



Clinical Updates: 2012

Lim SL et al. Malnutrition and its impact on cost of hospitalization, length of stay, readmission and 3-year mortality. *Clin Nutr* 2012; 31:345-350.

Background: This study determined the prevalence of malnutrition in a Singapore hospital and its impact on hospitalization outcomes and costs, controlling for diagnosis-related groups (DRG).

Methods: This prospective cohort study included 818 newly admitted adult hospital patients. Subjective Global Assessment (SGA) was used to assess nutritional status on admission. Hospitalization outcomes over 3 years were collected and adjusted for gender, age, ethnicity, and matched for DRG.

Results:

- 29% of patients were malnourished
- Malnourished patients had longer hospital stays (6.9 ± 7.3 days vs. 4.6 ± 5.6 days, $p < 0.001$)
- Malnourished patients were more likely to be readmitted within 15 days (adjusted relative risk =1.9, 95% CI 1.1-3.2, $p = 0.025$).
- Within a DRG, the mean difference between actual cost of hospitalization and the average cost of hospitalization for malnourished patients was greater than for well-nourished patients ($p = 0.014$).
- Mortality was higher in malnourished patients than in well-nourished patients at 1 year (34% vs. 4.1%), 2 years (42.6% vs. 6.7%) and 3 years (48.5% vs. 9.9%); $p < 0.001$ for all.
- Malnutrition was a significant predictor of mortality (adjusted hazard ratio=4.4, 95% CI 3.3-6.0, $p < 0.001$).

Conclusions: Malnutrition was present in up to one third of the hospital patients and resulted in significant increases in length of stay, hospital costs, readmission rates, and mortality. Due to the high prevalence of malnutrition and the resulting poor outcomes, strategies to prevent and treat malnutrition in the hospital and post-discharge are needed to improve patient care.

Neelemaat F et al. Oral nutritional support in malnourished elderly decrease functional limitations with no extra cost. *Clin Nutr* 2012; 31: 183-190.

Background: This study evaluated the cost-effectiveness of post-discharge nutrition intervention in malnourished elderly patients.

Methods: This study was a randomized controlled trial of 210 malnourished elderly (60 years of age and older) hospital inpatients. The intervention group received an energy and protein enriched diet, oral nutritional support, calcium-vitamin D supplements, and dietitian telephone counseling for 3 months after hospital discharge. The control group received usual care. Data was collected on quality adjusted life years (QALYs), physical activities, functional status, and cost-effectiveness.

Results:

- There were no statistically significant differences in quality of life and physical activities between the intervention and control groups.
- Functional limitations decreased significantly more in the intervention group than in the control group (mean difference -0.72, 95% CI -1.15; -0.28)
- There was no difference in costs between the intervention and control groups
- Cost-effectiveness for QALYs and physical activities could not be demonstrated
- For functional limitations, there was a 0.95 probability that the intervention is cost-effective compared to the control.

Conclusions: Nutrition intervention in malnourished elderly patients for three months after hospital discharge resulted in significant improvement in functional limitations and is cost-effective.

Boyce B. Paradigm shift in health care reimbursement: A look at ACOs and bundled service payments. *J Acad Nutr Diet* 2012;112:974-979.

Substantial change concerning healthcare reimbursements is underway. The creation of Accountable Care Organizations (ACOs) was among the many reforms born with passage of the Patient Protection and Affordable Care Act in March 2010. And with those ACOs, officials see clearly a system trending toward bundled payment models for reimbursement, away from the traditional fee-for-service approach. “Bundled payment” refers to a single payment for all care related to a treatment or condition in which that payment is then apportioned to multiple providers across many settings. Bundled payment has also been referred to as “episode-based payment” or “case rate payment” as a way to improve both cost and quality. Healthcare professionals who can demonstrate improvements in patient outcomes will be invaluable members of the health care team at all levels. Health care will be shifting away from rewarding utilization and is heading towards supporting positive outcomes, which will help reduce variability in care and reduce cost.

Hubbard GP et al. A systematic review of compliance to oral nutritional supplements. *Clin Nutr* 2012; 31: 293-312.

Background: This systematic review examined whether patients’ compliance with oral nutritional supplements (ONS) varies across healthcare settings and patient characteristics.

Methods: This review included 46 studies (n = 4328) in which ONS compliance data was available. Assessment on pooled mean percent compliance was made overall for all the studies and according to study design and health care setting. Assessments were also made for inter-relationships between compliance and ONS-related and patient-related factors, and total energy intake.

Results:

- Overall mean compliance with ONS was 78% (67% hospital, 81% community)
- Overall mean ONS intake was 433 kcal/d
- Percent ONS compliance was similar in randomized (79%) and non-randomized (77%) trials, with only slight variation between diagnostic groups.
- Compliance across a heterogeneous group of unmatched studies was positively associated with higher energy-density ONS and greater ONS and total energy intakes, negatively associated with age, and unrelated to amount or duration of ONS use.

Conclusions: This review showed that overall compliance to ONS is good at 78% across a wide range of patient groups in hospital and community settings.