

Standards of Practice for Nutrition Support Pharmacists

American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.)
Task Force for Revision of Nutrition Support
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Introduction

The American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) is a scientific society whose members are healthcare professionals—physicians, dietitians, nurses, pharmacists, other allied health professionals, and researchers—who are dedicated to improving patient care by advancing the science and practice of nutrition support therapy. A.S.P.E.N. envisions an environment in which every patient receives safe, efficacious, and high quality patient care.

A.S.P.E.N. has developed these standards as general guidelines for registered pharmacists involved in providing nutrition support therapy. These “Standards of Practice for Nutrition Support Pharmacists” represent an update of a similar set of standards from A.S.P.E.N. that were published in 1999.¹ A.S.P.E.N. has published Pharmacist Standards since 1987.

A.S.P.E.N. defines standards as a “benchmark representing a range of performance of competent care that should be provided to assure safe and efficacious nutrition care.”² Standards are documents that define the structure needed to provide competent care. They usually outline in detail professional responsibilities as they relate to patient assessment, education, care plan development, implementation, clinical monitoring, evaluation, and professional issues. A.S.P.E.N. publishes discipline-based (e.g., physician, dietitian, nurse, pharmacist) and practice-based (e.g., adult hospitalized patients, pediatric hospitalized patients, home care, long-term care) standards.

1. Audience for Standards:

These discipline-based standards apply to those Nutrition Support Pharmacists (NSPs) who devote a significant part

of their professional time to nutrition support activities. These activities may include direct patient care, research relevant to nutrition support therapy, teaching, and administrative responsibilities. These standards are not intended for the pharmacist who occasionally provides nutrition support to patients, but rather to those who by virtue of education, training, experience, and personal interest wish to be identified as an NSP and provide expertise in collaboration with other healthcare professionals.

2. Level of Care:

These Standards of Practice represent a range of competencies that should be provided by any NSP within or outside the context of a formal nutrition support service or team. The application of standards in any individual case should be determined by the best judgment of the NSP, as well as their position and practice environment.

The Standards are presented in the most generic terms possible. Details of patient care are left to the discretion of the individual NSP, healthcare professionals, and nutrition support services or teams. The Standards aim to provide a basis for sound and efficient nutrition care for patients in all healthcare settings in need of nutrition support therapy. Terminology to be included in each standard are specified as:

- a. “*Shall*”: indicates standards to be followed strictly.
- b. “*Should*”: indicates that among several possibilities one is particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required.
- c. “*May*”: indicates a course of action which is permissible within the limits of recommended practice.

These Standards of Practice for the NSP do not constitute medical or other professional advice and should not be taken as such. The information presented in these standards is not a substitute for the exercise of judgment by the healthcare professional. These standards have been reviewed and approved by the A.S.P.E.N. Clinical Practice Committee and Board of Directors.

The mission of the pharmacist is to provide pharmaceutical care which is the direct, responsible provision of medication-related care for the purpose of achieving definite outcomes that improve a patient's quality of life.³ Nutrition support pharmacy is a specialty that focuses on optimizing nutrition support therapy outcomes. The NSP works collaboratively with other disciplines in a variety of settings along the continuum of care and across all developmental stages. The practice of nutrition support pharmacy varies with the individual pharmacist's position and practice environment. The scope of practice may include but is not limited to: direct patient care; consultation with other healthcare professionals including entrepreneurial/industry; education of patients/caregivers, students, colleagues, and the public; oversight of the compounding and delivery of safe and effective parenteral nutrition formulations; participation in research activities and performance improvement; and administrative functions. Traditional roles for the NSP may include working as a member of an interdisciplinary nutrition support service or team. Due to the variation of NSP roles, clinical practice may not apply to all pharmacists as some may not practice in a patient care environment, hence the use of "may" in the clinical practice standards.

These Standards of Practice for the NSP should be used in conjunction with the following A.S.P.E.N. publications:

American Society for Parenteral and Enteral Nutrition Board of Directors and Standards Committee: Teitelbaum D, Guenter P, Howell WH, et al. Definition of terms, style, and conventions used in A.S.P.E.N. guidelines and standards. *Nutr Clin Pract.* 2005;20:281-285.

American Society for Parenteral and Enteral Nutrition Board of Directors, and Task Force on Standards for Specialized Nutrition Support for Hospitalized Pediatric Patients: Wessel J, Balint J, Crill C, Klotz K. Standards for specialized nutrition support: hospitalized pediatric patients. *Nutr Clin Pract.* 2005;20:103-116.

