



# CLINICAL COMMUNICATOR

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## SPECIAL POINTS OF INTEREST

*A registered Dietitian (RD) has board-certified credentials, but a "nutritionist" may or may not have similar professional credentials.*

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## The Role of the Dietitian in Monitoring Home Nutrition Support Patients

Prior to the advent of home nutrition support, dehydration and malnutrition caused significant medical decline and even death. With advances in medical technology, home infusion companies now provide clients needing nutrition support services with products, information and accessible health professionals. Some medical center clinics manage their own home nutrition support patients, but home care providers increasingly employ their own nutrition support-trained individuals to assess, start, and monitor those home nutrition support patients who do not have access to outpatient nutrition support teams. While pharmacists and nurses receive nutrition support training in school and traineeships, registered dietitians can add certain skill sets in the identification and treatment of malnutrition to help improve patient outcomes. This article will review the role of the dietitian in monitoring home parenteral and enteral nutrition patients.

### Nutrition Support Training of the Dietitian

A Registered Dietitian (RD) possesses a Bachelor of Science degree, which includes specific coursework defined by the Commission on Accreditation for Dietetics Education (CADE). Among the list of required courses, Biochemistry and Nutrition in Disease are the two foundation courses for building nutrition support knowledge. Along with the college degree, 1200 hours of CADE-accredited supervised practice and successful completion of a national registration exam are required before "RD" can be placed behind a signature. Unlike an RD, a "nutritionist" may or may not have board-certified credentials depending on state licensure laws. Some states have laws that define the scope of practice for licensed nutritionists, while a few others only license the term and do not include a scope of practice.

In 1984 the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) established the National Board of Nutrition Support Certification (NBNSC) to administer the Certified Nutrition Support Clinician (CNSC) program. Currently the NBNSC certifies testing for Physicians, Nurses and Dietitians, and as of 2008 all disciplines will take the same exam. As current CNSD (dietitian), CNSN (nurse) and CNSP (physician) certifications expire over the next 4 years, individuals will sit for the CNSC exam before changing their credentials. As of May 2008, NBNSC declared 2766 nutrition support certified individuals (1). The Board of Pharmaceutical Specialties certifies pharmacists as Board Certified Nutrition Support Pharmacist with the initials BCNSP.

### Role of the Nutrition Support Dietitian

Dietitians review the medical history, laboratory measures, medication list, anthropometric measurements, and progress notes to identify any effects of disease on nutrient metabolism before interviewing a nutrition support patient. During the initial interview, dietitians may question weight history, previous diet tolerance, previous bowel habits, OTC medication and/or herbal supplement intake, fluid delivery, current bowel habits and urinary output to determine the adequacy of nutrient delivery. Macronutrient (protein, carbohydrate, and fat), micronutrient (vitamins and minerals), and fluid goals are established.

Dietitians are not individually functioning providers, but collaborate with physicians, pharmacists, and home health nurses to ensure nutritional goals are consistent for the patient. Dietitians can make recommendations, but physicians decide the therapeutic plan. Even though enteral nutrition products are over-the-counter and not regulated by the FDA, dietitians cannot order enteral nutrition formulas without the signature of a licensed prescriber.



**Home Enteral Nutrition (HEN) Monitoring**

Initial nutrition assessments of HEN patients may include the evaluation of product tolerance, the establishment of nutritional targets and goals, an assessment of hydration and nutritional risk factors, and a review of the “mechanics” of feeding. Dietitians assess tolerance of enteral feedings by interviewing patients and/or caregivers. Unlike in a hospital setting, in the home environment gastric residual volume may be measured rarely, especially in alert patients who can identify nausea or bloating symptoms. Dietitians assist with troubleshooting bowel dysfunction that may be related to enteral feeding formulas, speed of administration, improper medication dilution or improper formula handling. They may offer advice for clearing occluded feeding tubes or offer suggestions for adapters to improve bag-to-tube connections to allow more consistent formula delivery.

Dietitians, with input from patients, caregivers, and other healthcare providers, determine long-term and short-term nutritional goals such as weight changes, healed wounds, improved strength and well-being, and improved bowel habits, and then tailor the feeding regimen to fit a patient’s lifestyle. Unlike in-patient dietitians, home nutrition support dietitians have the advantage of being able to track weight over time to determine if calorie needs are being met. However, measurements such as laboratory monitoring may be a rare luxury in the home setting. Another challenge in the home setting is that many enterally-fed patients are bed-bound or do not have access to wheelchair scales, so other strategies to estimate weight change may be used, such as measuring abdominal girth, thigh or upper arm circumference or observing changes in the clavicular region or other visible bony area. Home nutrition support dietitians may plot pediatric patients’ measurements on growth charts to follow growth trends over time.

**Home Parenteral Nutrition (HPN) Monitoring**

Initial dietitian assessments of HPN patients may include many of the same evaluation techniques as HEN patients, but more emphasis is placed on potential micronutrient imbalance determination. Dietitians assess a patient’s nutritional status and estimated requirements, considering disease and/or anatomical effects on metabolism. Similar to HEN monitoring, weights and/or growth measurements are tracked over time to evaluate sufficient calorie delivery. Nutrition goals are reviewed and adjusted at each follow-up intervention.

HPN patients, like enteral patients, must be able to tolerate their nutrition therapy. For HPN patients this could be defined as the absence of metabolic or mechanical complications related to HPN. Even though bowel movement discussion may be less detailed in HPN evaluations, urine and stool output are important factors when assessing a patient’s fluid and micronutrient needs so that dehydration and potential mineral imbalances are avoided. For example, short bowel patients may have increased risk for zinc deficiency and dehydration because of stool losses. Dietitians may take diet histories in HPN patients to estimate fluid and micronutrient intake. Some HPN patients may be able to absorb micronutrients in their oral diet, which could impact lab results in conjunction with parenteral nutrition.

Dietitians monitor weight changes, blood sugar results, visceral protein measures, liver function tests, and/or wound healing to determine appropriate adjustments in macronutrients. They can assist the patient during the transition from continuous HPN to a cyclic HPN infusion schedule. Interventions may include steps to avoid exceeding the liver’s carbohydrate metabolism capacity and evaluating glycemic control. Dietitians may help evaluate the need for continued therapy and assist during the transition to HEN or oral diets.

Long term HPN patients may need to be monitored for potential complications that arise only after several months. These complications could include issues related to macronutrients such as liver cholestasis or parenteral nutrition-associated liver disease or issues related to micronutrients such as metabolic bone disease or anemia. Along with other team members, dietitians help monitor micronutrient deficiencies or excesses and may be the team member that requests ferritin levels, trace element serum measurements or bone densitometry for long-term HPN patients.

**Home Nutrition Support Team Approach**

Just as any group is strengthened by diversity in its members, a home nutrition support team composed of multi-disciplinary healthcare professionals can surround home patients with informed attention to the detailed management of nutrition support. Pharmacists, nurses, dietitians and social workers add their own perspectives with the mission of providing the best quality supportive care to help patients thrive.

Reference:

NBNSC Fact Sheet <http://www.nutritioncare.org/NBNSC>. Accessed April 2009