Stanards for Nutrition Support Pharmacists

INTRODUCTION

A.S.P.E.N. BOARD OF DIRECTORS

The American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) is a professional Society of physicians, nurses, dietitians, pharmacists, and nutritionists committed to promoting quality patient care, education, and research in the field of nutrition and metabolic support in all health care settings. The diversity of our membership emphasizes both the importance of good nutrition in clinical practice and the necessity for a team approach. These "Standards for Nutrition Support Pharmacists" represent an update of a similar 1993 set of standards from A.S.P.E.N. They present a fair consensus of A.S.P.E.N.'s membership of the range of performance of competent care that should be subscribed to by any pharmacist providing nutrition support services.

A.S.P.E.N. has developed these standards as the general guidelines for health professionals. Their application in any individual case should be determined by the best judgment of the professional. The standards represent a consensus of A.S.P.E.N.'s members as to the range of activities (as appropriate to the individual's position, education, and practice environment) a Nutrition Support Pharmacist may perform and are the minimal level of practice necessary to assure safe and effective enteral and parenteral nutrition care. The activities described in this document reflect information obtained from a survey of board certified nutrition support pharmacists.

These standards do not constitute medical or other professional advice and should not be taken as such. To the extent that the information published herein may be used to assist in the care of patients, this is the result of the sole professional judgment of the attending health professional whose judgment is the primary component of quality medical care. The information presented in these standards is not a substitute for the exercise of such judgment by the health professional.

These standards have been developed, reviewed, and approved by the A.S.P.E.N. Standards Committee, Pharmacists' Committee, and the A.S.P.E.N. Board of Directors.

Definitions

The following terms that are used in these standards have been defined previously in "Definitions of Terms Used in A.S.P.E.N. Guidelines and Standards"1 or by other organizations as referenced.

Admixture. The result of combining two or more fluids.

Continuous Quality Improvement (CQI). A systematic approach to assessing and improving the effectiveness and reliability of processes (nutrition care) using a scientific methodology and teamwork.

Diet. A prescribed allowance of food or nutrients provided via the oral route.

Drug-Disease Interaction. An event that occurs when a drug's activity, availability, or effect is altered by a disease or condition.

Drug-Drug Interaction. An event that occurs when a drug's activity, availability, or effect is altered by another drug.

Drug-Nutrient Interaction. An event that occurs when nutrient availability is altered by a mediation or when a drug effect is altered or adverse reaction caused by the intake of nutrients.

Enteral Nutrition. Nutrition provided via the gastrointestinal tract.

Oral. Enteral nutrition taken by mouth.

Tube. Enteral nutrition provided through a tube or catheter or stoma that delivers nutrients distal to the oral cavity.

Feeding Formulation. A ready-to-administer mixture of nutrients.

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Formulary. A list of drugs, solutions, and formulations approved for use within an organization by its Pharmacy and Therapeutics Committee, or other applicable authority.

Indicators. Prospective measures used as normative standards within a quality assurance process.

Clinical Indicator. An instrument that measures a quantifiable aspect of nutrition care to guide professionals in monitoring and evaluating nutrition care quality and/or appropriateness.

Process Indicator. An instrument that assesses data concerning functions carried out by practitioners, including assessment, treatment, treatment planning, technical aspects of performing treatment, management of complications, and indications for treatments and procedures.

Outcome Indicator. An instrument that looks at the results of practitioners' activities, including complications, adverse events, short-term results of specific procedures and treatments, and long-term status of patients' health and functioning.

Macronutrient. Nutrients present in the body and required in the greatest amount (e.g., carbohydrates, proteins, lipids).

Malnutrition. Any disorder of nutritional status, including those resulting from a deficiency of nutrient intake, impaired nutrient metabolism, or overnutrition.

Micronutrient. Nutrients present and required in minute quantities (e.g., vitamins, trace elements).

Nutrient. Protein, carbohydrate, lipid, vitamins, minerals, trace elements, and water.

