



Best-Practice Nutrition Care Improves Patient Outcomes and Lowers Costs of Care

SUMMARY

This article presents a stepwise strategy for nutrition care—a simple and efficient Nutrition Care Pathway. We show how to use this Care Pathway for patients with mild-to-moderate malnutrition risk, and we offer guidance for providing advanced care for individuals with severe and complicated nutrition needs. We also emphasize that use of the Nutrition Care Pathway begins in the hospital, but the need for nutrition care continues long after the patient leaves the hospital.

SCIENTIST BIOGRAPHY

Dr. Hegazi is a physician graduate of the Mansoura University, Mansoura, Egypt. He holds two masters and PhD in Nutritional Epidemiology from the University of Pittsburgh. Prior to joining Abbott Nutrition as Medical Director of Adult Nutrition in 2009, Dr. Hegazi was an attending physician and Assistant Professor of Medicine at the University of Pittsburgh Medical Center at the Division of Gastroenterology, Hepatology and Nutrition with specialty in Gastrointestinal Nutrition. His research was funded by both the Cancer Research Foundation of America and the Crohn's and Colitis Foundation of America. He has authored over 40 peer-reviewed publications and five book chapters. He is especially interested in the interaction between nutrition and immune responses.



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HOSPITAL MALNUTRITION

Results of a recent hospital survey showed that more than 40% of patients experienced weight loss in the 3 months prior to entering the hospital, and 50% had reduced food intake the week before admission.¹ For patients admitted to hospitals around the world, malnutrition prevalence ranges from 20% to 50%. Hospitalized older people are particularly vulnerable.²



MALNUTRITION DEFINED

Malnutrition results when nutrient intake is disproportionate with nutrition needs. Malnutrition has been newly defined as 3 different clinical syndromes, which are characterized according to underlying illness/injury and varying degrees of inflammation.³ The 3 syndromes are:

1. Starvation-related malnutrition, ie, a form of malnutrition without inflammation (anorexia nervosa, pure chronic starvation)
2. Chronic disease-related malnutrition, ie, nutritional inadequacy associated with chronic conditions that impose sustained inflammation of a mild-to-moderate degree (pancreatic cancer, sarcopenic obesity)
3. Acute disease- or injury-related malnutrition, ie, under-nutrition related to conditions that elicit marked inflammatory responses (major infection, burns, trauma)

NUTRITION MAKES A DIFFERENCE

Research, worldwide, has consistently shown that nutrition interventions have a positive impact on hospitalized patients (Table).

Table. Patient Outcome Benefits with Nutrition Intervention

Benefit	Study Results
Fewer In-Hospital Complications	In a meta-analysis of 3 RCTs in patients with chronic co-morbid conditions, hip fracture, and acute illness, the incidence of all complications during hospitalization was 30% lower in the group receiving ONS (p=0.005). ⁴
Reduced Pressure Ulcer Incidence	Among hospitalized patients at risk for developing pressure ulcers, those who received ONS or enteral tube feeding were 26% less likely to develop pressure ulcers than those who were given a usual diet, as shown by a meta-analysis of results from RCTs. ⁵
Reduced Length of Stay (LOS)	In a meta-analysis of 9 RCTs in hip fracture and acutely ill patients, drinking high-protein ONS reduced hospital LOS by nearly 4 days compared to a control group (p=0.04). ⁴
	In another RCT, older adult patients who did not receive a dietitian-recommended nutrition plan had a mean length of stay that was 1.7-times longer than for those who received the feeding recommended by the dietitian (p=0.0074). ⁶
Lowered Cost of Care	Results of a recent US health economics study revealed clear financial benefits for nutrition intervention among hospitalized patients. Based on analysis of propensity-matched patients who did or did not receive ONS (1.2 million episodes), Philipson and colleagues found that those patients who got ONS had shorter lengths of stay by 2.3 days (21% shorter), and decreased episode costs by \$4734 USD (21.6% lower). ⁷