American Society for Parenteral and Enteral Nutrition Board of Directors, Task Force on Standards for Specialized Nutrition Support for Adult Residents of Long-Term Care Facilities: Durfee SM, Gallagher-Allred C, Pasquale JA, Stechmiller J. Standards for specialized nutrition support for adult residents of long-term care facilities. *Nutr Clin Pract.* 2006;21:96-104.

American Society for Parenteral and Enteral Nutrition Board of Directors and the Standards for Specialized Nutrition Support Task Force: Kovacevich DS, Frederick A, Kelly D, Nishikawa R, Young L. Standards for specialized nutrition support: home care patients. *Nutr Clin Pract.* 2005;20:579-590.

Joint Standards Task Force of A.S.P.E.N. and the American Dietetic Association Dietitians in Nutrition Support Practice Group: Russell M, Stieher M, Brantley S, et al. American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) and American Dietetic Association (ADA): Standards of Practice and Standards of Professional Performance for Registered Dietitians (Generalist, Specialty, and Advanced) in Nutrition Support. *Nutr Clin Pract.* 2007;22:558-586.

American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) Board of Directors and Nurses Standards Revision Task Force: DiMaria-Ghalili RA, Bankhead R, Fisher AA, Kovacevich D, Resler R, Guenter PA. Standards of practice for nutrition support nurses. *Nutr Clin Pract.* 2007;22:458-465.

American Society for Parenteral and Enteral Nutrition Board of Directors, Task Force on Standards for Specialized Nutrition Support for Hospitalized Adult Patients: Russell MK, Andrews MR, Brewer CK, Rogers JZ, Seidner DL. Standards for specialized nutrition support: adult hospitalized patients. *Nutr Clin Pract.* 2002;17:384-391.

American Society for Parenteral and Enteral Nutrition, and Task Force on Standards for Nutrition Support Physicians: Seashore JH, McMahon M, Wolfson M, D'Angelo DW. Standards of practice for nutrition support physicians. *Nutr Clin Pract.* 2003;18:270-275.

A.S.P.E.N. Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients. *JPEN J Parenter Enteral Nutr.* 2002;26(Suppl):1SA-138SA. Errata 2002;26:144.

Mirtallo J, Canada T, Johnson D, et al; Task Force for the Revision of Safe Practices for Parenteral Nutrition. Safe practices for parenteral nutrition. *JPEN J Parenter Enteral Nutr.* 2004;28: S39-S70. Errata 2006;30:177.

Chapter I. Nutrition Assessment

Standard 1.1 *Assessment* In collaboration with other healthcare professionals, the NSP providing direct patient care shall participate in nutrition assessment to

identify a patient who is malnourished, or who is at risk of becoming malnourished as follows:

- 1.1.1 The patient or caregiver may be interviewed to obtain the medical, surgical, nutrition, medication, psychosocial, and socioeconomic history;
- 1.1.2 The medical record shall be reviewed for disease states (including clinical condition), medical/surgical therapies, pharmacotherapy, laboratory findings, and physical findings;
- 1.1.3 Physical and biochemical assessment parameters relevant to nutrition status may be measured, and shall be reviewed and interpreted;
- 1.1.4 The NSP should document or verify the documentation of the patient's nutrition status in the medical record.

Standard 1.2 Assess Nutrient Requirements In collaboration with other healthcare professionals, the NSP shall participate in the assessment of the qualitative and quantitative nutrient requirements of the patient.

- 1.2.1 Daily energy and protein requirements should be estimated or measured, and calories should be appropriately distributed between carbohydrate, fat, and protein.
- 1.2.2 Daily vitamin, mineral, and fluid/electrolyte requirements should be assessed.
- 1.2.3 The NSP should document or verify documentation of the patient's nutrition requirements in the medical record.

Standard 1.3 Nutrient and Drug Interactions The NSP shall assess subjective and objective data to prevent and/or identify drug-drug, drug-nutrient, and nutrient-nutrient interactions. In addition, interference of laboratory values caused by specific drugs or nutrients shall be carefully reviewed and communicated to other healthcare providers.

Standard 1.4 Patient Candidacy for Nutrition Support Therapy In collaboration with other healthcare professionals, the NSP shall participate in the assessment of the patient's candidacy for nutrition support therapy.

- 1.4.1 The NSP may evaluate patient-specific factors (e.g., disease state, clinical condition, risk factors, prognosis, and feasibility of establishing a feeding access device).
- 1.4.2 The NSP should apply clinical practice guidelines (e.g., A.S.P.E.N. Clinical Guidelines⁴) in determining the appropriateness of nutrition support therapy for the individual patient.