Nutrient-Nutrient interaction. An event that occurs when a nutrient's availability or effect is altered by another nutrient.

Nutrition. The sum of the processes by which one takes in and utilizes nutrients.

Nutrition. Of or relating to the state of nutrition or things related to the field of nutrition. Can be used as a compound structure with terms such as nutrition support, nutrition nurse, nutrition team, nutrition program, etc.

Nutritional. Usually, that which has nutritive value, such as nutritional cereal, nutritional meal, etc.

Nutrition Assessment. A comprehensive evaluation to define nutritional status, including medical history, dietary history, physical examination, anthropometric measurements, and laboratory data.

Nutritionally-at-Risk (Adult Definition). An adult is considered at nutritional risk if they have:
- Actual or potential for developing malnutrition (involuntary loss or gain of 10% of usual body weight within 6 months, or 5% of usual body weight in 1 month, a weight of 20% more than or less than ideal body weight), presence of chronic disease, or increased metabolic requirements.
- Altered diets or diet schedules (receiving total parenteral or enteral nutrition; recent surgery, illness, or trauma).
- Inadequate nutritional intake, including not receiving food or nutrition products (impaired ability to ingest or absorb food adequately) for >7 days.

Nutritionally-at-Risk (Pediatric Definition). Neonates, infants, and children should be considered at nutritional risk if they have:
- Very low birth weight, or low birth weight, even in the absence of gastrointestinal, pulmonary or cardiac disorders.
- Birth weight <2 standard deviations below the mean (approximately the 3rd percentile) for gestational age on fetal weight curves.
- An acute weight loss of 10%.
- A weight/length less than the 10th percentile or greater than the 90th percentile.
- Increased metabolic requirements.
- Impaired ability to ingest or tolerate oral feedings.
- Documented inadequate provision or tolerance of nutrients.
- Inadequate weight gain or a significant decrease in an individual's usual growth percentile.

Nutrition Care. Interventions and counseling of individuals on appropriate nutrition intake by integrating information from the nutrition assessment. Nutrition therapy, a component of medical treatment, includes oral, enteral, and parenteral nutrition.

Nutrition Screening. The process of identifying characteristics known to be associated with nutrition problems. Its purpose is to pinpoint individuals who are nutritionally-at-risk for malnutrition or are malnourished.

Nutrition Support Service or Team. A multidisciplinary group of health care professionals with expertise in nutrition who aid in the provision of nutrition support.

Nutrition Therapy. The provision of nutrients and any necessary adjunctive therapeutic agents to patients orally or by administration into the stomach, intestine, and/or by IV infusion for the purpose of improving or maintaining a patient's nutritional status.

Outcome. The measured result of the performance of a system or process.

Parenteral Nutrition. Nutrients provided intravenously. Central. Parenteral nutrition delivered into a large diameter vein, usually the superior vena cava. Peripheral. Parenteral nutrition delivered into a peripheral vein, usually of the hand or forearm.

Pharmacodynamics. The effects of drugs on tissues and organisms.

Pharmacokinetics. Study of the absorption, distribution, biotransformation, and excretion of drugs by the body.

Practice Guideline. Systematically developed statement to assist practitioner and patient.
decisions about appropriate health care for specific circumstances. Statements suggesting the proper indications for doing a procedure or treatment or the proper management for specific clinical problems.

Quality Assurance. See quality assessment and improvement.

Quality assessment and improvement. Any procedure, method, or philosophy for collecting, processing, or analyzing data that is aimed at maintaining or improving the appropriateness and reliability of nutrition care services.

Quality Assessment and Improvement Criteria. Objective limits for analysis of process or clinical outcomes.

Specialized Nutrition Support. Provision of specially formulated and/or delivered parenteral or enteral nutrients to maintain or restore optimal nutritional status.

