



Health Program

Nutrition and Physical Activity Initiative

Teaching Nutrition and Physical Activity in
Medical School:

Training Doctors for Prevention-Oriented Care

June 2014





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ABOUT THE BIPARTISAN POLICY CENTER

Founded in 2007 by former Senate Majority Leaders Howard Baker, Tom Daschle, Bob Dole, and George Mitchell, Bipartisan Policy Center (BPC) is a non-profit organization that drives principled solutions through rigorous analysis, reasoned negotiation, and respectful dialogue. With projects in multiple issue areas, BPC combines politically balanced policymaking with strong, proactive advocacy and outreach.

ABOUT THE AMERICAN COLLEGE OF SPORTS MEDICINE

The American College of Sports Medicine (ACSM) is the largest sports medicine and exercise science organization in the world with more than 50,000 international, national and regional members and certified professionals. Across the spectrum from research to clinical practice to public education and advocacy, ACSM promotes research findings in its journals such as *Medicine & Science in Sports & Exercise*® and in conferences with global impact.

ACSM, an international advocate for evidence-based policies, promotes physical activity as a public health priority. One of ACSM's signature programs, the Exercise is Medicine® Global Health Initiative (EIM), embodies ACSM's commitment to improving health through science, education and medicine. EIM, a multi-organizational initiative, focuses on encouraging primary care physicians and other health care providers to include exercise when designing treatment plans for patients.

ABOUT THE ALLIANCE FOR A HEALTHIER GENERATION

The Alliance for a Healthier Generation is a catalyst for children's health. The Alliance works with schools, companies, community organizations, healthcare professionals and families to transform the conditions and systems that lead to healthier kids.

The Alliance's goal is to reduce the prevalence of childhood obesity and to empower kids to develop lifelong, healthy habits. Founded by the American Heart Association and Clinton Foundation, the Alliance collaborates with and empowers people and leaders to transform the environments that can make a difference in a child's health: homes, schools, doctor's offices and communities.

DISCLAIMER

This white paper is the product of the Bipartisan Policy Center's Nutrition and Physical Activity Initiative. The findings and recommendations expressed herein do not necessarily represent the views or opinions of the Bipartisan Policy Center, its founders, or its board of directors.

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I. Introduction

Obesity and obesity-related chronic diseases, such as diabetes and hypertension, constitute some of the most challenging and costly public health threats facing America today. To combat these threats, health care providers must be better equipped to address issues of diet and physical activity with their patients. Doctors, nurses, and other health professionals are uniquely positioned to deliver effective messages and counseling about the importance of these lifestyle factors in achieving and maintaining good health. Today's health care system, however, often fails to provide practitioners with adequate training and incentives to counsel patients about nutrition and physical activity.

This white paper focuses on options for improving medical education and training in topics such as nutrition and physical activity that have an important role to play in the prevention and treatment of obesity and chronic diseases. These topics have traditionally received little attention in formal medical school curricula and training programs, but they are increasingly essential as part of a comprehensive, patient-focused approach to treating some of the most common and consequential health problems affecting the American population today. Later sections of this white paper describe recent efforts to address the current knowledge and skills gap, and offer recommendations for further progress.



Keynote speakers at Alliance/ACSM/BPC October 2013 forum "Teaching Nutrition and Physical Activity in Medical School: Training Doctors for Prevention-Oriented Care," (from left to right): Howell Wechsler, Alliance for a Healthier Generation; Secretary Donna Shalala, Bipartisan Policy Center; Jim Whitehead, American College of Sports Medicine, and Secretary Dan Glickman, Bipartisan Policy Center

This white paper builds on ideas and insights generated by a daylong public forum held in Washington D.C., on October 17, 2013. The forum, “Teaching Nutrition and Physical Activity in Medical School: Training Doctors for Prevention-Oriented Care,” was jointly sponsored by the co-authors of this white paper: the Bipartisan Policy Center (BPC), the Alliance for a Healthier Generation (the Alliance), and the American College of Sports Medicine (ACSM). Participants included representatives from medical schools, insurance providers, licensing and certification boards, and community-based organizations, as well as recent and current medical students and practitioners.¹

Presentations and discussion at the October 17 forum focused on education and training for physicians, who are key players in a wider, systemic shift toward more emphasis on preventive care throughout the U.S. health care system. Doctors are also key players in the effort to change medical school curricula. Of course, the broader challenge of tackling America’s current obesity and chronic disease epidemic ultimately needs to engage the full range of health professionals, including not just physicians but also dietitians, pharmacists, nurses, community health workers, and others. And although medical schools clearly represent an important setting for education reforms, they are not the only place where improvements in health care training can be made. Changes are also needed in post-medical school residency, continuing medical education (CME), and other points along the spectrum of health professional training. Reflecting lessons learned from the October 17 forum, as well as the innovations, opportunities, and barriers highlighted by the forum’s diverse array of participants, this paper focuses on changes in medical schools as one starting point in what ultimately must become a broader discussion.

The Alliance, ACSM, and BPC have joined forces to focus on medical education and training as part of a broader effort to advance solutions to America’s crisis of obesity and chronic disease. Many of these solutions are congruent with growing interest in a more holistic, patient-centered, and prevention-oriented approach to health care. These developments are unfolding against the backdrop of the Affordable Care Act and private-sector efforts that are driving changes toward more outcomes-based, patient-centered care. Ensuring that medical professionals have the tools and expertise to address nutrition and physical activity is only one part of this broader agenda. Nonetheless, it is an area where practical improvements are within reach, if policymakers and stakeholders work together to implement changes.

The remainder of this white paper is organized as follows: Section II provides context and makes the case for a greater focus on nutrition and physical activity in the education and training of health care professionals; Section III discusses the current status of efforts in this area, while also describing barriers to change; Section IV highlights recent initiatives and provides several real-world case studies; Section V explores connections to broader changes in the delivery and reimbursement of health care more generally; and Section VI concludes with a set of specific, actionable recommendations.

Alliance for a Healthier Generation

Since the launch of the Healthier Generation Benefit (Benefit) in 2009, the Alliance has worked directly with 20 national insurers and large employer groups on their health benefit plans to ensure preventive services are available for the assessment and treatment of childhood obesity. As of 2014, more than 2.8 million children have access to the Benefit, with more than 56,000 health care providers in networks offering Benefit coverage. By collaborating with the American Academy of Pediatrics and the Academy of Nutrition and Dietetics, the Alliance has created tools and resources, including nine CME-accredited webinars, to support health care providers as they implement effective weight-management strategies within their own practices. The Alliance has presented at ten national and regional provider association conferences to educate and inform health care providers on the Healthier Generation Benefit program and to explain how providers can participate in the program. The Alliance, along with Emory University School of Public Health, has published two manuscripts based on its analysis of the Benefit program and expects to submit an additional manuscript for publication in late 2014. The Alliance is committed to ensuring that all families in need have access to critical preventive services and that all health care providers have the confidence and competence to deliver effective interventions.

