

The Nutrition Support Team

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The development of nutrition support teams in the United States was stimulated in the 1970's and 80's by reports concerning the prevalence and consequences of malnutrition among hospitalized patients. Butterworth's provocative paper, "The skeleton in the hospital closet"¹ was followed by several nutrition surveys of relatively large numbers of in-hospital patients that documented abnormal anthropometric and laboratory measurements indicating suspected malnutrition in 44-58% of adult medical^{2,3} and surgical patients.^{4,5} Up to a third of non-neonatal pediatric patients were found to have evidence of malnutrition in 2 major studies.^{6,7} This malnutrition was associated with longer hospital stays, increased morbidity and mortality.^{2,8,9} Of particular significance was the reported deterioration of nutritional status with prolonged (> 14 days) hospital stay. In one study,² nutritional parameters worsened in over 75% of patients who had been admitted with normal values. While it was clear that malnutrition was in part due to underlying disease, it was also clear that it was in part iatrogenic (Table 1).

Table 1. Undesirable hospital practices affecting nutrition

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1. Failure to identify problem
 - poor documentation of weight, height, dietary intake
 - limited laboratory nutritional monitoring
 - ignorance of increased nutritional needs due to injury, illness, stress, drug/nutrient interaction.
 2. Failure to provide adequate nutritional support
 - withholding meals for diagnostic/therapeutic procedures, medications
 - prolonged use of glucose/saline
 - delay of nutritional support until depletion advanced
 - ignorance of nutritional support modalities
 3. Diffusion of responsibility for patient care
 - frequent ration of staff
 - poor communication among health care workers
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2 The nutrition support team

In response to these findings, efforts were undertaken in various medical centers to organize nutrition support teams, i.e. "specialized groups of health care professionals with expertise in nutrition who aid in the provision of nutrition support".¹⁰ These early efforts were truly pioneer work! Often there was no consensus about the necessity of forming such a team. Concerns about financial cost and conflicting interests and personalities were (and are still) common. Consequently, the nature and function of the teams varied from center to center and have evolved with time. In some institution at present, team members are available for consultation on a voluntary or mandatory basis. In others, they actually write the nutritional support orders. The composition of the team also varies, depending on institutional commitment and source of funding, but generally includes physician, dietitian, nurse, and pharmacists representation. Each team member has a primary role depending on professional specialty, but all contribute to the nutritional assessment of the patient, therapeutic planning and implementation, and patient monitoring. Each acts as a liaison between the team and their respective specialties. They meet on a regular basis to discuss patients and problems and have frequent interaction with the primary medical staff. To increase efficiency, many teams have cross-trained "front-line" individuals, e.g. dietitians may learn aspects of catheter care while nurses may perform nutrition, nutritional support teams have expanded their function beyond that of "simply" providing quality in-hospital patient care (Table 2). Many have branched out into providing ambulatory care for patients receiving nutritional support at home and have become increasingly active in institutional administrative and educational roles.

How successful have the teams been? There are several ways to look at this question. In terms of patient outcome, retrospective studies^{11,12} have provided evidence that nutrition support team input was associated with reduced mortality and morbidity. In particular, the rates of sepsis and other mishaps associated with central catheters as well as metabolic disturbances (e.g. hyper-/hypoglycemia, electrolyte imbalances) and nutritional deficiencies were decreased. Nutrition team-managed patients had shorter hospital stays and a reduced readmission rate. A repeat nutrition survey¹³ published in 1993 by the same institution that initially drew attention to the "skeleton in the hospital closet" in the 1970's confirmed the importance of nutritional status in predicting length of hospital stay and mortality, but found that nutritional status no longer declined during prolonged hospitalization as much as it had previously. This was in part attributed to the efforts of a multidisciplinary nutrition support service.

In term of cost-effectiveness, a convincing agreement (Table 3) can be made that nutrition support teams significantly reduce hospital costs.¹⁴⁻¹⁶ This becomes critical in an era of limited resources and necessity for cost-containment. Furthermore, acceptance of the team approach appears to be growing. In 1991, a national US. survey of large (150+ beds) acute care hospitals¹⁷ reported that 484 (29%) of 1680 respondents had a nutrition support team. Of these, 21% had been active for over 10 years and 63% were in operation for 5 or more years. The older, more successful

Table 2. Expanded functions of nutritional support team

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1. In-hospital patient care
 - nutritional assessment
 - therapeutic planning and implementation
 - clinical and laboratory monitoring
 - documentation
 2. Ambulatory "home" care for patients
 - nutritional assessment
 - therapeutic planning and implementation
 - clinical and laboratory monitoring
 - documentation
 - liaison between patients/attending physicians and home care providers/vendors.
 3. Educational efforts
 - patient/family counseling
 - development of educational materials
 - conferences for health care personnel
 - community education programs
 4. Administrative efforts
 - development of procedural protocols
 - review/revision of policies and procedures
 - development and maintenance of nutrition support formulary
 5. Quality assurance/improvement
 - development of quality indicators
 - data collection and analysis
 - design and implementation of corrective measures
 6. Research
 - design and conduct of nutritional research
 - data collection and analysis
 - publication
-

teams were generally found in larger centers with university and/or medical school affiliation. They were more likely to have mandatory consultation for parenteral nutrition and to manage a greater percentage of the hospital's nutrition support patients. Their members devoted more time to nutrition support and were more likely to be financed independently by the nutrition support service.

Whether the conceptual model of a team approach to nutrition support has universal applicability remain to be seen. National and regional circumstances obviously vary. It would appear reasonable, however, to consider some variant of this approach if hospital malnutrition and/or inefficient use nutrition support can be documented.

2 *The nutrition support team*

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4 The nutrition support team

Table 3. Cost-beneficial effects of the nutrition support team

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1. Recognition and treatment of malnutrition
 - reduction of morbidity
 - shortened length of hospital stay
 2. Appropriate use of enteral and parenteral therapies
 - preference for less expensive enteral route when possible
 - institution of more expensive parenteral route only when indicated
 - avoidance of costly wastage due to error
 3. Cost-effective selection of products
 4. Avoidance of mechanical and metabolic complication
 - reduction of morbidity
 - shortened length of hospital stay
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