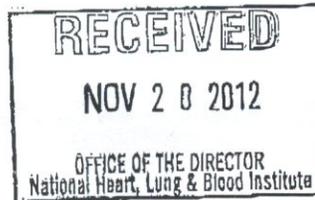



**DEPARTMENT OF HEALTH & HUMAN SERVICES**

Public Health Service

 National Institutes of Health  
 National Heart, Lung, and  
 Blood Institute  
 Bethesda, Maryland 20892

November 14, 2012


**TO:** Gary Gibbons, M.D.  
 Director, NHLBI

**Through:** Michael Lauer, M.D., Director, DCVS *ML*  
 Diane Bild, M.D., Associate Director, PPSP, DCVS *DB*  
 Lawrence Fine, M.D., Branch Chief, CAPB, PPSP *LF*
**FROM:** Charlotte Pratt, PhD, Program Director, CAPB, DCVS

**SUBJECT:** Executive Summary: Future Directions for Implementing Nutrition Across the Continuum of Medical and Health Professions Education and Training, and Research

Attached is a summary of the working group report on "Future Directions for Implementing Nutrition Across the Continuum of Medical and Health Professions Education and Training, and Research," which was held on September 10-11, 2012. The meeting was attended by experts from a broad range of medical professional organizations, and NIH staff.

The recommendations in this report are relevant to a wide range of organizations and may be implemented in partnerships with federal and non-federal entities. The NIH Office of Disease Prevention (ODP), and the Division of Nutrition Research Coordination (DNRC) co-sponsored the working group. Participants plan to prepare a full report for publication in a peer-reviewed journal.

We are seeking your approval to post the report on the NHLBI external Website.

 Approve report for posting on NHLBI website

 Do not approve report


  
 \_\_\_\_\_  
 Gary Gibbons, M.D.

**Attachments:**

1. Executive Report
2. Meeting Agenda
3. Names and Addresses of Participants

**c:** Director, ODP  
 Director, DNRC

## Executive Summary

### Working Group on Future Directions for Implementing Nutrition Across the Continuum of Medical and Health Professions Education and Training, and Research

September 10-11, 2012

#### Introduction

The National Heart, Lung, and Blood Institute (NHLBI), Division of Cardiovascular Sciences (DCVS) convened a Working Group Meeting titled, "Future Directions for Implementing Nutrition across the Continuum of Medical Education, Training, and Research," on September 10-11, 2012, in Bethesda, Maryland. The NIH Office of Disease Prevention, and Division of Nutrition Research Coordination co-sponsored the meeting.

The purpose of the meeting was to make recommendations to a broad cross-section of groups for implementing nutrition across the continuum of medical, nursing, dental and other health professional education and specialty training. The intended outcomes from the meeting were recommendations on 1) the content and implementation of nutrition and healthy lifestyles education, training and competency testing across the continuum of medical, nursing and other health professional education, and 2) the integration of nutrition education, training and research to improve population health, patient care and health outcomes. The meeting format included presentations, panel and open discussions and breakout discussions, culminating in a series of recommendations and priorities for medical nutrition education, training and research.

The recommendations are intended to be further considered or implemented by members or teams from a broad coalition of involved entities. Additional discussions with the working group and other agencies will be needed to coordinate implementation of the recommendations by relevant partners.

#### Background

Between 1998 and 2005, 21 out of 126 medical institutions participated in the Nutrition Academic Award (NAA, <http://www.nhlbi.nih.gov/funding/training/naa/index.htm>) (1), a program funded by NHLBI in collaboration with NIDDK to develop and formally integrate required medical nutrition education into the medical school curricula. Outcomes from the awarded institutions include the development of new nutrition education and training resources for medical schools, a Nutrition Curriculum Guide that illustrated how and where nutrition was included within the medical school curriculum, the incorporation of nutrition into physicians' clinical competencies (United States Medical Licensing Examination® Step 1® <http://www.usmle.org/step-1/>), the establishment of collaboration with professional organizations including the American Society for Clinical Nutrition, American Heart Association, American Medical Association (AMA), Academy of Nutrition and Dietetics, and the National Board of Medical Examiners® (NBME®) -- the latter to expand and update nutrition emphasis on the Step 1® examination --, the development of nutrition assessment tools [e.g., WAVE (Weight, Activity, Variety, and Excess)], the publication of manuscripts regarding the NAA (2-4), and a case-based book on medical nutrition and disease (5).

Many many medical schools have modified their curricula (e.g., problem-based learning and integrated curriculum). The Association of American Medical Colleges (AAMC) has periodically added new topics to the general medical school curriculum but has not emphasized the essential role of nutrition in the prevention of chronic disease.

Nutrition plays a major role in disease prevention and treatment, and it is widely recognized by health professionals including dietitians, clinicians, nurses, dentists, pharmacists and patients as an important foundation for clinical practice and for population health. Such health professionals are perceived by the public to be key resources for information about health. However, nutrition education in health professional training including U.S. medical schools, residency training, dental, pharmacy, and nursing programs remains inadequate (6), despite evidence supporting causal relationships between lifestyle factors and risk for chronic diseases as well as the importance of appropriate nutrition during hospitalization and an impact of nutrition on morbidity and mortality. A survey of medical schools by Adams et al. (6) noted that the percentage of medical schools that offered a dedicated nutrition course declined from 35% in 2000 to 25% in 2008. The number of hours devoted to nutrition instruction and skill building was less than the required minimum of 25 hours (19.6 hours in 2008). Institutions using online learning modules were able to provide significantly more hours of nutrition instruction (24.1 hours versus 13.7 hours) across the four-year curriculum than non-users (6). Current data (7, 8) indicate that few residents, fellows, and other clinicians are comfortable with managing nutrition problems in their patients. Nutrition training of medical students, residents, fellows, attending physicians, and other healthcare professionals as members of a multidisciplinary prevention team (e.g., consisting of pharmacists, social workers, nurses, nurse practitioners, dentists and dietitians) is fundamental to acute care management and to chronic disease prevention and treatment.

