

*This health economic study demonstrated that oral nutritional supplements provided during hospitalization were associated with decreased length of stay and episode costs. In patients with at least one known follow-up, there was a 6.7% decrease in probability of 30-day hospital readmissions.\**



*On average, 1 in 3 patients admitted to the hospital is malnourished. Malnourished patients are at increased risk for poor outcomes, including increased length of stay (LOS), health care costs, complications rates, readmission rates, and mortality.*

**M**alnutrition is a serious, under-appreciated, and under-treated problem among hospitalized patients. Groups at highest risk include the elderly as well as oncology and gastroenterology patients. Evidence suggests that oral nutritional supplements (ONS) may improve outcomes among hospitalized patients. A variety of benefits have been found, including reduced length of stay (LOS), inpatient episode cost, complication rates, depressive symptoms, readmission rates, and improved lean body mass recovery. However, the opportunity exists to examine larger sample sizes and patient populations.

A retrospective health economic study was conducted to assess the association and impact of ONS on health outcomes for hospitalized patients. This analysis was conducted using the Premier Perspectives Database™ that contains diagnostic and billing information on 44.0 million adult inpatient episodes at 460 sites during the years 2000 to 2010.

The study's three key outcome variables were LOS, episode cost, and probability of 30-day readmission. LOS was defined as the number of days of direct patient care from admission to discharge. Episode cost was defined as the actual costs to treat the patient during the hospitalization. Probability of 30-day readmission was defined as a return hospitalization for any diagnosis to a Premier hospital. ONS was defined as a complete oral nutritional supplement, as indicated by the Premier data.



*This study is the first health economic study designed to measure the impact of oral nutritional supplements on hospital outcomes.*



The study results included 44.0 million episodes and 724,027 ONS episodes. The overall rate of ONS use in adult inpatient episodes was 1.6 percent. Each adult ONS episode was matched to an adult non-ONS episode that accounted for differences in age, illness acuity, and demographics, to obtain a matched sample of 1,160,088 episodes.

The study has two key advantages over previous research. First, it used a large database to estimate the effect of ONS based on real-world data. With 44 million adult inpatient episodes, these data were relevant and broadly representative. Second, econometric methods were employed to examine the impact of ONS on patient outcomes. By matching ONS and non-ONS episodes, potential bias due to nonrandom selection into ONS treatment was eliminated. This made it possible to estimate the impact of ONS use on LOS, episode cost, and 30-day readmission probability.

The results of this study demonstrated that oral nutritional supplements provided during hospitalization were associated with a:

- 21.0% decrease in length of stay
- 21.6% decrease in episode cost—approximately \$4,734 in savings†

There was a 6.7% decrease in probability of 30-day hospital readmissions in patients with at least one known follow-up.\*

This study found that the use of oral nutritional supplements led to statistically significant decreases in inpatient length of stay and episode cost. In patients with at least one known follow-up, the probability of 30-day readmission was also decreased. Given the high prevalence of malnutrition among inpatient populations, these results suggest that oral nutritional supplementation could help decrease hospitalization costs.

## Conclusion

Enhance existing care practices with nutritional interventions to help decrease hospital costs.

\* Readmission defined as return to a study hospital for any diagnosis. Data measured delayed readmission and do not include patients not readmitted due to recovery or death.

† Monetary figures are based on 2010 US dollars and inflation adjusted.

1. Philipson, et al. *Am J Manag Care*. 2013;19(2):121-128