Benefit	Study Results
Lowered Cost of Care	In another US study, more than half of patients in two hospital wards were identified as malnourished or at risk of malnutrition; such patients were assigned to receive care with nutrition intervention or usual hospital care without added focus on nutrition. Nutrition intervention reduced LOS an average of 1.93 days in the malnourished group and 3.2 days in a severely malnourished subgroup (compared to patient groups who got usual care). Identifying and treating the severely malnourished patients in this study led to a savings of \$1514 USD/ patient. ⁸
Lowered Risk of Mortality	The risk of death was 56% lower in critically ill ICU patients who received EN compared to patients receiving no nutrition intervention, PN & EN, or PN alone (p=0.007). ⁹
Fewer Readmissions	In a meta-analysis of 2 RCTs in acutely ill patients with a wide variety of conditions and in patients with GI disease, ONS use had a significant effect on lowering hospital readmissions by more than 30% compared to controls (p=0.004). ⁴
	In a very recent meta-analysis of 6 RCTs with older patients, ONS use reduced readmission by 40% (p=0.001). ¹⁰
	In a RCT of patients defined as at risk of malnutrition, individualized nutrition support led to fewer readmissions compared to patients who received standard hospital care. ¹¹

RCT=Randomized Controlled Trial, ONS=Oral Nutritional Supplement, LOS=Length of Stay, EN=Enteral Nutrition, PN=Parenteral Nutrition

NUTRITION CARE PATHWAY

Nutrition screening on admission to the hospital is a new standard of care and recommended by both the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) and the European Society for Clinical Nutrition and Metabolism (ESPEN).^{12,13} In 2013, the US Alliance to Advance Patient Nutrition was launched to address the issue of malnutrition in the hospital setting and to spotlight the importance of patient nutrition.^{14,15} The Alliance, which is a consortium of 4 professional organizations, represents over 100,000 dietitians, nurses, physicians, and other clinicians from all 50 states. The Alliance's mission is to transform patient outcomes through nutrition.¹⁵ With proper attention to nutrition during hospitalization, patient outcomes can be improved and overall costs of care can be lowered.

Recently, the feedM.E. (Medical Education) Global Study Group, which is a consortium of global nutrition leaders from Asia, Europe, the Middle East, and North and South America, was established to address the global issue of malnutrition.¹⁶ As per the group recommendations, when underlying illness, injury, or symptoms indicate malnutrition risk, consider immediate oral feeding or oral nutritional supplements (ONS) as a way to prevent or lessen the impact of malnutrition in all patients who are capable of oral feeding. When screening identifies a person as malnourished or at risk of malnutrition, the Screen for Malnutrition Risk leads to the full Nutrition Care Pathway. As the next step, a nutrition assessment is used to define specific nutrition needs (Figure).¹⁶