American College of Sports Medicine

In 2010, the U.S. Department of Health and Human Services unveiled a ten-year plan, Healthy People 2020, which is meant to guide health-promotion and disease-prevention efforts nationwide. ACSM supports the mission, vision, and goals of this initiative and has programs and initiatives that closely align with its overarching goals: (1) to attain high-quality, longer lives free of preventable disease, disability, injury, and premature death; and (2) to promote quality of life, healthy development, and healthy behaviors across all life stages.

ACSM is working with BPC and the Alliance to shift the focus from curative to preventive care and to ensure that health care providers are empowered to help their patients harness the preventive and healing powers of healthy lifestyles.

In particular, ACSM recognizes the need to integrate physical activity into medical school curricula. While continuing-education opportunities—such as in-person conferences, online courses, certifications, and publications—are widely available through ACSM, there remains a critical need to educate doctors-in-training on the co-benefits of exercise and physical activity.

ACSM, through the Exercise is Medicine® global health initiative, has led the way in collaboration with the Cornell-Weill Medical School to develop a job task analysis that defines the knowledge and abilities that graduating medical students need to know to integrate the benefits of physical activity into primary care clinical practice. The work that ACSM is doing in this area is perfectly timed to coincide with the recent shift in focus of the

U.S. health system to population health management. Particular focus is being placed on high-risk populations and on opportunities to link clinical services to community-based physical activity assets.

Bipartisan Policy Center

In BPC's report *Lots to Lose: How America's Health and Obesity Crisis Threatens our Economic Future*, former Cabinet Secretaries Dan Glickman, Mike Leavitt, Donna Shalala, and Ann Veneman identified 26 consensus recommendations for concrete, real-world actions targeting decision-makers at all levels of government as well as within the private and nonprofit sectors. Several recommendations emphasized the importance of prevention-focused health care and the need for a stronger link between health-promotion activities that occur in clinics and those that occur in community settings. As one strategy for supporting a shift toward more prevention-oriented care, the co-chairs recommended that nutrition and physical activity training be incorporated in all phases of health professional education.

Since releasing *Lots to Lose*, BPC has been actively working on several fronts to implement that report's recommendations concerning health professional education. Most importantly, BPC has leveraged its ability to work with multiple stakeholders to synthesize information and perspectives and translate the results for key decision-makers in ways that drive policy change. In September 2012, the National Institutes of Health's (NIH) National Heart, Lung, and Blood Institute (NHLBI) invited BPC to join its Working Group on "Future Directions for Implementing Nutrition Across the Continuum of Medical and Health Professions Education and Training, and Research." The NHLBI Working Group developed a series of papers on the content and implementation process for health professional education; these papers were published in the *American Journal of Clinical Nutrition* in May 2014. In addition, BPC was asked to contribute a policy-oriented article focused on undergraduate medical education that builds on the recommendations from the *Lots to Lose* report.² Through these activities, BPC has engaged medical students, schools, health professionals, and policy makers in a variety of forums including hospital grand rounds and health professional conferences.

Summary of Recommendations

1. Develop and implement a standard nutrition and physical activity curriculum.

Diverse stakeholders should work together to create a standard nutrition and physical activity curriculum that can be integrated into the existing curricula of medical schools with minimal disruption, using a phased-in approach. Ultimately, such a curriculum should also be tailored for educational programs in related health professional fields, such as nursing, pharmacy, and dental schools, as well as schools (or programs) for others. Once national standards exist, students should also work with administrators and teachers to adapt these standards to their own school environment. In the absence of national standards, schools could begin by looking to existing templates, such as the Nutrition Academic Award (NAA) or the Nutrition in Medicine (NIM) curriculum, for guidance.

2. Include more nutrition and physical activity content in licensing and certification exams.

Organizations responsible for developing and disseminating licensing and certification examinations should include more content on nutrition and physical activity to reflect and complement the new standard curriculum proposed above.

3. Increase nutrition and physical activity requirements for residency and continuing education programs.

Beyond medical school curricula and exams, residency and continuing education provide additional opportunities to incorporate training in nutrition and physical activity. Boards and accrediting bodies should add those topics to their residency and Maintenance of Certification programs.

4. Expand board-accredited advanced training programs to create a cadre of experts in nutrition and physical activity who can teach health professionals.

For example, to help meet the demands of new curriculum standards, the ABMS, working with the American Board of Internal Medicine, the American Board of Pediatrics, and the American Board of Family Medicine, could help create subspecialty fellowship programs in nutrition and physical activity. These organizations can also promote training through existing subspecialties. Training a new cadre of experts is critical to transmit the knowledge, attitudes, and skills that will be needed by future generations of health professionals.

5. Provide federal and state support for reforms in medical education and health care delivery that can help providers better meet patient needs with respect to nutrition, physical activity, and other lifestyle factors.

While the authors of this white paper do not necessarily endorse any specific legislative approach, one option is to provide federal or state grants to support the development and implementation of new curricula at medical schools, improvements in residency training, or changes in continuing-education and licensing requirements.

6. Recognize and reward innovation to drive continued funding and administrative support for reform efforts that are already underway.

This white paper highlights just some of the initiatives and programs being undertaken by U.S. medical schools to address changing health care needs with respect to the treatment of obesity and related chronic diseases. Innovation and leadership in nutrition and physical activity education should be recognized—for example, through an awards program—in ways that will help galvanize other schools and organizations to take action on a broader scale.

7. Provide reimbursement for health services that target lifestyle factors such as nutrition and exercise.

As long as the health care marketplace undervalues preventive care, health care professionals will lack financial support to address these issues with their patients and medical schools will have less incentive to train their students accordingly. Payers should expand reimbursement for both clinic- and community-based providers of evidence-based preventive services addressing nutrition and physical activity.

8. Extend improvements in nutrition and physical activity education to other health professional schools.

Specifically, other health professional schools (e.g., nursing, dental, pharmacy, etc.) and their associations should commit to developing and presenting curriculum changes to relevant boards and curriculum committees for consideration, modification, and ultimately adoption.

9. Increase and broaden awareness of the need for changes in medical education.

Beyond other health professional schools, stakeholders should engage a broad swath of organizations to help raise awareness of the importance of nutrition and physical activity in medical education and to advocate for policy changes.

II. The Case for A Greater Emphasis on Nutrition and Physical Activity in the Education and Training of Health Care Professionals

Poor nutrition and lack of physical activity are key risk factors implicated in our nation's most urgent public health challenge: high rates of obesity and obesity-related chronic diseases. According to the Centers for Disease Control and Prevention (CDC), fully two-thirds of American adults are overweight or obese and as many as half suffer from one or more chronic diseases.³ At the same time, nearly 15 percent of Americans face food insecurity; limited access to nutritionally adequate foods is associated with increased risk of negative health consequences such as diabetes and obesity.⁴

The alarming implications of these numbers, not only from a public health standpoint but also in terms of economic impacts and government spending, have been well documented elsewhere. As BPC's 2012 report, *Lots to Lose*, pointed out: "Chronic poor health affects everything from the academic performance of U.S. students, to the productivity of U.S. workers and the readiness of the U.S. military."⁵

Obviously, chronic poor health also affects health care costs, which have grown explosively in recent decades. As a share of the overall economy, spending on health care doubled between 1980 and 2010; today, health care spending accounts for \$2.8 trillion per year, or 17 percent of U.S. GDP—a level of expenditure far higher than that of most other developed countries.⁶ Chronic diseases, in particular, have played an important role in this rapid escalation. According to a 2009 CDC study, preventable diseases—for example, diabetes—now account for as much as 75 percent of overall dollars spent on health care in the United States.⁷

Clearly obesity and related chronic diseases are only one component of the larger health and health care costs challenges the nation faces. And, while better nutrition, more physical activity, and other healthy lifestyle changes are not a silver bullet, they are a key part of the solution to reducing obesity, managing chronic disease, and moderating future health care costs. The enormity of these challenges means that no potentially meaningful point of leverage can be ignored. Diet and physical activity warrant focused attention not only because they are major risk factors for obesity and related chronic diseases, but also because they can be modified through changes in behavior.