Chapter I. Scope of Practice

The practice of specialized nutrition support has been recognized as a specialty area within the profession of pharmacy. The Nutrition Support Pharmacist may practice in a variety of settings, including acute and subacute care facilities, ambulatory clinics, skilled nursing facilities, and home care and may serve patients across the continuum of care. The specialized nutrition support program provided within each health care institution should ideally be interdisciplinary in structure and design. The Nutrition Support Pharmacist should be able to work collaboratively with other disciplines to promote optimal nutrition care to all patients within the practice setting. The scope of practice includes, but is not limited to: direct patient care; administrative management of the specialized nutrition support program; quality improvement; education of pharmacists and other health care professionals, patients, students, and the public; and research.

Chapter II. Criteria for Recognition as a Nutrition Support Pharmacist

1. The practice of specialized nutrition support varies with the individual pharmacist's position, education, and practice environment. However, certain minimum qualifications are required of all who practice specialized nutrition support.

2. The Nutrition Support Pharmacist shall document competence to practice specialized nutrition support. Demonstration of competence shall include documentation of the following:

2.1 A current, valid license to practice pharmacy in the United States of America or the equivalent in foreign countries.

2.2 Substantial practice time devoted to the practice of specialized nutrition support.

2.3 Documentation of one of the following criteria:
   - Completion of an educational training program that includes specialized nutrition support.
   - Active participation in the nutrition support service or committee of a health care entity responsible for development, implementation, and evaluation of protocols for administration of specialized nutrition support.
   - Certification by the Board of Pharmaceutical Specialties as a Board Certified Nutrition Support Pharmacist (BCNSP).

Intent of Standard

Competence as a Nutrition Support Pharmacist requires knowledge derived from both training and experience. These criteria establish the basis for demonstrating an appropriate knowledgebase, sufficient clinical experience, and a commitment to ongoing training and education.

Example of Implementation

For example, a pharmacist who spends a substantial amount of time (eg, 16 hours per week or 40% of professional practice time) devoted to any type of specialized nutrition support activity would meet Criteria 2.2 above. Specialized nutrition support activity may include direct patient care, administrative management, quality improvement, education, and research. Documentation of at least one of four additional criteria is also required (See item 2.3 above).

Chapter III. Nutrition Assessment

1. The Nutrition Support Pharmacist may participate in nutrition screening to identify a patient who is, or who is at risk of becoming, malnourished.

1.1 The patient or caregiver may be interviewed to obtain the medical, surgical, nutrition, medication, psychosocial, and socioeconomic history.

1.2 The medical record shall be reviewed for disease states (including clinical condition), medical/surgical therapies, pharmacotherapy, laboratory findings, and physical findings.

1.3 Physical and biochemical assessment parameters relevant to nutritional status may be measured and/or interpreted.
1.4 The Nutrition Support Pharmacist may document or verify the documentation of the patients nutritional status in the medical record.

2. The Nutrition Support Pharmacist may participate in the assessment of the qualitative and quantitative nutrient requirements of the patient.

2.1 Daily energy and protein requirements may be estimated or measured.

2.2 Daily vitamin, mineral, and fluid requirements may be estimated.

2.3 The Nutrition Support Pharmacist may document or verify documentation of the patient’s nutrition requirements in the medical record.

**Intent of Standards 1 and 2**

In collaboration with other health care professionals, the Nutrition Support Pharmacist may participate in the assessment of nutritional status and nutrition requirements as appropriate to the individual pharmacist’s position, education, and practice environment. The intent of assessing nutritional status is to establish baseline subjective and objective nutrition parameters, identify nutrition deficits, and determine nutrition risk factors for individual patients. The assessment of nutrition requirements should establish daily energy, protein, vitamin, mineral, and fluid requirements based on subjective and objective findings. Nutrition assessment should be documented in the medical record to facilitate subsequent communication, monitoring, and quality assurance.


