

# Immunonutrition for patients undergoing elective surgery for gastrointestinal cancer: Impact on hospital costs

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## Objective

This study was completed to determine the impact on hospital costs of immunonutrition formulas (containing arginine, omega-3 fatty acids [EPA + DHA] and nucleotides) used perioperatively in patients having major elective surgery for gastrointestinal (GI) cancer.

## Methods

A health economic model was created that utilized US hospital costs/day and cost/stay for GI cancer surgery patients, taken from the Healthcare Cost and Utilization Project's Nationwide Inpatient Sample (HCUP-NIP) database. These costs were used to estimate the effect of perioperative IMPACT<sup>®</sup> formula use on hospital costs using two methods: reductions in length of stay (LOS) and risk of infectious and other complications. The clinical outcome data needed for the calculations was meta-analyzed from 6 RCTs studying the perioperative use of IMPACT<sup>®</sup> formulas in GI cancer surgery patients (n=889). Calculations include the average European selling price for perioperative use of IMPACT formulas = \$397. Sensitivity of results to changes in baseline LOS and complication rates was also tested.

## Results

- Health economic model estimates show use of immunonutrition resulted in savings per patient of \$6000 when costs were based on reduction in LOS, and a \$3300 when costs were based on a reduction in complications.
- The sensitivity analysis showed cost savings were present for baseline complication rates above 3.5%.
- When US baseline rates for LOS and infectious complications for upper and lower GI cancer surgery were inserted separately into the model, estimated cost savings continued to be present and ranged from \$1200 to \$6300.

## Conclusion

- Use of immunonutrition (containing arginine, omega-3 fatty acids [EPA + DHA] and nucleotides) for patients undergoing elective surgery for GI cancer is an effective and cost-saving intervention.

**Summary prepared by Nestlé Healthcare Nutrition. The article is open access and can be viewed using the following link: <http://www.wjso.com/content/10/1/136>**