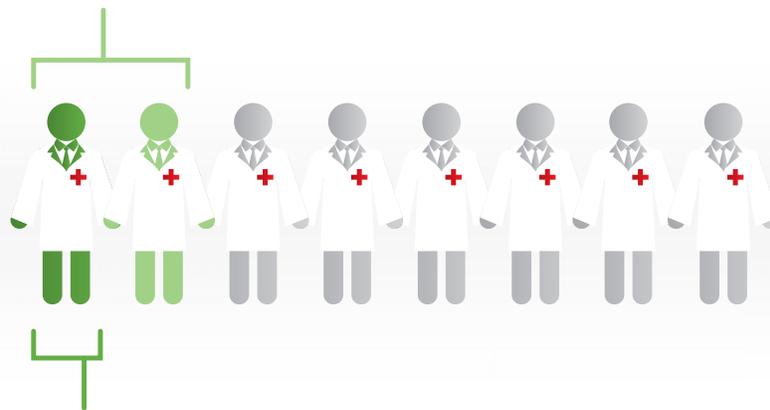
Of course, initiating and sustaining major lifestyle changes isn't easy, whether at an individual level or across communities and society as a whole. As every American who has tried a new diet or exercise regimen can attest, changing behavior is difficult and only produces lasting health benefits if the changes are maintained over time. For this reason, motivating and supporting improvements in nutrition and physical activity at the scale required to make a meaningful dent in our nation's current obesity and chronic disease epidemic will require individuals, families, community organizations, large institutions, and employers to be engaged.

Doctors have the opportunity to play a significant role: as trusted sources of health-related information and guidance, they are uniquely positioned to educate patients about the links among chronic disease, obesity, diet, and physical activity; to motivate individuals and families to make healthier choices; and to link patients to a broader set of resources within their communities and beyond. Several studies provide evidence that patients who are counseled by their physician on the importance of weight loss are more likely to attempt weight loss,⁸ increase their physical activity,^{9,10} improve their diet,¹¹ and lose weight.¹² Physicians are also uniquely positioned to help patients make sense of the often confusing and sometimes contradictory messages about food and nutrition that are widely disseminated in the mainstream media. The science of nutrition is imprecise and expert thinking on what constitutes a healthy diet has changed considerably over time; with appropriate training, health care professionals can play a critical role in helping individuals and families sort through, understand, and apply the most current and relevant information.

Finally, while the focus in this white paper is on educating medical professionals about nutrition and physical activity as part of a larger strategy to prevent obesity and obesity-related chronic diseases, it is important to recognize that poor nutrition plays a role in many health problems besides obesity. Thus, doctors need to be equipped to address a whole range of nutrition-related medical issues, such as the role of micronutrients in maintaining good health and preventing nutrition deficiencies. Similarly, pediatric providers have an important role to play in communicating the benefits of breast-feeding and encouraging parents to instill healthy eating habits in children at a young age.

Unfortunately, America’s medical education and health care delivery system does not currently provide doctors with the expertise or incentives to deliver messages about weight, diet, physical activity, and chronic disease in a consistent and effective manner. A 2010 survey of nutrition education in U.S. medical schools found that this subject was covered inadequately or unevenly throughout all levels of medical training, including undergraduate, post-graduate, fellowship, licensing, board certification, and continuing education.¹³ The reasons for this lack of emphasis are varied—one important issue, clearly, is the fact that current health care reimbursement mechanisms often fail to provide incentives for nutrition counseling and other types of preventive care (more on this issue in a later section).

**LESS THAN 1/4 OF PHYSICIANS FEEL THEY RECEIVED ADEQUATE TRAINING
IN COUNSELING PATIENTS ON DIET OR PHYSICAL ACTIVITY**



LESS THAN 1/8 OF MEDICAL VISITS INCLUDE COUNSELING FOR NUTRITION

**FEWER THAN 30% OF MEDICAL SCHOOLS
ARE MEETING THE MINIMUM NUMBER
OF HOURS RECOMMENDED BY THE
NATIONAL ACADEMY OF SCIENCES**



Sources: Howe et al. (2010); Centers for Disease Control and Prevention & National Center for Health Statistics (2010); Adams et al. (2010)^{14,15,16}

In fact, despite a growing sense of urgency about the scope and cost of America’s obesity epidemic, the available evidence suggests that the average number of hours devoted to nutrition education in U.S. medical schools has been declining, from 22.3 hours in 2004 to 19.6 hours in 2008 and 2009.¹⁷ Both figures fall short of the 25–30 hours of nutrition education recommended in 1985 by the National Academy of Sciences (NAS) in a 1985 report on the subject.¹⁸ Meanwhile, the percentage of medical schools that offered a dedicated nutrition course declined from 35 percent in 2000 to 25 percent in 2008.¹⁹

Relative to the NAS recommendation, fewer than 30 percent of medical schools currently provide adequate nutrition education,²⁰ despite the consensus view among experts that, as the American Medical Association (AMA) put it in a recent report, “The universal importance of weight management, including the prevention of overweight and obesity, should be emphasized in the medical school curriculum.”²¹

That this gap persists is perhaps surprising given longstanding awareness that nutrition education has a place in medical training. Since the 1980s, several groups have recommended that doctors receive nutrition training. For example, congressional hearings were held on the subject in the early 1980s. In 1990, the National Nutrition Monitoring and Related Research Act empowered U.S. medical schools to incorporate nutrition training in classroom curricula and clinical training. At the time, several professional organizations, including the American Academy of Family Physicians and the Society for Teachers of Family Medicine had already moved to develop educational guidelines or detailed curricula for nutrition training in residency programs. The first federal clinical guidelines for treating obesity were released by the NIH in 1998. These guidelines underscored the importance of the physician’s role and recommended that health care professionals discuss weight control with their obese patients.²² More recent guidelines from the American Heart Association, American College of Cardiology and the Obesity Society continue to recommend that physicians counsel overweight and obese patients on the health risks associated with excess weight and the benefits of lifestyle changes. The treatment algorithm also instructs physicians to determine appropriate weight-loss goals for patients, assess patient readiness to change, and prescribe additional lifestyle interventions as needed, including calorie-restricted diets and intensive counseling.²³

At a broader level, other efforts have highlighted the need for new models of education, training, and care delivery that can help providers develop the skills demanded by a changing disease burden and evolving health care system. The rise of chronic diseases is already driving a greater emphasis on patient behavior and lifestyle factors, while also increasing the need for coordination among multiple providers. For example, an overweight patient with diabetes may regularly see a primary care physician, a nurse practitioner, a certified diabetes educator, an endocrinologist, a podiatrist, a pharmacist, and an exercise physiologist, among other providers, who are not necessarily all part of the same medical network or hospital system. Responding to these challenges, a landmark report by the Lancet Commission in 2010 recommended a systems-based approach to instruction in which medical schools design their curricula around core competencies and promote effective teamwork across professional silos.²⁴ Similarly, the Institute of Medicine’s Global Forum on Innovation in Health Professional Education²⁵ is exploring promising health education practices that boost interprofessional collaboration and better match the needs of patients and the local health care system.