- 1.4.3 The NSP should apply pharmacoeconomic analysis in determining the appropriateness of nutrition support therapy for the individual patient.

Standard 1.5 Assess Educational Needs The NSP may participate in assessment of educational needs of healthcare professionals in practice or in training, the patient, caregivers, and others regarding nutrition support therapy.

Chapter II. Development and Implementation of the Nutrition Care Plan (NCP)

Standard 2.1 The NSP shall participate in the development of the individualized NCP.

- 2.1.1 The NCP shall be developed in collaboration with other healthcare professionals and the patient and/or caregiver.
- 2.1.2 The NCP shall be based on the individual patient's nutrition assessment, clinical condition, and treatment goals.
- 2.1.3 Each NCP shall be developed from patient-specific assessment data as well as evidence-based literature.
- 2.1.4 The NSP shall promote therapy that provides optimal, appropriate, economic, and resource-efficient care. The NCP should support the medical care plan and be congruent with established organizational policies, procedures, and protocols.

Standard 2.2 The NSP may document the NCP in the medical record.

Standard 2.3 In collaboration with other healthcare professionals, the NSP may recommend the preferred route for administration of nutrition support therapy based on the patient's medical condition, objectives of therapy, feasibility of pharmaceutical formulations, psychosocial issues, environment of care, and potential home or alternate site care needs.

Standard 2.4 The NSP may recommend a patient-specific feeding formulation, rate of administration (e.g., initiation, advancement, discontinuation), and mode of administration (e.g., intermittent, cyclic, bolus, continuous) on the basis of the patient's clinical information, disease process, and compatibility with the route of access.

Standard 2.5 The NSP shall recommend pharmacologic adjuncts to nutrition support therapy where applicable (e.g., H₂ antagonists, prokinetic agents, appetite stimulants, anti-diarrheal agents, bisphosphonate therapy).

Standard 2.6 The NSP may write orders for feeding formulations and laboratory tests, and adjust regimens

based on response to therapy, changing clinical conditions, and nutrition parameters as delineated by clinical privileges and applicable professional licensure laws.

Standard 2.7 The NSP shall participate in the implementation of NCP to promote appropriateness, safety, and accuracy as well as economic and resource-efficient care.

Standard 2.8 The NSP may recommend equipment and supplies based on the route of administration, the type of feeding access device, the desired infusion rate, the clinical situation, and the safety and cost-effectiveness based on the individual needs of the patient and family and/or caregiver.

Standard 2.9 The NSP should use interventions designed to prevent, detect, and manage complications related to the feeding formulation and access devices.

Standard 2.10 The NSP shall use interventions designed to prevent, detect, and manage drug and nutrient interactions.

Standard 2.11 The NSP should communicate the individualized NCP with other healthcare providers to promote continuity of care within and outside the organization.

Standard 2.12 The NSP may participate in the education of the patient and/or caregivers regarding the NCP.

Chapter III. Compounding the Feeding Formulation

Standard 3.1 The NSP shall participate in the development of and adherence to policies and procedures related to the compounding and delivery of safe and effective parenteral feeding formulations.

3.1.1 Parenteral nutrition formulations shall be compounded according to standard aseptic technique.^{5,6}

3.1.2 Labeling shall follow the standard label format for patients as recommended in *Safe Practices for Parenteral Nutrition*.⁷

3.1.3 Methods for detection and/or prevention of formulation incompatibilities or instability shall be identified and employed.

3.1.4 The NSP should participate in staff training and monitoring of automated compounding devices related to parenteral nutrition.

Standard 3.2 The NSP may oversee policies and procedures related to the compounding and delivery of safe and effective enteral feeding formulations.

Chapter IV. Monitoring

Standard 4 The NSP shall monitor patients receiving nutrition support therapy as appropriate to the individual's

position and practice environment, taking into account the services provided by other healthcare professionals. Monitoring parameters are chosen relative to the goals of the NCP. Monitoring parameters should optimize therapy and aim to achieve optimal outcomes for the patient.