## Discussions

The workshop brought together experts in health professions education and training, academic and practicing physicians in the areas of family medicine, internal medicine, surgery, pediatrics, nurses, dietitians, nutrition professors, nutrition researchers, course directors, directors of nutrition and dental programs and continuing medical education (CME), representatives of various medical organizations including the American Board of Family Physicians, AMA, AAMC, American Society for Nutrition- Medical Nutrition Council, staff of the Bipartisan Policy Center, the American Society for Parenteral and Enteral Nutrition, the NBME®, and NIH staff.

After a brief overview of the history of NAA and its achievements, participants devoted the first half of day one to discussing present and future nutrition education and training activities; and perspectives, barriers, and recommendations for implementing nutrition in the medical professions and for other healthcare providers (e.g., nurses and dentists). Perspectives and strategies for medical education and training from the Nutrition in Medicine Project (6) AMA, AAMC, NBME, Bipartisan Policy Center (9, 10), and CME medical educators were presented. Keynotes included presentations on how to improve training focused on outcomes, practice skills, continuous learning, patient care through collaborative multidisciplinary or inter-professional teams, competency based learning, and testing (e.g., Steps 1-3@ <http://www.usmle.org/step-1/>; specialty boards, and CME).

Participants devoted the second half of day one to developing recommendations and meeting in three breakout sessions: 1) Medical Schools, 2) Residency/Specialty Training, and 3) Practicing Physicians and Other Health Care Providers such as Nurses, Nurse Practitioners, Dentists, and Pharmacists. Discussion points included 1) Recommendations on curriculum development and implementation, and 2) Recommendations on certification, and competency testing. Day two focused on research recommendations and reports back from the breakout sessions. The following guiding principles were additional discussion points:

## **Guiding Principles: Nutrition Education in Professional Schools**

- Health professionals should implement recommended nutrition practices and promote current Dietary Guidelines for the prevention and treatment of disease with all patients.
- Health professionals should understand the fundamentals of the Nutrition Care Process, including assessing nutritional status and dietary intakes, diagnosing nutrition-related problems, and implementing, and monitoring and evaluating nutrition care plans. The roles and responsibilities of different health professionals -- when to refer, how to interact, and how multidisciplinary teams work -- need to be understood.
- The dietitian plays an important role on the health-care team and can help provide training for other health professionals as well as partner with physicians in the nutrition assessment, therapeutic recommendations and joint follow-up of patients.
- Inter-professional nutrition education is critical to instill a team approach to teaching, training and learning and to patient care.
- Health professionals should know where to access nutrition education and advocacy resources and should use innovative approaches, including online resources and case-based approaches to enhance learning.
- Nutrition education in medical/professional schools should strive for a longitudinal integrated approach rather than single courses and involve a collaborative effort of multiple stakeholders.
- Research is needed to identify and validate strategies for providing nutrition education to health professional students and practicing clinicians.
- Health professionals should understand the role of evidence-based research in the development of diet and nutrition guidelines for public health and must be able to apply that knowledge toward better patient outcomes.

## **Recommendations**

These recommendations may be implemented by a broad range of organizations.

## **Top Ranked Research Priorities**

1. Test new approaches to incorporating nutrition into the training of residents, fellows and other health professionals (e.g., use of new technology and training modules).
2. Conduct research on how inter-professional nutrition education with multi-disciplinary teams contributes to more coordinated care, better performance, and improved patient outcome.
3. Test approaches for improving compliance with diet and healthy lifestyle modification among patients using new technologies (e.g., electronic medical records, electronic monitoring devices for food intake and physical activity).
4. Evaluate undergraduate, graduate and continuing medical nutrition education, as well as nutrition education of other health care professionals such as nurses, dentists, and pharmacists.

## Cross-cutting Themes for Integrating Health Professional Training and Research

1. Consider ways to support a Nutrition Education and Research Coordinating Center that would coordinate nutrition education, research, and training activities for health professionals, including those for medical students, residents and fellows, nurses, pharmacists, dentists, physician assistants, and other clinicians and health professionals and support inter-professional training and collaboration.
2. Revise the NAA Curriculum Guide and update the document with learning objectives and competencies for medical students, residents and practicing physicians, and other health professionals.
3. Encourage inter-professional multi-disciplinary/trans-disciplinary team (including e.g., dietitians, nurses, pharmacists, dentists) approaches and referral systems across the continuum of health professional training.

## Examples of Metrics to Evaluate Impact

- Center for Medicare and Medicaid Service indicators on: (1) Quality, (2) Access, and (3) Cost
- Best setting to impact nutrition (e.g., outpatient/community care)
- Cost associated with safety and hospital cost.
- Prevention of re-hospitalization. Transitions in care: provide nutrition counseling as patients move from inpatient to outpatient settings. Documentation of nutrition counseling especially in primary prevention.
- National Health and Nutrition Examination Survey data documenting what America eats.
- Transdisciplinary/multidisciplinary approaches to nutrition counseling and patient care.
- Documentation of nutrition content in Step 1® (<http://www.usmle.org/step-1/>).
- Competencies: New models and/or revision of existing competencies across the continuum of health professional education and training -- medical schools, residency/specialty programs (e.g., primary care, internal medicine, family practice, pediatrics and Obstetrics and Gynecology) and other health care providers.

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#### Attachments

- Agenda
- Participant List