



AMERICAN ACADEMY OF FAMILY PHYSICIANS

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Recommended Curriculum Guidelines for Family Medicine Residents

Nutrition

This document was endorsed by the American Academy of Family Physicians (AAFP).

Introduction

This Curriculum Guideline defines a recommended training strategy for family medicine residents. Attitudes, behaviors, knowledge, and skills that are critical to family medicine should be attained through longitudinal experience that promotes educational competencies defined by the Accreditation Council for Graduate Medical Education (ACGME), www.acgme.org. The family medicine curriculum must include structured experience in several specified areas. Much of the resident's knowledge will be gained by caring for ambulatory patients who visit the family medicine center, although additional experience gained in various other settings (e.g., an inpatient setting, a patient's home, a long-term care facility, the emergency department, the community) is critical for well-rounded residency training. The residents should be able to develop a skillset and apply their skills appropriately to all patient care settings.

Structured didactic lectures, conferences, journal clubs, and workshops must be included in the curriculum to supplement experiential learning, with an emphasis on outcomes-oriented, evidence-based studies that delineate common diseases affecting patients of all ages. Patient-centered care, and targeted techniques of health promotion and disease prevention are hallmarks of family medicine and should be integrated in all settings. Appropriate referral patterns, transitions of care, and the provision of cost-effective care should also be part of the curriculum.

Program requirements specific to family medicine residencies may be found on the ACGME website. Current AAFP Curriculum Guidelines may be found online at www.aafp.org/cg. These guidelines are periodically updated and endorsed by the AAFP and, in many instances, other specialty societies, as indicated on each guideline.

Each residency program is responsible for its own curriculum. **This guideline provides a useful strategy to help residency programs form their curricula for educating family physicians.**

Preamble

Nutrition plays a major role in not only the treatment of existing diseases, but also both health promotion and disease prevention. There is overwhelming evidence that links diet to health and disease. Nutritional guidelines are important components of the treatment plans for medical, surgical, and emotional illnesses. Nutrition-related diseases such as coronary artery disease, stroke, hypertension, diabetes, and certain types of cancer are the leading causes of morbidity and mortality in the United States. Healthy People 2020 (a government initiative that partners with the National Institutes of Health [NIH], the Centers for Disease Control and Prevention [CDC], the U.S. Food & Drug Administration [FDA], and the Centers for Medicare & Medicaid Services [CMS]) aims to increase the quality and years of healthy life, and eliminate health disparities among different segments of the population. Four of the 26 Healthy People 2020 Leading Health Indicators (objective measures of the nation's health status) directly measure exercise capabilities, obesity levels, and vegetable intake, while 22 objectives (topics on which the nation can make progress) address nutrition and weight status indicators for the United States. A healthy diet contributes to the prevention of many diseases and can be an essential part of the treatment plan for many chronic conditions. As patients are increasingly bombarded with nutrition advice from multiple sources, they rely on their physicians to help them evaluate the quality of popular nutrition, diet, and supplement claims. Physicians should develop the skills necessary to assess nutritional status and provide information on diet and nutrition.

Competencies

At the completion of residency training, a family medicine resident should be able to:

- Understand general principles of nutrition, including its role in the prevention and management of specific diseases, and be able to translate these principles into a plan of care for the patient (Patient Care, Medical Knowledge)
- Perform a comprehensive nutritional assessment including: 1) medical, social, and diet histories; 2) physical examination; 3) anthropometrics (i.e., height, weight, body mass index [BMI], head circumference, and body-fat distribution [waist circumference and waist-to-hip ratios]); and 4) laboratory tests (Patient Care, Medical Knowledge)
- Counsel patients regarding nutritional recommendations in a culturally sensitive manner (Professionalism, Interpersonal and Communication Skills)

- Use an evidence-based approach to assess the patient's nutritional status and determine the effectiveness of interventions (Practice-based Learning and Improvement)
- Recognize patients who are at high risk for nutrition-related complications and refer them to nutrition consultants who can provide counseling and education (Patient Care, Medical Knowledge, Systems-based Practice)
- Recognize his or her own nutritional biases and make attempts to compensate for possible effects on patient care (Professionalism)

Attitudes

The resident should demonstrate attitudes that encompass:

- Understanding that nutrition is an integral part of:
 - Health promotion and disease prevention: Nutrition is one of the most powerful interventions available. Nutrition counseling that targets dietary risk factors as primary prevention has the potential to significantly reduce mortality and morbidity throughout the life cycle.
 - Medical treatment of disease: Nutritional interventions have the potential to reverse certain disease processes. Additionally, proper nutritional status can positively support medical interventions.
- Understanding that dietary intake is influenced by a variety of patient factors, including:
 - Culture (e.g., family, community, ethnicity, religion)
 - Socioeconomic situation (e.g., ability to make independent food choices, ability to purchase and prepare food, ability to afford healthiest food options)
 - Psychosocial and mental health (e.g., depression, anorexia, dementia, bulimia, binge eating)
 - Knowledge (including educational level and reading ability)
 - General health and lifestyle (e.g., comorbid conditions, diseases, and habits).
 - Policy (e.g., access to and availability of safe and healthy food choices; regional variability in food cost; local and global sustainability of food practices; availability of low-income subsidy or government programs)
- Recognition that nutrition consultants should be utilized when appropriate to help provide counseling and culinary education for at-risk patients. Nutritionists, registered dietitians, and licensed dietitians have specialized training in public health nutrition, wellness, disease prevention, medical nutrition therapy, and nutrition education and counseling for individuals.