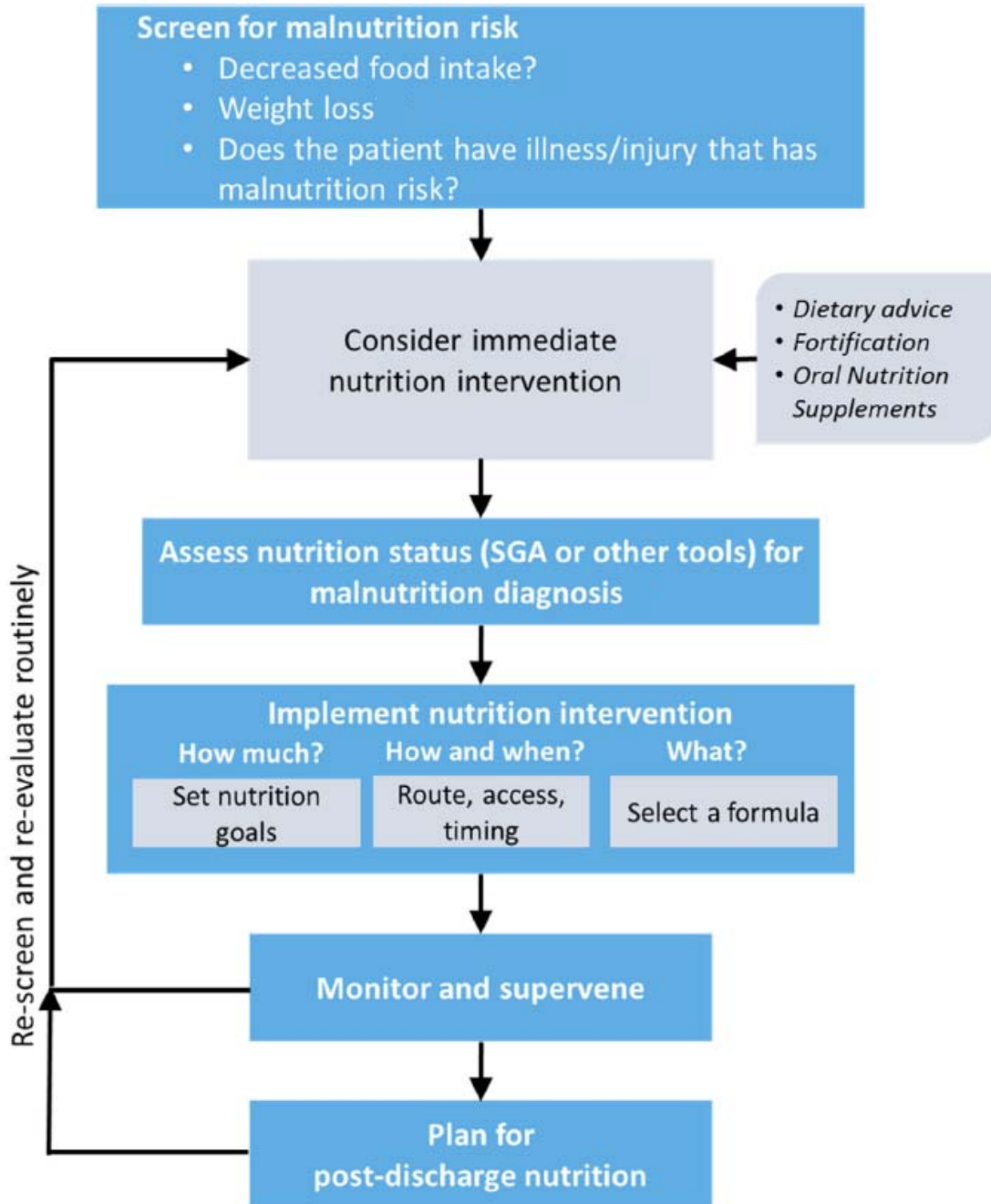


Figure. The Nutrition Care Pathway

SGA=Subjective Global Assessment
Correia MI et al. *JAMDA*. In press.¹⁶



For nutrition assessment, the Subjective Global Assessment (SGA) is widely used for most adults,¹⁷ and the Mini-Nutritional Assessment (MNA) can be used for older persons.^{18,19} Such assessments, conducted by a qualified and trained clinician, determine the extent of nutritional shortfall. Following assessment, the clinician creates an individualized plan that specifies how, what, and how much to feed.²⁰ Guidelines support prompt intervention, ie, targeted nutrition therapy within 24 to 48 hours of admission.²¹⁻²³ The long-term goal is to tie diagnosis and coding of malnutrition to reimbursement for malnutrition care.

An effective nutrition plan considers multiple aspects of care.²⁴ It requires that the patient have cognitive competence, social and functional abilities, and economic access to food; alternatively, some patients need a caregiver and other social support programs to meet their needs. The nutrition plan should be prepared for and discussed with the patient, modified as needed to meet personal and cultural preferences, and include ongoing measures/assessment of the patient's nutritional status.

ADVANCED NUTRITION CARE

When a hospitalized patient cannot consume enough fortified foods or ONS to meet nutrient needs, advanced nutrition intervention, ie, enteral nutrition (EN) or parenteral nutrition (PN), is essential.

Based on both health and cost benefits, nutrition guidelines universally recommend enteral over parenteral feeding for most hospitalized patients.

Randomized controlled trial results, as well as combined meta-analyses, demonstrated that hospitalized patients fed enterally had fewer infectious complications than did those fed parenterally;^{22,23,25} such patients also had fewer non-infectious complications and shorter hospital stays.²³

For critically ill patients who are candidates for enteral feeding, early feeding (within 24-48 hours of ICU admission) has become a recommended standard of care. Experts identify these early hours as a window of opportunity to provide nutrition that maintains gut barrier function, supports immune responses, and helps prevent energy deficit and loss of lean body mass.^{22,23}

KEY TAKEAWAYS

- Best-practice nutrition care improves patient outcomes—by averting complications, speeding recovery, improving patients' quality of life, and lowering the likelihood of hospital readmissions.
- Attention to nutrition care saves money.
- Nutrition can make a difference for your patients and your hospital.

CONCLUSION

The cost benefits of using therapeutic nutrition are clear, with major savings derived from patients suffering fewer serious complications and being able to leave the hospital or ICU sooner. Use of best-practice nutrition care improves patient outcomes and lowers costs of care—NUTRITION MATTERS!

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