

Invited Lecture

IL1

The Role of the Dietitian in Nutrition Support

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History: In the United States the dietitian has contributed to the provision of specialized nutrition support since the 1970's. At this time the dietitian's role included performing nutritional assessments, patient education, selection and preparation of enteral formulas, and monitoring tolerance to enteral formulas and oral intake. By the 1980's the dietitian's role was well established and many dietitians were also participating in the practice of parenteral nutrition. By 1991 the American Dietetic Association stated that "the dietitian is a primary resource for the care of patients who require parenteral or enteral support." This position was in agreement with the American Society of Parenteral and Enteral Nutrition (A.S.P.E.N.).

Nutrition Support Teams: Teams may consist of a multidisciplinary committee, or a formal team organization with the physician or dietitian commonly being in the role of the Director. The team might also be within a department such as dietetics, pharmacy, and surgery or medicine. There is strong agreement that the roles of each member of the team be well delineated and understood by all the team members and the professions with whom they work. Each discipline assesses and monitors patients from the perspective of their respective discipline and shares their expertise to determine a treatment plan.

Role of the Dietitian:

Skills: The tasks involved in the provision of nutrition support, which require specialized clinical skills have been identified. These skills are 1) screening for and assessment of nutritional status, fluid status and gastrointestinal function, 2) development of a therapeutic plan including the selection of the enteral formula, determination of the route of delivery, and determination of the macronutrient, micronutrient, and electrolyte composition of parenteral nutrition, 3) implementation of the plan which may include establishing nasoenteric feeding access, prescription of enteral formulas, therapeutic amounts of vitamins, minerals and trace elements, intravenous fluid therapy, parenteral nutrition prescriptions for physician approval or co-signature and coordination of transitional feedings 4) patient monitoring, including ordering and evaluation of relevant laboratory data and evaluation of medications as they relate to the nutritional therapy. Monitoring also extends to the administration of the formulas and assurance that the prescribed amounts are being infused. 5) Professional development which includes participation in medical rounds, research and patient education.

Settings: The dietitian in nutrition support may function in clinics, long term care facilities and home care, in addition to the traditional setting of the hospital.

Administration: Dietitians now set standards of care, determine policies and procedures for specialized nutrition and participate in quality improvement projects.

Significance of the dietitian's contributions to nutrition support practice: The dietitian's role in the assessment, therapeutic plan, implementation and monitoring can contribute to a successful outcome by insuring the administration of all the prescribed nutrients, avoiding complications from over- and underfeeding, insuring cost effective practices in the monitoring of patients, such as laboratory monitoring, and the effective transition to alternative feeding regimes.

Education: Surveys have demonstrated that advanced degrees and education are not the primary determinants of a dietitian's skill in nutrition support. These dietitians do tend to have advanced degrees, however. On-the-job training, supervised experience and additional, on-going, clinical and didactic experiences contribute most to the development of the necessary skills for competence in the practice of nutrition support. Many dietitians become Certified Nutrition Support Dietitians through an exam administered by A.S.P.E.N. Participation in professional organizations which focus on the practice of specialized nutrition support can provide the continuing education and support

needed also. However, there is general consensus that minimal educational standards should be established and postgraduate programs leading to specialization in nutrition should be identified.

Future roles for the dietitian: The priorities for the future roles of the dietitian will focus on outcome and cost controls. Prescriptions for parenteral nutrition, physical assessment, participation in decisions regarding end of life therapies, insertion of nasogastric feeding tubes at the bedside or in the clinic will be skills to be acquired by the dietitian. Dietitians will need to stay current in technological advances, such as computerized order writing, nutritional gene expression and immunomodulation formulas.

IL2

Clinical Nutrition in the 21st century

Prof. Dr. Peter Fürst, Bonn

The evolution of nutrition science from clinical studies by Hippocrates in the fourth century BC to current preoccupation with molecular biology and genetic is a unique odyssey (Fürst, 1996). Currently we are moving from bench to bedside—from concept to clinical application and from discovery to dissemination. Translating novel scientific insights into new approaches for prevention, diagnosis and treatment of disease is the ultimate goal of current and future medical research (Fontanarosa and DeAngelis, 2001).

Modern clinical nutrition might be defined as a scientific and clinical discipline concerned with diseases that are caused by abnormalities in the intake, intestinal absorption and metabolism of dietary constituents. It is feasible to treat nutrition that disorders by changes in the amounts and composition of nutrients, by modification of the responses to diseases/injury and infection and/or nutritional treatment and by utilization of novel substrates and endogenous mediators while maintaining the hormonal milieu.

Along new approaches dietary manipulations should be noted which may influence outcome after infection and injury by altering production of inflammatory mediators and disease activity. Reduction of exogenous energy may have beneficial effect on lifespan, development of degenerative disease, anti-immune processes, renal injury susceptibility to infection and survival rate. Hyperglycemia or relative insulin deficiency during critical illness may confer a predisposition to complications. Intensive insulin therapy to maintain blood glucose at or below 110mg % reduces morbidity and mortality among critically ill patients (van den Berghe et al., 2001, NESM, 2001). New approaches include also the move to rely on nutritional teams; they monitor nutritional policy, audit both morbidity and costs and ensure the most appropriate method at adjuvant nutritional therapy for the individual patients. Future therapies also consider preoperative nutritional supplementation, thus practicing preventative nutrition. Molecular biology and genetics will contribute substantially to the education of pathogenesis of disease and in more distant future to the therapy of metabolic and nutritional disorders. Finally the implication of recognizing nutritional support as a medical therapy and assessing its provision to the basis of accepted ethical principles are far reaching future approaches (MacFee, 2001).

Conclusion:

Just over a century ago the relationship between nutrition and illness might best have been summed up by the old English proverb: "stuff a cold and starve a fever". Today, our understanding of that relationship has evolved to investigations related to exploration of the diet in regulation of gene expression. Modern clinical nutrition is a rapidly developing ever changing discipline. Continued rigorous critical evaluation of assumptions and hypotheses about relationships between diet, nutrition, health and disease will eventually provide us with reliable knowledge of what can and what cannot be achieved through nutrition.