Knowledge

In the appropriate setting, the resident should demonstrate the ability to apply knowledge of:

1. General principles of nutrition, including:
 - a. The roles of macronutrients and micronutrients (carbohydrates, fats, proteins, vitamins, minerals, water, and fiber), as well as the important differences within micronutrient classes (e.g., saturated fat vs. non-saturated fat)
 - b. Dietary reference intakes
 - c. Nutritional content of foods
 - d. Dietary recommendations and current national guidelines
 - e. Calories and energy balance
 - f. Rationale for including more whole foods and fewer processed foods in the daily diet
 - g. Specific recognized diets, including the DASH Diet and the Mediterranean diet
2. Nutritional assessment
 - a. Medical and social history; physical examination
 - b. Anthropometrics (i.e., height, weight, BMI, head circumference, and body-fat distribution [waist circumference and waist-to-hip ratios])
 - c. Ordering and evaluating laboratory tests (inpatient and outpatient)
3. Nutritional issues for specific populations, including:
 - a. Infants and toddlers (e.g., breastfeeding, formula, combination feeding, addition of solids, allergy prevention, vitamin D, iron, fluoride)
 - b. Children (e.g., picky eating, pica, snacks, calcium, vitamins, failure to thrive)
 - c. Adolescents (e.g., healthy choices, eating disorders, vitamins)
 - d. Adults (e.g., portion size, quick and affordable healthy eating, weight maintenance, energy balance, calcium, food-medication interactions)
 - e. Pregnancy (e.g., weight gain, folic acid, iron, vitamins and minerals, omega-3)
 - f. Lactation (e.g., caloric needs, support, counseling, calcium, vitamin D)
 - g. Elderly (e.g., psychosocial issues, comorbid conditions, swallowing disorders, malabsorption syndromes, iatrogenic factors, protein intake, calcium, vitamin D)
 - h. Vegetarian and vegan diets (understanding the benefits and nutritional issues throughout the life cycle)
 - i. Athletes (e.g., eating disorders, overtraining, energy balance, training-specific macronutrient demands, fluid intake, supplementation)
4. The role of nutrition in the prevention and treatment of specific diseases, including:

- a. Cancer
 - b. Cardiovascular disorders
 - c. Dental disease
 - d. Endocrine disorders
 - e. Gastrointestinal disorders
 - f. Hematologic disorders
 - g. Renal disorders
 - h. Respiratory disorders
 - i. Bone and rheumatic disorders
 - j. Neurologic disorders
 - k. Skin conditions
 - l. Gynecologic disorders
 - m. Obesity
5. Secondary malnutrition caused by systemic diseases, including:
- a. Alcoholism
 - b. Cancer
 - c. Immunodeficiencies (including HIV/AIDS)
 - d. Malabsorption
 - e. Pulmonary disease
 - f. Food allergies
 - g. Mood and psychiatric disorders
6. Obesity, weight loss, and weight maintenance
- a. Behavior modification, counseling, and goal setting
 - b. Diet drugs (prescription, herbal, and over-the-counter)
 - c. Popular diets
 - d. Surgical approaches, including care of the patient before and after weight loss surgery
 - e. Role of physical activity
7. Disordered eating
- a. Anorexia nervosa
 - b. Binge eating
 - c. Bulimia nervosa

- d. Orthorexia
- 8. Use of dietary supplements, including:
 - a. Vitamin and mineral deficiency, toxicity, and recommended intakes
 - b. Guidelines for herbal, alternative, and other supplements, including drug interactions, safety, and efficacy
 - c. Evidence-based nutrition resources
 - d. Navigating nutritional supplement claims
- 9. Prevention, recognition, and treatment of food-borne illness
- 10. Allergies and food intolerances
- 11. Physical activity and sports
 - a. Recommendations for health and weight gain or loss
 - b. Sport- and age-specific nutritional support
 - c. Hydration in sport and hyponatremia (exercise prescription)
- 12. Enteral and parenteral nutrition
 - a. Considerations for critical care and NPO patients
 - b. Considerations for hospice and palliative care patients
- 13. Community nutrition resources (e.g., food banks; Meals on Wheels; Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); school lunch programs)
- 14. Awareness of the political issues surrounding the food industry as they impact patients' ability to determine the nutritional content and availability of healthy foods
- 15. Basic understanding of cultural food preferences and nutritional implications
- 16. Culinary nutrition, including safe food storage, preparation, and basic culinary skills

Skills

In the appropriate setting, the resident should demonstrate the ability to independently perform or appropriately refer the following:

1. Integrate nutrition assessment and intervention into the medical history, review of systems, physical examination, laboratory evaluation, and plan of care
2. Assess nutritional status and write diet prescriptions for outpatients

3. Assess nutritional status and write diet prescriptions for inpatients (e.g., in hospitals, nursing homes, and other supervised living situations)
4. Order and interpret laboratory and metabolic studies related to nutritional assessment and goals
5. Order and manage oral supplements and tube feeding, and understand when and how to order and monitor total parenteral nutrition
6. Counsel patients and family members about specific nutritional needs related to life cycle stages, lifestyle, habits, disease prevention, and/or treatment of disease
7. Counsel patients on safe lifestyle approaches to weight management, and balancing caloric intake and physical activity
8. Assess patient's readiness to change behavior and motivate them to the next step
9. Monitor patient's progress with nutritional behavioral interventions, provide appropriate feedback, and guide patients towards solutions in overcoming obstacles
10. Personalize nutrition recommendations for diagnosis, age, ethnicity, belief systems, and gender
11. Advise patients about the appropriate use of vitamin, mineral, and other dietary and botanical supplements, and prescribe when needed
12. Identify fad diets and their associated nutritional risks and benefits (e.g., South Beach Diet, Atkins Diet, Paleo Diet)
13. Develop strategies to teach patients how to identify and avoid overly processed foods, and how to choose whole foods over processed ones
14. Collaborate with nutritionists, registered dietitians, and licensed dietitians, including participating in and utilizing multidisciplinary group patient education courses
15. Refer patients to reliable community nutrition resources (including websites), as well as physicians and other health care professionals with specialized knowledge and skills in nutrition and/or weight loss
16. Advise on the role of family and the influential role of family nutritional habits in lifelong wellness

Implementation

This curriculum should be taught during both focused and longitudinal experiences. It should be integrated into patient care, didactic conferences, and experiential learning activities. Nutritional status of the patient should be an integral part of case

presentation, staffing, rounds, and other clinical activities in the inpatient and outpatient settings. Qualified nutrition professionals should teach nutrition and mentor residents, as well as being part of interdisciplinary team-based activities (e.g., group patient education). Family medicine faculty should both model and teach nutrition, as well as demonstrating practical and relevant ways to integrate nutritional information into patient care.

Resources

American Dietetic Association, South Suburban Dietetic Association Staff, Dietitians of Canada. *Manual of Clinical Dietetics*. 6th ed. Chicago, Ill: American Dietetic Association; 2000.

Barnard N, Weissinger R, Jaster B. *Nutrition Guide for Clinicians*. 2nd ed. Washington, DC: Physicians Committee for Responsible Medicine; 2009.

Deen D, Hark L, eds. *The Complete Guide to Nutrition in Primary Care*. Malden, Mass: Wiley-Blackwell; 2007.

Deen D, Spencer E, Kolasa K. Nutrition education in family practice residency programs. *Fam Med*. 2003;35(2):105-111.

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Institute of Medicine (US) Committee to Review Dietary Reference Intakes for Vitamin D and Calcium; Ross AC, Taylor CL, Yaktine AL, Del Valle HB, eds. *Dietary Reference Intakes for Calcium and Vitamin D*. Washington, DC: National Academies Press; 2011.

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Nestle M. *Food Politics: How the Food Industry Influences Nutrition and Health, Revised and Expanded Edition*. Berkeley, Calif: University of California Press; 2007.

Pollan M. *In Defense of Food: An Eater's Manifesto*. New York, NY: Penguin Books; 2009.

Ross AC, Caballero B, Cousins R, Tucker KL, Ziegler TR, eds. *Modern Nutrition in Health and Disease*. 11th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2012.

Society of Teachers of Family Medicine (STFM) Group on Nutrition. *Physician's Curriculum in Clinical Nutrition in Primary Care*. 3rd ed. Leawood, Kan: STFM; 2007.
www.fmdrl.org/138

Website Resources

Academy of Nutrition and Dietetics. Eat Right. www.eatright.org

Academy of Nutrition and Dietetics. Nutrition Care Manual® (NCM) (paid subscription required). www.nutritioncaremanual.org

National Institutes of Health, National Center for Complementary and Integrative Health. <http://nccam.nih.gov>

National Institutes of Health, National Heart, Lung, and Blood Institute. Nutrition Academic Award (NAA) Products. www.nhlbi.nih.gov/funding/training/naa/products.htm

Physicians Committee for Responsible Medicine. www.pcrm.org

U.S. Department of Agriculture, Center for Nutrition Policy and Promotion (CNPP). www.cnpp.usda.gov/

U.S. Department of Agriculture. ChooseMyPlate.gov. www.choosemyplate.gov/

U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Dietary Guidelines. www.health.gov/dietaryguidelines

U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020. www.healthypeople.gov/

University of North Carolina at Chapel Hill. Nutrition in Medicine (NIM). www.nutritioninmedicine.net/portal/

Developed 08/1989 by Crozer-Keystone Family Medicine Residency Program

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