Despite these efforts and some corresponding changes in accreditation and licensing exams—several of which have been revised to include some questions on nutrition and related subjects—exit surveys conducted by the National Board of Medical Examiners

continue to indicate that more than half of medical school graduates do not believe they received the nutrition education they need for medical practice.²⁶ Other studies likewise find that relatively few residents, fellows, and other clinicians feel comfortable addressing nutrition issues with their patients.²⁷ In the sections that follow, we examine the barriers that continue to stand in the way of adequate nutrition and physical activity training in medical school, while also describing a number of promising initiatives that have recently been launched in an effort to overcome these barriers.

III. Nutrition and Physical Activity in Medical Education Today: Barriers & Opportunities

Barriers To Educating Health Professionals in Nutrition and Physical Activity

Difficulties finding space for additional material in crowded curricula

Slow institutional changes to traditional curricula

Lack of board-certified subspecialty fellowship in nutrition and physical activity

Lack of credentialing exam questions testing competency in nutrition and physical activity

Medical schools' lack of funding and resources to change curriculum requirements

Structural biases in health care marketplace that undervalue preventive care

Lack of incentives for medical students and professionals to place a focus on nutrition and physical activity

There are 170 accredited medical schools operating in the United States today.²⁸ As noted in the previous section, the average amount of time devoted to nutrition training in the standard medical student curriculum has dropped below 20 hours, and few schools currently meet the recommendations of the NAS or other expert organizations for nutrition and physical activity training. Moreover, this shortfall in education and training persists beyond medical school through residency and continuing education.

To the extent that nutrition and physical activity are covered, they are usually included in preclinical courses that students take in their first and/or second years of medical school. Often these courses are part of a larger modular training program in subjects such as

metabolism, nutrition and endocrinology, or gastrointestinal medicine. Additionally most schools do not directly provide teaching courses on physical activity. Whether the topics of nutrition and physical activity are introduced in the clinical years (third and fourth years) is generally up to the discipline—usually family medicine or pediatrics—in which the student is rotating and depends on the individual practitioner’s expertise in the subject. Typically the focus is on treating specific conditions, diseases, or health problems rather than on addressing primary prevention strategies. When physicians and other providers lack the expertise and training to effectively address nutrition, physical activity, and other lifestyle factors that are central to a prevention-oriented approach to health care, it is their patients who ultimately pay the price in terms of lost opportunities to improve wellbeing, avoid illness, and take greater control of their own long-term health outcomes. Those lost opportunities are extremely costly, not only to the individual patient who must bear the burden of coping with a condition or disease that might have been avoided or ameliorated with earlier intervention, but also to the patient’s family, community, and the health care system as a whole.

Furthermore, students are not necessarily taught *how* to speak to patients about lifestyle factors, which can further exacerbate the effects of weight bias displayed by many health care providers, including medical students and physicians. Providers’ negative stereotypes about obese and overweight patients manifest themselves in both subtle and overt ways that impair the care patients receive and the relationship they have with their providers.²⁹ Mastering motivational interviewing techniques—such as reflective listening, shared decision-making, and agenda/goal-setting—could help physicians engage in a more productive dialogue with patients to help change health behaviors.

Motivational Interviewing

Motivational interviewing refers to a style of counseling that seeks to engage intrinsic motivation in the client to resolve ambivalence and change behavior. Some of the specific techniques and strategies used in motivational interviewing include reflective listening, shared decision-making, and patient-centered agenda-setting to help clients establish goals and make informed behavior choices. Motivational interviewing has been used extensively to treat addiction, but it is increasingly also being used to address nutrition, physical activity, and other lifestyle factors and behaviors that are relevant to the treatment of obesity and chronic disease.

While there is broad support for the notion that physicians, nurses, and other health professionals should be equipped to address issues of obesity, nutrition, physical activity, and chronic disease, reforms in the medical education system have been slow to follow. One obvious obstacle is the difficulty of finding space for additional material in curricula that are already crowded with requirements and continually challenged by the need to cover new information.

Institutional inertia is also an important factor. As the Lancet Commission observed:

“Curricula often become closely linked to historical legacy that codifies the traditions, priorities, and values of the faculty in that profession. Over time, the curriculum is rarely re-examined but is only slowly modified to accommodate new information. Not uncommonly, schools change the objectives to meet what the faculty want to teach so that the curriculum drives the objectives, rather than the wished for learning objectives driving the curriculum.”³⁰

In this environment, strong advocates are needed to champion change; absent a passionate voice within the faculty or administration, new subjects or major curriculum changes are unlikely to be introduced. Whether such advocates are present and in a position to affect change varies greatly from school to school.³¹

Of course, medical schools can and do modify their curricula over time—both proactively and in response to changing requirements. In the middle of the 20th century, for example, schools transitioned from science-based learning to problem-based learning, and in recent years, many schools introduced a more integrated curriculum. In 2010, the Lancet Commission concluded that “[a] third generation [of training] is now needed that should be systems based to improve the performance of health systems by adapting core professional competencies to specific contexts, while drawing on global knowledge.”³² The Association of American Medical Colleges (AAMC) has periodically recommended that new topics, such as cultural competency, be added to the general medical school curriculum. However, the AAMC to date has not specifically emphasized the role of nutrition or physical activity in the prevention of chronic disease.³³ Using the new framework of “competency domains for health professionals,” the AAMC should help guide schools toward integrating effective nutrition education into their longitudinal curricula.³⁴

Another barrier is the lack of a board-certified subspecialty fellowship in nutrition and physical activity. Such fellowships play a critical role in the medical education system, because they allow students to deepen their expertise on a particular topic within their chosen specialty during the post-residency portion of their training. A few organizations, such as the American Board of Physician Nutrition Specialists and the American Board of Obesity Medicine, currently offer fellowship training programs and board certifications in nutrition (more than 13 such fellowships are available at present), but these programs are not accredited by the ABMS, which is the principal certification body for doctors. As a result, any coverage of lifestyle factors is likely to be scattered across several specialties (such as gastroenterology, internal medicine, family medicine, and pediatrics) without any one specialty—including the more recently added board-certified specialty in preventive medicine—providing in-depth expertise in nutrition and physical activity. Without a board-certified subspecialty fellowship, few medical students will be motivated to seek the additional training needed to mentor a future generation of physicians on these topics.³⁵

The exams used to credential medical professionals provide another important indicator of the emphasis accorded to nutrition, physical activity, and other lifestyle factors in the U.S.

medical education system. Between 1986 and 1993, the number of nutrition-related questions included on the U.S. Medical Licensing Examination (USMLE) increased for both the Part I (Step 1) and Part II (Step 2) exams.³⁶ In 2002, the National Board of Medical Examiners (NBME)—responding to a recommendation from various nutrition interest groups—also approved a nutrition subscore for the Step 1 and Step 2 exams. The subscore appears as a separate score on students’ and schools’ reports to indicate performance on the specific test items identified and coded as “nutrition” by the NBME.³⁷ According to some nutrition education experts, however, the questions currently designated as nutrition-focused are not necessarily matched to clinical practice and evidence-based medicine; in other words, they may test knowledge but not competency.³⁸ Because schools have a strong incentive to teach to the test, questions on credentialing exams can be effective drivers of change within educational institutions. Exam questions alone are not the answer, but because they play an important role, more needs to be done to make meaningful, systemic progress on this front.