**Intent of Standard**

Malnutrition may cause alterations in the pharmacokinetics and pharmacodynamic properties of certain drugs. Alternatively, certain drugs may cause alterations in the patient’s nutritional status through alterations in appetite, taste, gastrointestinal function, macronutrient tolerance, and micronutrient status (eg, electrolytes, vitamins, trace elements). The pharmacokinetic properties of certain drugs may also be altered by specific nutrients or feeding formulations (eg, the absorption of phenytoin may be decreased by enteral feeding formulations). The intent of this standard is to identify patients at risk of developing complications from these drug interactions.

4. The Nutrition Support Pharmacist may participate in the assessment of the appropriateness of the patient for specialized nutrition support.

**Intent of Standard**

The intent of this standard is to identify patients most likely to benefit from specialized nutrition support. The Nutrition Support Pharmacist may evaluate patient-specific factors (eg, disease state, clinical condition, risk factors, prognosis, feasibility of establishing a feeding access), apply clinical practice guidelines, and apply pharmaco-economic analysis in determining the appropriateness of specialized nutrition support for the individual patient.

5. The Nutrition Support Pharmacist may participate in the assessment of the educational needs of the patient, health-care professionals, and others regarding specialized nutrition support.

**Chapter IV. Development and Implementation of the Nutrition Care Plan**

1. The Nutrition Support Pharmacist shall participate in the development of the specialized nutrition care plan.

1.1 The nutrition care plan should be developed with an interdisciplinary approach involving the Nutrition Support Service, the patient’s physician, and other health care personnel. 2 The patient and/or family member(s) should be included in the development of the care plan.

1.2 The objective(s) of the nutrition care plan shall be determined and documented. The documentation should include immediate and long term-goals, anticipated duration of therapy, patient education, discharge planning, and, if necessary, home training.

1.3 The Nutrition Support Pharmacist shall help ensure that the nutrition care plan addresses the following: route and composition of formulation, pharmacologic adjuncts to nutrition support, nutrient delivery system, surveillance and management of therapy-associated complications, delivery of cost-effective care, and management of drug-nutrient interactions. All nutrition support care plans should be based on the most up-to-date medical evidence as it pertains to each individual disease state and/or clinical condition.

1.4 The nutrition care plan should address patient/family education regarding the role of nutrition support therapy and the outcome of care.

**Intent of Standard**

Patient-specific outcomes are generated through the process of the nutrition care plan. Goals are defined, documented, reevaluated, and updated and/or modified to facilitate the most efficient and effective clinical outcome(s). The nutrition care plan addresses the specific patient needs identified in the nutrition assessment and serves as a guide to all health care professionals who collaborate in the care of the patient. All nutrition support care plans should be based on the most up-to-date medical evidence as it pertains to each individual’s disease state and/or clinical condition.

2. The Nutrition Support Pharmacist shall participate in the implementation of the nutrition care plan.

2.1 The Nutrition Support Pharmacist shall communicate the individual nutrition care plan with other health care providers to ensure continuity of care.

**Intent of Standard**

Provision of care may involve many health care professionals. The Nutrition Support Pharmacist should provide coordination between inpatient and outpatient nutrition care. Continuity of care is imperative to ensure a seamless transition between hospital and home or other care facility.
3. The Nutrition Support Pharmacist shall facilitate the prescribing of the specialized feeding formulation, based on law and/or delineated professional privileges.

4. The Nutrition Support Pharmacist shall participate in the education of the patient and/or caretakers regarding the feeding formulation.

**Example of Implementation**

The Nutrition Support Pharmacist educates patients and caregivers in the adverse reactions of parenteral nutrition (e.g., hypoglycemia and hyperglycemia). The Nutrition Support Pharmacist assesses and documents the comprehension of information given to the patient and caregiver.