Standard 4.1 Monitoring parameters may include but are not limited to:

- Nutrient intake
- Tolerance of nutrition therapy
- Inspection of the feeding formulation
- Laboratory parameters pertinent to clinical status and nutrition status, including trace element and/or micronutrient deficiency
- Clinical parameters which may reflect alterations in substrate utilization or nutrient requirements, including trace elements and/or micronutrients
- Assessment of major organ function based on diagnostic test results and clinical status
- Medications
- Changes in gastrointestinal tract function
- Weight and growth rate as appropriate to the individual
- Fluid balance

4.1.1 Any deviation from established NCP goals or change in the patient's clinical condition shall be identified.

4.1.2 The NSP may document results from the monitored parameters, including abnormal values and potential complications, in the medical record.

4.1.3 The NSP should participate in developing the appropriate follow-up nutrition support therapy regimen to promote appropriate progress with respect to the NCP.

4.1.4 The NSP shall play a role in evaluating all existing or potential drug and nutrient interactions that exist, and develop a plan to manage such interactions.

4.1.5 The NSP should participate in evaluating a patient's ability to transition to alternative modes of nutrition support.

Standard 4.2 The NSP should evaluate the effectiveness of the nutrition support therapy provided.

4.2.1 The NSP shall monitor appropriateness of parenteral nutrition support orders.

4.2.2 The NSP may evaluate appropriateness of enteral nutrition support orders.

4.2.3 The NSP should evaluate the effectiveness of nutrition support therapy.

4.2.4 The NSP should track complications associated with parenteral nutrition support therapy.

4.2.5 The NSP may track complications associated with enteral nutrition support therapy.

Chapter V. Management of Nutrition Support Services

- Standard 5.1 The NSP may participate in administrative management of the nutrition support therapy program in collaboration with other healthcare professionals.
- 5.1.1 The NSP shall participate in the development, documentation, and periodic review and revision of organizational policy, procedures, and protocols related to nutrition support therapy, as appropriate to the individual's position and practice environment.
- 5.1.2 The NSP shall promote evidence-based standards for nutrition care practices.
- Standard 5.2 The NSP should serve as a member of, and may coordinate or manage the service, team, or committee that coordinates provision of nutrition support therapy.
- 5.2.1 The NSP shall establish collegial relationships with other healthcare professionals in order to facilitate the work of this service, team, or committee.
- 5.2.2 The NSP shall promote continuity of care throughout the healthcare system and in the community for patients receiving nutrition support therapy. To accomplish this, the NSP may act as liaison between the nutrition support program and the medical staff, home care organization, third-party payers, hospital administration, and others, as appropriate.
- 5.2.3 The NSP may make referrals to or receive referrals from other members of the healthcare team, as appropriate, to maintain and provide continuous optimal patient care.
- Standard 5.3 The NSP should participate in the development and maintenance of an appropriate and cost-effective nutrition support formulary, as appropriate to the individual's position, education, and practice environment.
- 5.3.1 When involved in these activities, the NSP shall participate in the review and selection of a parenteral nutrition formulary.
- 5.3.2 The NSP may participate in the review and selection of an enteral nutrition formulary.
- 5.3.3 The NSP may participate in the review and selection of supplies and equipment for safe administration of nutrition support therapy, including but not limited to such items as infusion pumps and enteral access devices.
- Standard 5.4 The NSP may participate in performance and safety improvement efforts related to nutrition support therapy.
- 5.4.1 When involved in these activities, the NSP shall participate in evaluating appropriateness of interdisciplinary nutrition care.

- 5.4.2 The NSP may participate in designing, measuring, analyzing, and implementing performance and/or safety improvement projects.

Chapter VI. Advancement of Nutrition Support Pharmacy Practice

- Standard 6.1 The NSP shall develop collaborative relationships with colleagues, students, patients, and caregivers in order to advance the field of nutrition support.
- 6.1.1 The NSP shall establish collegial relationships with other healthcare professionals in order to exchange knowledge and skills.
- 6.1.2 The NSP should build networks, as appropriate, with members of other professional organizations and governmental agencies to promote optimal nutrition care.
- 6.1.3 The NSP should work to influence decision-making bodies to improve nutrition-related patient care, health services, and policies.
- 6.1.4 The NSP should provide and/or participate in intradisciplinary and interdisciplinary nutrition support-related education through formal and informal programs.
- 6.1.5 The NSP may provide and/or participate in intradisciplinary and interdisciplinary student learning experiences in the classroom and/or clinical settings.
- Standard 6.2 The NSP should promote communication of nutrition-related information and advancement of the nutrition support pharmacy specialty through writing, publishing, and/or presentations for professionals or lay audiences.
- Standard 6.3 The NSP may design, develop or evaluate nutrition-related innovations, including new products and equipment used in the nutrition care process (e.g., infusion control devices, dressing materials, and feeding formulations), to effect positive changes in practice and outcomes.
- Standard 6.4 The NSP shall maintain professional competence by participating in formal and continuing education to enhance nutrition support therapy competence.
- 6.4.1 The NSP shall participate in systematic peer review as appropriate.
- 6.4.2 The NSP shall take action to achieve goals identified during the evaluation process.
- 6.4.3 The NSP may use successful completion of a psychometrically validated certification program or examination pertinent to nutrition support pharmacy to provide evidence of professional competency.
- Standard 6.5 The NSP shall routinely evaluate one's own nutrition support practice in relation to professional