Finally, funding is an issue for many medical schools. Developing new courses and/or changing curriculum requirements can require a significant investment of staff time and potentially new training to ensure that faculty has the required knowledge and skills to teach these new courses. At the same time, however, opportunities for improvement exist that do not require large new investments. This tension suggests that while incremental change is certainly possible now, and in fact is occurring in a number of schools (including several discussed in this white paper), more comprehensive, sustained change will likely require either an addition or reallocation of resources to support curriculum development and training. Providing support to spread and scale innovative, team-based practices can leverage resources and create efficiencies.

A more fundamental set of barriers arises from the incentives and structural biases of the health care marketplace as a whole. As long as that marketplace undervalues preventive care—for example, by not providing consistent and sufficient reimbursement for services that target lifestyle factors like nutrition and exercise—health care professionals will have few incentives to address these issues with their patients and medical schools will have no incentive to train their students accordingly. Similarly, medical students are unlikely to put a high priority on mastering knowledge and skills on which they do not expect to be tested and for which they do not expect to be reimbursed once they enter practice. Delivery of care in a highly time-constrained setting, in which doctors and nurses have limited time to spend with individual patients, creates a further impediment, particularly if physicians lack training in behavior counseling and confidence that their interventions will result in sustained behavior changes. Furthermore, if established practitioners are not in the habit of incorporating nutrition and physical activity counseling in their interactions with patients, these issues will also be absent from the mentoring that medical school graduates and residents receive in clinical settings.

Fortunately, interest in overcoming these barriers has paralleled growing awareness of the importance of lifestyle factors in the treatment and prevention of obesity and chronic diseases, and the importance of preventive care more broadly.

What Do Medical Students and Health Care Professionals Say They Need to Know?

At the October 2013 Alliance/ACSM/BPC forum, a smaller group of doctors, medical students, and medical-school teachers and administrators came together to share thoughts and perspectives from the field. Much of the discussion focused on the barriers discussed in this section, from the need for high-level champions to advocate for curriculum reforms to the importance of including questions on licensing exams. But the group also took the opportunity to articulate what they believe medical students and health care professionals need to know to engage more effectively with their patients on issues of nutrition and physical activity, specifically:

WHAT TO SAY—that is, how to talk to overweight patients about healthy eating and exercise. For example, what does it mean to advise a patient to “eat healthy”?

HOW TO SAY IT—that is, what words to use to talk about excess body weight and how to engage patients using motivational interviewing or other techniques to overcome stigma, engage patients as equal partners in the conversation, and provide counseling designed to support behavior change.

WHO ELSE CAN HELP and **WHAT OTHER RESOURCES EXIST**—some practitioners already have access to dietitians or exercise physiologists but many don’t. While doctors are not and should not attempt to act as dietitians or health coaches, they don’t necessarily have a good sense of how to identify and reach the other professionals or community resources that could be helpful to their patients, nor do they always know how to connect their patients to these resources via referrals or in other ways.

A BETTER UNDERSTANDING OF THE PATIENT EXPERIENCE—to effectively engage patients in a dialogue about lifestyle factors, health care professionals must occasionally get outside the clinic walls in the course of their educational training and after they enter practice. This exposure is needed to better understand the patient population and the community setting in which care is being delivered, both in terms of the challenges patients confront and the resources that might be available to them.

IV. Recent Initiatives and Opportunities for Nutrition and Physical Activity Education Reform

Recent years have seen several initiatives to advance nutrition education and lifestyle medicine, from efforts to develop new curriculum materials to student-led organizations that are working to supplement existing course offerings within the medical school setting. This section provides an overview of some key examples that stakeholders should consider as they contemplate different models for creating broader change.

In 1997, for example, the National Heart, Lung, and Blood Institute (NHLBI) of the National Institutes of Health launched the Nutrition Academic Award (NAA) program. Starting in 1998, the NAA began providing five-year grants to medical schools to support the development or enhancement of curricula to “learn nutrition principles and clinical practice skills with an emphasis on preventing cardiovascular diseases, obesity, diabetes, and other chronic diseases.”³⁹ As of 2005, 21 medical schools had participated in the program, and the NAA program had helped develop new resources, such as a suggested curriculum. This work was important in building a foundation for change at participating schools, but the lack of sustained funding meant that after five years, no support or additional resources existed to implement changes in a systemic fashion.

More recently (in September 2012), the NHLBI’s Division of Cardiovascular Sciences together with the NIH Office of Disease Prevention and Division of Nutrition Research Coordination convened a working group meeting titled “Future Directions for Implementing Nutrition across the Continuum of Medical Education, Training, and Research.”⁴⁰ The goal of this summit was to re-examine the NAA experience and guidelines and develop new recommendations for implementing nutrition education across the continuum of medical, nursing, dental, and other health professional education and specialty training. Since the summit, the convening organizations have been working to promote their findings in peer-

reviewed publications. The results of the September 2012 meeting have been published as a supplement to the May 2014 issue of the *American Journal of Clinical Nutrition*.⁴¹ The working group has also completed, and made available on its website, a survey of nutrition topics in medical school curricula.⁴²

Individual schools—including four schools that were featured at the October 2013 Alliance/ACSM/BPC forum in Washington, D.C.—have also begun to take action. For example, the University of South Carolina (USC) School of Medicine, Greenville has launched an initiative to foster the integration of lifestyle medicine in its medical school curriculum. In 2013, USC Greenville and Harvard Medical School’s Institute of Lifestyle Medicine at Joslin Diabetes Center hosted a Lifestyle Medicine Think Tank to develop a vision and identify focus areas for building and implementing a national lifestyle medicine curriculum in medical schools.⁴³ These organizations are now seeking resources to advance the vision, goals and action steps that emerged from the think tank.

Medical, nursing, and pharmacy schools that are interested in expanding students’ exposure to nutrition and physical activity topics have several options, most of which can be tailored to suit a school’s specific needs and challenges, as well as the type and level of resources available. For example, schools can introduce new courses specifically devoted to these topics and/or incorporate new materials into existing courses. Such courses can be made mandatory or can be offered on an elective basis. A potentially less resource-intensive option is to introduce nutrition, physical activity, and other lifestyle medicine materials through lunch meetings, workshops, or seminars. Online learning offers another potentially cost-effective educational tool. Researchers at the University of North Carolina found that institutions using the online Nutrition in Medicine curriculum (discussed below) provided significantly more hours of nutrition instruction (22.1 hours versus 17.4 hours) than institutions that did not make use of this tool.⁴⁴ Finally, students can also establish their own focused interest groups, preferably with the active support and input of interested faculty and administrators.