**Chapter V. Compounding the Feeding Formulation**

1. The Nutrition Support Pharmacist shall oversee policies and procedures related to the compounding and delivery of safe and effective parenteral feeding formulations.
   1.1 Aseptic technique shall be strictly enforced for the compounding of parenteral formulations.
   1.2 Appropriate labeling, according to national guidelines such as those established by the National Advisory Group on Standards and Practice Guidelines for Parenteral Nutrition 3 should be followed.
   1.3 Methods for detection and/or prevention of formulation incompatibilities or instability shall be identified and employed.
   1.4 Automated equipment for the preparation of parenteral formulations shall be maintained and updated appropriately.

**Intent of Standard**

Parenteral nutrient formulations are complex admixtures. Adverse effects (including death) have been attributed to errors involving these admixtures. Policies and procedures that follow national guidelines are needed for preparation and labeling of feeding formulations to prevent complications and ensure both effective and safe delivery of care.

2. The Nutrition Support Pharmacist may participate in the development of monitoring and delivery of safe and effective enteral feeding formulations.
   2.1 Maintenance of a clean area in the pharmacy for compounding of enteral feeding formulations.
   2.2 Appropriate labeling should be performed.
   2.3 Methods for detection and/or prevention of formulation incompatibilities.

**Chapter VI. Monitoring**

1. The Nutrition Support Pharmacist, in collaboration with other health care providers, shall monitor and evaluate the patient’s response to therapy. Therapeutic efficacy and adverse effects shall be documented, and therapy goals shall be adjusted accordingly.
   1.1 The Nutrition Support Pharmacist shall participate in the development of monitoring guidelines. These guidelines may include physical assessment, biochemical assessment, and subjective patient input regarding therapy tolerance.
   1.2 Surveillance for complications associated with specialized nutrition support shall be performed and documented as delineated by the patient-specific nutrition care plan.
   1.3 Frequency and extent of physical and laboratory assessment shall depend on the acuity of the patient and be congruent with the nutrition care plan.
2. Outcome measurements should be monitored to determine if therapy continuation or revisions are required.

3. The Nutrition Support Pharmacist shall participate in monitoring and evaluating pharmacotherapy used in conjunction with specialized nutrition support. Modification of pharmacotherapy regimens may result from both objective and subjective patient evaluation, based on properties of the specific drug adjuvant(s) and the patient's clinical goals.

**Intent of Standards 1-3**

Patient monitoring is essential for determining the success of the nutrition and pharmacologic intervention(s) and is important in the evaluation of the patient's progress toward fulfilling specific goals.

**Chapter VII. Management of Nutrition Support Services**

The Nutrition Support Pharmacist, in collaboration with other health care providers, is competent to provide administrative management of the specialized nutrition support program. The Nutrition Support Pharmacist shall participate in practice management activities as appropriate to the individual's position, education, and practice environment.

1. The Nutrition Support Pharmacist may participate in the development of policies and procedures (guidelines for use) for cost-effective patient-care aspects of specialized nutrition support (e.g., nutrition assessment, monitoring, patient selection, route of administration).
   1.1 There shall be documentation of the regular review and revision of policies and procedures for the provision of specialized nutrition support.
2. The Nutrition Support Pharmacist may participate in the development of policies and procedures for operational aspects of specialized nutrition support (e.g., labeling of feeding formulations, ordering procedures, compounding, quality control), according to national guidelines.
   2.1 There shall be documentation of the regular review and revision of policies and procedures for the provision of specialized nutrition support.

**Intent of Standard**

The Nutrition Support Pharmacist may contribute to the development of practice guidelines or institutional policies and procedures that ensure a patient receives an
appropriate nutrition care plan and safe parenteral and enteral feeding formulations.

3. The Nutrition Support Pharmacist may serve as a member of the nutrition support service or committee to coordinate the provision of specialized nutrition support.

**Intent of Standard**

Optimal nutrition care requires an interdisciplinary effort by all involved health care professionals. This effort must be coordinated and integrated with the medical care of the patient. The Nutrition Support Pharmacist may coordinate and/or manage all or some of the activities of a multidisciplinary specialized nutrition support team (eg, patient care rounds, human and fiscal resources, educational or research programs).