practice standards and guidelines, relevant statutes, rules, and regulations as appropriate to the NSP's position and practice environment.

Chapter VII. Research

Standard 7.1 The NSP shall promote integration of research findings into practice.

Standard 7.2 The NSP shall use the best available evidence, including research findings, and clinical practice guidelines such as A.S.P.E.N. Clinical Guidelines,⁴ to guide practice decisions and nutrition-related policies and procedures.

Standard 7.3 The NSP may actively participate in research activities at various levels appropriate to the NSP's level of education and position. These activities may include but are not limited to:

- Identifying nutrition-related clinical problems specific to pharmacy and/or nutrition support research
- Conducting nutrition-related research
- Participating in a formal research committee
- Analyzing and interpreting nutrition-related research for application to practice
- Developing policies, procedures, protocols, and standards of practice based on nutrition-related research findings
- Disseminating research findings through activities such as presentations, publications, consultation, and journal clubs
- Sharing nutrition-related research activities and/or findings with peers and others
- Participating in data collection

Chapter VIII. Ethics

Standard 8.1 Pharmacists are members of the healthcare team who are entrusted with the responsibility of providing patient care that promotes optimal medication and nutrition support therapy outcomes. The NSP may refer to the Code of Ethics of individual state pharmacist societies and to the American Association of Colleges of Pharmacy (AACP) Oath of a Pharmacist.⁸

Indicators include but are not limited to the following:

- 8.1.1 The NSP shall maintain confidentiality of patient information.
- 8.1.2 The NSP shall encourage patients to participate in their own healthcare decisions.
- 8.1.3 The NSP shall act with honesty and integrity within professional relationships.
- 8.1.4 The NSP shall recognize potential and actual conflicts of interest, and withdraw from participation in decisions or activities that may be influenced by conflicts of interest.
- 8.1.5 The NSP should work with an interdisciplinary healthcare team to resolve moral, ethical, and legal dilemmas, while developing appropriate solutions.

References

1. A.S.P.E.N. Board of Directors. Standards of practice for nutrition support pharmacists. *Nutr Clin Pract.* 1999;14:275-281.
2. American Society for Parenteral and Enteral Nutrition Board of Directors and Standards Committee: Teitelbaum D, Guenter P, Howell WH, Kochevar ME, Roth J, Seidner DL. Definition of terms, style and conventions used in A.S.P.E.N. guidelines and standards. *Nutr Clin Pract.* 2005;20:281-285.
3. American Society of Hospital Pharmacists. ASHP statement on pharmaceutical care. *Am J Hosp Pharm.* 1993;50:1720-1723.
4. A.S.P.E.N. Board of Directors and the Clinical Guidelines Task Force. Guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients [published correction appears in *JPEN J Parenter Enteral Nutr.* 2002;26:144]. *JPEN J Parenter Enteral Nutr.* 2002;26(Suppl):1SA-138SA.
5. United States Pharmacopeia, 29th rev. USP General Information Chapter <797>. Pharmaceutical Compounding—Sterile Preparations. Rockville, MD: The United States Pharmacopeial Convention, 2006.
6. American Society Health-System Pharmacists. ASHP guidelines on the safe use of automated compounding devices for the preparation of parenteral nutrition admixtures. *Am J Health-Syst Pharm.* 2000;57:1343-1348.
7. Mirtallo J, Canada T, Johnson D, et al; Task Force for the Revision of Safe Practices for Parenteral Nutrition. Safe practices for parenteral nutrition [published correction appears in *JPEN J Parenter Enteral Nutr.* 2006;30:177]. *JPEN J Parenter Enteral Nutr.* 2004;28:S39-S70.
8. American Association of Colleges of Pharmacy. Oath of a Pharmacist. June 26, 1994. <http://www.aacp.org/site/tertiary.asp?TRACKID=&VID=2&CID=686&DID=4339>. Accessed May 4, 2007.