Examples of all of these approaches can be found at U.S. medical schools today. At the University of Colorado School of Medicine and Anschutz Medical Campus in Denver, nutrition and physical activity elements were incorporated in each year of the medical school curriculum. The school also offered these topics as an elective in its residency program and developed a fellowship in pediatric nutrition. The USC Greenville medical school likewise took the approach of integrating nutrition and exercise across all four years of its undergraduate curriculum; USC Greenville also worked directly with the YMCA to implement the Exercise is Medicine program developed by the ACSM and AMA,ⁱ and it sponsored a number of team-building initiatives to promote exercise and healthy nutrition among faculty and students. Responding to students’ self-reported perceptions of nutrition education, the Boston University (BU) School of Medicine associate dean for academic affairs appointed a committee—called the Nutrition Vertical Integration Group—to review nutrition medicine in the school curriculum in 2007. Led by a faculty initiative to expand the nutrition curriculum,

ⁱ The Exercise is Medicine program is discussed in the next section of this paper.

BU students subsequently formed the Student Nutrition Awareness and Action Council (SNAAC) in 2009. SNAAC worked with the administration to support the vertical integration of nutrition and obesity-prevention education throughout the four-year medical school curriculum and organized a variety of additional extra-curricular educational opportunities. To reach multiple medical schools in a cost-effective way, the Nutrition Research Institute at the University of North Carolina, Chapel Hill (UNC-Chapel Hill), has developed an extensive online curriculum titled Nutrition in Medicine (NIM) that is free to medical schools and their students.⁴⁵ NIM curriculum currently offers more than 50 learning modules, ranging in length from 15 to 60 minutes. It includes interactive exercises, animations, and video cases and has been used by more than 100 medical schools in the United States since it was launched in 1992.

As most recent reform initiatives have recognized, incorporating nutrition, physical activity, and other areas of lifestyle medicine into actual medical practice will require training, mentoring, and reforms beyond the classroom curricula offered in medical schools. Specifically, these topics must be incorporated with other subjects covered in post-graduate residency, fellowship training, and continuing education. A shift in this direction would also align with a broader effort—consistent with the findings of the Lancet Commission report discussed previously—to focus on competencies and outcomes while moving away from the siloed approach that has traditionally characterized most medical school curricula and training programs. Finally, questions aimed at demonstrating competency in preventive care and lifestyle medicine should be included in key credentialing and licensing exams. Education and training will adapt to changes in what is being tested. Similarly, medical students and residents will be more likely to demand training in these topics and pursue advanced knowledge if they know it will be tested on exams. Some steps have already been taken in this direction—for example, as discussed earlier, the USMLE now includes a few questions on nutrition—but opportunities exist to do much more.

Case Studies of Four Different Approaches to Teaching Nutrition and Physical Activity in Medical School

University of Colorado School of Medicine

The University of Colorado School of Medicine is a large, traditional medical school that has taken steps to integrate nutrition education across all four years of its undergraduate curriculum. In addition, the school offers clinical nutrition electives for internal medicine and pediatric residents and a fellowship in pediatric nutrition through its post-graduate program. From 1988 to 2005, the school's core curriculum for first-year medical students included a 20-hour Principles of Nutrition component. As part of curriculum reforms introduced in 2006, nutrition topics were integrated in all four years of the undergraduate program, including 26 hours of classroom time devoted to nutrition topics in the second-year metabolism course. (This unit incorporates topics previously covered in the Principles of Nutrition course, including linking nutritional biochemistry to public health issues and clinical medicine.) Curriculum reforms were spearheaded by individual faculty members with a strong interest in nutrition; they were successful in part because they sought buy-in from other faculty, including department chairs, and were careful to propose changes that would not disrupt the existing curriculum too much or require a substantial re-allotment of time. In 2000, the school received external support for these changes in the form of a grant from the NIH's Nutrition Academic Award (NAA) program. The NAA funding ran out in 2005, but the school is committed to maintaining the nutrition curriculum and has set aside a small amount of administrative funding for a dietician, who provides administrative support to nutrition electives and other teaching activities. Identified challenges going forward include the difficulty of funding faculty time spent to develop and evaluate educational initiatives and the continuing gap between training and practice. Even when students receive a strong background in nutrition during medical school, they often lack the role models and mentoring needed to reinforce these skills when they go to community-based or primary care practices.

University of South Carolina School of Medicine Greenville

The School of Medicine Greenville is a new, four-year medical program launched by a partnership between the University of South Carolina (USC) and the Greenville Health System (GHS); its inaugural class matriculated in the fall of 2012. Greenville's curriculum is designed to bring students and faculty together in an inter-professional, integrated, and practical manner and to incorporate nutrition and physical activity throughout all four years of coursework. As part of its effort to highlight the importance of physical activity, the school is working with its local YMCA fitness professionals and with GHS practicing physicians to implement and demonstrate the Exercise is Medicine initiative. In addition, Greenville hosted a two-day think tank in September 2013 to strategize about increasing the visibility of lifestyle medicine in medical education across the United States. Finally, Greenville faculty and students have joined forces to organize a number of events and ongoing activities to promote healthy nutrition and exercise habits in the school's own population (e.g., establishing an organic garden on campus; adding five FitDesks to the student lounge for truly active learning; and leading an exercise club that includes a running group, a cycling group, and a yoga group) —the idea being that health care professionals will be more effective if they not only educate their patients but can model healthy behaviors themselves.

Boston University School of Medicine

In 2005, two students at the Boston University School of Medicine (BUSM) conducted an informal assessment of the school's nutrition curriculum and found that most BUSM students reported fewer than 20 hours per year of nutrition education and only 17 percent felt qualified to counsel patients about nutrition. A year later, the school received a Physician Nutrition Specialist and two Clinical Nutrition Internship Program awards from the American Society of Nutrition to assess the medical curriculum and initiate reforms. The associate dean for academic affairs subsequently appointed a committee—the Nutrition Vertical Integration Group (VIG—to vertically integrate nutrition education in the medical school curriculum. In 2009, two BUSM students formed the Student Nutrition Awareness and Action Council (SNAAC), a novel student-led effort to develop, evaluate, and sustain nutrition medicine education. Since its formation, SNAAC has worked with the Nutrition VIG to implement curriculum changes; in addition, SNAAC organizes a variety of extra-curricular activities to improve nutrition knowledge and skills. Other programs at BUSM focus on outpatient care and community wellness, while also fostering inter-professional development across multiple disciplines, including medicine, nutrition, public health, and mental health—one example is a program that pairs dietetic interns and medical students. Time and funding are challenges for SNAAC: at present, the group is entirely supported by grants; finding the time to organize and implement activities is an issue for busy students and faculty advisors alike.

