a high-alert and complex medication consisting of dozens of components with potential to cause significant harm when used injudiciously (2). Serious adverse clinical events inherent to PN therapy include metabolic, infectious, and vascular complications (3). Furthermore, potential systems errors involving PN may occur at various stages (e.g., ordering, preparing, administering) (2). These clinical complications and systems errors pose risk for detrimental outcomes, necessitating trained pharmacists who provide appropriate and unique interventions. Unfortunately, a national survey of nutrition support clinicians revealed that 44% practiced at institutions that did not track PN-related errors, and 23% stated that their institutions did not have dedicated pharmacists to review PN orders (4).

Critical care pharmacists' interventions, which include nutrition support pharmacotherapy, have been associated with improved outcomes such as reduced length of stay, mortality, and adverse events (5). However, in the Supplemental Table 1 in Rech et al (1), the cost avoidance estimate of PN "management" (\$63.35 in 2016) was not based on clinical interventions. Instead, it was based on the cost difference between physician- and pharmacist-driven management of pediatric PN (6). Therefore, the omission of cost-savings resulting from the prevention of PN complications and errors may undervalue PN-related interventions. Incorporating outcome benefits in economic evaluations will be valuable and avoid the criticism of the overstated value with cost avoidance alone (7).

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Nutrition support therapy interventions span various categories of cost-avoidance, as delineated by Rech et al (1), including adverse drug event prevention, individualized patient care, bedside monitoring, and resource utilization. Examples of nutrition support interventions include: drug dosing adjustments based on nutrition status (8), evaluating for appropriateness of PN in terms of indication (3), ensuring the stability and compatibility of the PN ingredients (3), verifying compatibility and stability between co-administered medications with PN or enteral nutrition (3, 9), and preventing costly errors associated with inappropriate preparation and administration of medications through enteral feeding tubes (9). Furthermore, indirect interventions, such as pharmacists' input and expertise in designing enhanced computerized prescriber order entry with clinical decision support, can mitigate potentially dangerous PN ordering errors (10). In future work that builds off the PHarmacist Avoidance or Reductions in Medical Costs in CRITically Ill Adults: PHARM-CRIT Study (1), we encourage the inclusion of the broad range of nutrition support pharmacotherapy interventions.

1 Department of Pharmacy Practice, College of Pharmacy, Marshall B. Ketchum University, Fullerton, CA

2 Clinical Nutrition-Pharmacy Specialist, JBoullata, PharmD Consulting Services, Philadelphia, PA

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For information regarding this article, E-mail: gsalman@ketchum.edu

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