

Is the use of specialized nutritional formulations a cost-effective strategy? A national database evaluation.

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Abstract

BACKGROUND:

We apply currently published clinical outcomes data to length of stay and hospital cost to determine the potential economic benefit associated with the use of specialized nutritional formulations in elective surgical, trauma, and medical patients. Although the use of immune-modulating formulations has repeatedly shown favorable clinical outcomes, including decreased complications (both infectious and noninfectious), length of stay (both ICU and total days), and ventilator days, the cost-effectiveness of nutritional modulation of the immune response in a US-based population has not previously been explored.

METHODS:

Data for the current study were obtained from a large national database with 126 member hospitals and data from over 1 million patients. Data extracted from the database included patient type (surgical, medical, and trauma) and subservice, whether the hospital stay was "complicated" or "uncomplicated" (as determined by diagnosis-related groups and International Classification of Diseases, Ninth Revision coding), mean length of stay, mean cost, and incremental cost per complication experienced. The clinical outcomes measures from 3 major peer-reviewed studies were then applied to the cost data in order to determine the cost savings associated with the use of specialized nutritional formulations in each of the patient populations. Additionally, cost data were segmented by region of the United States (New England, mid-Atlantic, South, Midwest, Southwest, and West) and by primary focus of the health care facility (academic, indigent care, large community) to enable more meaningful cost comparisons.

RESULTS:

For the medical patient population, according to the published rate of 51% decrease in risk of infectious complications and a decreased length of hospital stay of 9.7 days, net cost savings (after accounting for the increased costs of administering immune modulating formula) is \$2066. The same calculations were done for surgical and trauma patients, with \$688 and \$308 net cost savings per patient, respectively. These figures assume a base infection rate of 5%. Expected cost savings vary

markedly for deviations in base infection rate and slightly for differences in facility type or region of the country.

CONCLUSIONS:

This study demonstrates that specialized nutritional formulations are a cost-effective way for hospitals to improve clinical outcomes while reducing resource consumption and total cost. These benefits are observable in all patient types, all facility types, and all regions of the United States.

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