University of North Carolina (UNC) Nutrition in Medicine On-Line Curriculum

Seeing a need for improved nutrition education among health care professionals—at the time only about a quarter of U.S. medical schools required any nutrition education and only four had nutrition departments—faculty at the UNC-Chapel Hill Nutrition Department launched the Nutrition in Medicine (NIM) project in 1992. The aim was to develop a nutrition curriculum that could be widely shared at little or no cost to users. The NIM curriculum—which was jointly developed by the department of nutrition, School of Public Health, School of Medicine at UNC-Chapel Hill, and the UNC Nutrition Research Institute—has since evolved to encompass more than 50 online learning modules. The modules are relatively short, 15 to 60 minutes in length, and address a wide range of nutrition-related clinical challenges. The core curriculum covers the biochemical basis of nutrition, nutrition epidemiology, clinical nutrition (including nutrition assessment), and nutrition-related preventive health care using a combination of lessons, interactive exercises, animations, and video cases. The online content also features integrated assessment, performance-based remediation, review questions, and virtual patient interactions with immediate feedback. By its nature, the NIM program is scalable and flexible; as such, it can be adapted to suit the needs and circumstances of a variety of users.

To date, the NIM curriculum has been used by more than 100 medical schools in the United States and roughly 150 medical schools worldwide. A key to the program's success has been that all the materials are made available free of charge. However, this has also created funding challenges—currently NIM has 22 sponsoring organizations and while its costs are not high, the program needs to continue to find new sources of support to keep its materials up-to-date and available. As a complement to its online curriculum for medical students, the NIM team at UNC has launched Nutrition Education for Practicing Physicians (NEPP), an online nutrition curriculum for practicing physicians. The NEPP curriculum includes short (5- to 15-minute) skill-builder modules designed to impart skills that can be quickly incorporated into physicians' daily practice, as well as longer (30- to 40-minute) foundation modules that cover important nutrition background information.

Both the NIM and NEPP curricula are available at www.nutritioninmedicine.org.

V. Linking to Broader Changes in Health Care Delivery

This section discusses three areas of reform in the broader health care system that are critical—in combination with a greater focus on nutrition and physical activity in medical education—to help providers engage more effectively with their patients on lifestyle issues related to obesity and chronic disease. These three areas of reform include: (1) connecting patients with broader networks of support and expertise, (2) changing incentives through reimbursement policies, and (3) promoting research and information-sharing on the role of nutrition and exercise in achieving and maintaining good health.

Connecting Patients with Broader Networks of Support and Expertise

In addition to providing information and guidance concerning the importance of diet, exercise, and other healthy lifestyle choices, doctors and nurses can help connect patients and their families to a broader network of resources and support outside the clinical setting. Initiating these connections could be one of the most important ways that health care professionals help patients learn about, implement, and sustain behavior changes. Experience with several recent initiatives suggests that community health workers, health coaches, dietitians and nutritionists, and others can work effectively with individuals and groups to change awareness and habits around diet and exercise—either in collaboration with a doctor or independently. Moreover, their interventions can be more cost-effective than the same services delivered by a traditionally trained doctor or nurse practitioner. As previously mentioned, a team-based approach to care is becoming increasingly important with the intensified burden of chronic diseases and the growing needs of an aging population in which many individuals suffer from multiple chronic conditions. In addition, the Affordable Care Act helps provide the legislative underpinning to support more integrated care delivery models, such as accountable care organizations and patient-centered medical homes. In April 2013, BPC’s Health Care Cost Containment Initiative proposed a broader set of reforms in a paper titled [*A Bipartisan Rx for Patient-Centered Care and System-Wide Cost Containment*](#).⁴⁶ The goal of these reforms is similar: create

incentives for patients and providers to enroll in alternative delivery systems that promote higher quality and better value in the health care system.

A recent example of a community-based approach to preventing chronic disease is the YMCA's Diabetes Prevention Program, which grew out of a collaboration between the YMCA and the CDC, and which later received funding from UnitedHealth Group to explore how group-based lifestyle interventions could be effectively delivered to reach the millions of Americans with prediabetes. In this program, trained lifestyle coaches work with small groups to help at-risk individuals improve nutrition, increase physical activity, and implement other healthy behavior changes. Participants benefit from regular meetings and receive consistent motivational support in working toward program goals with respect to weight loss and increased physical activity. The Diabetes Prevention Program is now offered at more than 100 YMCA locations around the country and has been adopted by some employers, insurers, and other community organizations as well.^{47,48}

Teaching About Social Determinants of Health and Food Insecurity at Oakland University William Beaumont School of Medicine

More medical schools are teaching students about the economic and social conditions—such as food insecurity—that influence patients' health beyond their access to medical care. Oakland University William Beaumont School of Medicine (OUWB) is a new medical school in Michigan whose educational philosophy is deeply rooted in this holistic approach to health promotion, including an emphasis on social determinants of health and community engagement. Food insecurity—or consistent access to adequate food for a healthy, active life—is one of several social determinants of health that is woven throughout OUWB's curricular and co-curricular offerings. In the curriculum, OUWB's mandatory longitudinal courses in "Promotion and Maintenance of Health" and "Medical Humanities and Clinical Bioethics" may be coordinated with a basic science discipline such as biochemistry or an organ system course such as Gastroenterology and Hepatology. The goal is for students to understand food insecurity in a comprehensive way—ranging from its economic and cultural influences to its effects on an individual's metabolism and overall health. Students also have opportunities to explore the topic through community-based research and engagement. For example, one student is working to create healthy recipe cards for foods delivered to needy families through the Backpack Program, which provides weekend meals to children who qualify for free or reduced-price school lunch. The COMPASS Center for Community Engagement provides many service learning options related to food insecurity through partnerships with local food banks and feeding agencies, including opportunities for medical students to conduct basic health screenings or to provide nutrition education for needy families.⁴⁹

Other initiatives also look to health care professionals to provide the initial impetus for behavior change and direct patients to community-based sources of support. A recent innovation along these lines involves physicians prescribing better nutrition or increased physical activity much as they would medicine. In Wholesome Wave’s Fruit and Vegetable Prescription Program (FVRx), for example, health care providers partner with local farmers’ markets to support increased consumption of fresh fruits and vegetables. Children enrolled in the program meet monthly with a primary care provider and nutritionist and receive a prescription—valued at \$1 per family member per day (e.g., \$28 per week for a family of four)—that can be redeemed for locally grown produce at participating farmers markets. The program targets low-income families; 82 percent of participants qualify for Medicaid or other public insurance. A 2012 evaluation showed decreases in more than one-third of participating children’s BMI and significant increases in household food security.⁵⁰