4. The Nutrition Support Pharmacist may participate in the development and maintenance of an adequate and cost-effective nutrition support formulary.

5. The Nutrition Support Pharmacist may participate in the evaluation and selection of infusion control devices and supplies for specialized nutrition support.

6. The Nutrition Support Pharmacist may act as liaison between the nutrition support service and/or committee, medical staff, and providers of home nutrition support services, hospital administration, and others.

**Intent of Standard**

The Nutrition Support Pharmacist should accurately communicate a patient's nutrition care plan and long-term nutrition goals to other health professionals within the institution and when necessary upon patient discharge or transfer to another health care provider.

7. The Nutrition Support Pharmacist shall act as a nutrition support expert to health care providers, patients, and other caregivers.

7.1 The Nutrition Support Pharmacist should be involved in training those responsible for the preparation and administration of feeding formulations. This would include the stability and compatibility of feeding formulations and administration of concurrent medications.

**Intent of Standard**

The Nutrition Support Pharmacist should serve as an advocate and informant for quality, cost-effective, specialized nutrition support to members of the institution, patients, and their families.

8. The Nutrition Support Pharmacist may participate in interdisciplinary nutrition-related quality improvement activities.

8.1 The Nutrition Support Pharmacist may:

8.1.1 Evaluate clinical practice.

8.1.2 Identify areas for quality monitoring.

8.1.3 Identify indicators (clinical, outcome, process).

8.1.4 Collect and analyze quality improvement data.

8.1.5 Formulate and implement plans to improve specialized nutrition support and/or patient outcomes.

8.1.6 Reevaluate plans to assess effectiveness.

8.2 The Nutrition Support Pharmacist may collaborate with other nutrition support team members to design and integrate nutrition support protocols into disease state management (eg, critical pathways, clinical practice guidelines).

8.3 The Nutrition Support Pharmacist may participate in discharge or transfer to another health care provider.

8.4 The Nutrition Support Pharmacist may participate in long-term nutrition goals to other health professionals.

8.5 The Nutrition Support Pharmacist should coordinate the provision of specialized nutrition support.

8.6 The Nutrition Support Pharmacist should serve as an interdisciplinary nutrition support service or committee to coordinate and/or manage all or some of the activities of a multidisciplinary specialized nutrition support team (eg, patient care rounds, human and fiscal resources, educational or research programs).

8.7 The Nutrition Support Pharmacist may participate in the development and maintenance of an adequate and cost-effective nutrition support formulary.

8.8 The Nutrition Support Pharmacist may participate in the evaluation and selection of infusion control devices and supplies for specialized nutrition support.

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7.1 The Nutrition Support Pharmacist should be involved in training those responsible for the preparation and administration of feeding formulations. This would include the stability and compatibility of feeding formulations and administration of concurrent medications.

**Intent of Standard**

The Nutrition Support Pharmacist needs to retrieve and evaluate available scientific data regarding nutrition in order to advance individual patient care, oversee management of services, and provide education to the patient, healthcare professional, and others.

2. The Nutrition Support Pharmacist may generate and analyze data to evaluate feeding formulations and nutrition support techniques, service, equipment, and supplies.

3. The Nutrition Support Pharmacist may design and/or conduct basic science and/or clinical research in areas such as nutrition support, nutrition medicine, clinical nutrition, and nutrition pharmacology.

**Chapter X. Ethics**

1. The Nutrition Support Pharmacist shall uphold the ethics of the profession of pharmacy. These actions include but are not limited to providing patient care activities that promote the compassionate and
confidential care of patients receiving nutrition support under the professional competence of the Nutrition Support Pharmacist.

**Intent of Standard**

The obligation of the Nutrition Support Pharmacist is to maintain and uphold ethical pharmacy practices.

**Example of Implementation**

The Nutrition Support Pharmacist provides rational, balanced, and current information to the patient and caregiver in order to gain support in determining the appropriate nutrition care plan in the setting of terminal illness.

**References**