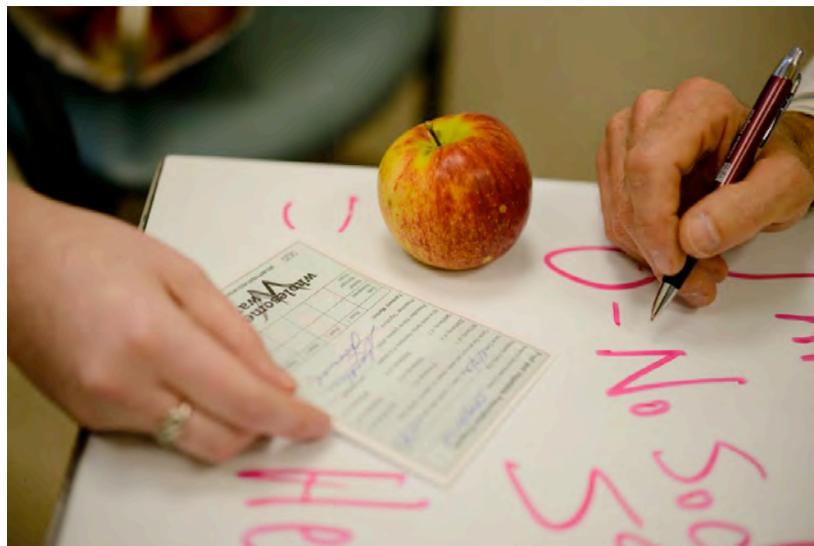


Photo credit Glenn Charles

A similar concept has been developed to promote greater use of local parks and recreation facilities as an antidote to inactivity and obesity, especially among low-income youth and other under-served populations. In 2013, the National Recreation and Park Association (NRPA), with funding from the National Recreation Foundation, made grants to five communities that have launched so-called “park prescription” programs. Recipients of the NRPA grants included Baltimore’s Docs in the Park program; the LiveWell coalition’s New Impact program in Greenville, South Carolina; Portland, Oregon’s Rx Play initiative; San Diego County’s Rec Rx program; and Washington D.C.’s Park Rx program.⁵¹ In the D.C. Park Prescription program, for example, volunteers rated more than 350 green spaces in the District of Columbia and created one-page summaries with information on hours, safety, available activities, and free programming. Based on a patient’s zip code, a physician who wishes to prescribe increased physical activity can print out the appropriate one-page map for that patient to encourage and facilitate his or her use of a local park.

The notion that physical activity should be considered an essential part of the physician's toolbox for treating many chronic and preventable diseases is also behind Exercise is Medicine,⁵² a non-profit initiative launched by the ACSM and AMA in 2008. The goal of Exercise is Medicine is to ensure that physical activity is consistently integrated with clinical care. The program calls on health care providers to assess and review each patient's patterns of physical activity at every visit and provides clinicians with simple tools and informational resources—including referrals to community-based services—to help patients increase their physical activity. Kaiser Permanente was one of the first and largest health care organizations to add the Exercise Vital Sign to patients' electronic health records. At every medical visit, patients estimate the number of minutes they engage in physical activity each week and this number is recorded along with other vital signs such as blood pressure and heart rate. The goal is to prompt increased focus on this metric by both the provider and the patient; if a clinician notices that a patient is not engaging in enough activity, then he or she can provide appropriate advice and referrals for how to increase activity levels.⁵³ As part of this initiative ACSM has also developed a formal Exercise is Medicine credential to recognize individuals who have been professionally trained to safely and effectively prescribe exercise to patients and who have the skills to support sustained behavior change. The intent is to facilitate a closer working relationship between exercise and medical professionals by helping medical professionals more easily identify physical activity experts to whom they can refer patients.

Fit2Play™ and the University of Miami Miller School of Medicine

Another recent community-based initiative to promote nutrition and physical activity among children was launched as a collaboration of the Miami-Dade County Parks, Recreation and Open Spaces Department in Florida and the University of Miami Miller School of Medicine. Called Fit2Play,[™] this evidence-based fitness and wellness program for kids ages 6–14 incorporates physical activity and interactive learning as a way to promote healthy lifestyles and good citizenship. Faculty and staff at the University of Miami Miller School of Medicine train Miami-Dade County Parks, Recreation and Open Spaces staff to deliver nutrition and physical activity education through the American Heart Association and Alliance for A Healthier Generation's empowerME4Life curriculum and the Sports, Play and Active Recreation for Kids (SPARK) curriculum. More than 1,600 students participate in up to four hours of supervised programming each day after school at almost 40 local parks. Researchers at the Miller School of Medicine's Department of Pediatrics evaluate the Fit2Play program, with some medical and public health students assisting as part of their capstone research projects. Early results show improvements in health metrics, such as significant reductions in hypertension and body mass index, and increases in knowledge of physical fitness, nutrition, and health. The program is considering ways to strengthen the linkage to the clinic, including a parks "prescription."^{54,55}

Changing Incentives Through Reimbursement Policies

Growing interest in these and other team- and community-based initiatives around the country suggests that health care providers should have a broader array of options and resources to offer their patients in the years ahead. But as noted repeatedly throughout this white paper, sustaining these kinds of programs and bringing about a prevention- and wellness-focused reorientation of the U.S. health care system more broadly will require changing incentives. A first priority is reforming the reimbursement practices of major health insurance providers. In a promising development, growing numbers of these providers have begun reimbursing for preventive care services including nutrition and physical activity counseling. In 2009, for example, the Alliance launched the Healthier Generation Benefit as a collaborative effort among insurers, employers, and medical associations to offer comprehensive health benefits to children and families for the prevention, assessment, and treatment of obesity in children (ages 3-18). Companies agree to provide insurance coverage for at least four follow-up visits with their primary care provider and at least four visits with a registered dietitian per year for children in the program. As of 2013, 22 insurer-, employer-, and provider-association signatories were participating in Healthier Generation Benefit, which reached more than 2.8 million children. However utilization is still low relative to the need.⁵⁶ More broadly, health insurers—including the federal Medicare program—are increasingly offering coverage for preventive care services, such as annual wellness checks and screening services. In order to increase appropriate utilization of these services, it will be critical to increase awareness about their availability among providers and families.

Promoting Research and Information-Sharing on the Role of Nutrition and Exercise in Achieving and Maintaining Good Health

Finally, significant progress could be made in the area of research and information-sharing—in many cases with relatively modest levels of investment. For example, further research is needed, not only to better understand the complex linkages among diet, exercise, weight, and chronic disease, but to demonstrate the effectiveness of different approaches to treatment and intervention.⁵⁷ Given that they see many of their patients infrequently and for relatively short periods of time, physicians and nurses must be able to impart the most up-to-date, accurate, and useful information available while targeting and delivering their messages in ways that are persuasive and likely to produce changes in patient behavior.

With a growing number of prevention-oriented programs and initiatives to study, targeted research could help elucidate which approaches and incentives work best and which provide a foundation for developing the metrics needed to measure outcomes, compare different programs, and create a common basis for reimbursement. At the same time, efforts to collect and disseminate information, including information on effective treatment strategies as well as contact information for community-based resources and organizations, would be

extremely helpful. Multiple stakeholders should be involved in these efforts—insurance providers, for example, can provide important insights into what kinds of services and resources their customers are most interested in using. Similarly, different organizations, including insurance providers, community organizations, and medical schools could work together to develop an Internet-based information clearinghouse that health care providers and patients could easily access in a clinical setting or at home. This effort could draw from a number of existing on-line resources and clearinghouses. Examples include the Guide to Community Preventive Services, a collection of evidence-based findings and recommendations developed by the Community Preventive Services Task Force. The Task Force is an independent group of public health and prevention experts supported by the CDC that is working to enhance understanding of certain kinds of preventive services, including clinical- and community-based approaches.⁵⁸

VI. Recommendations

Poor nutrition and lack of physical activity are at the core of the nation's most urgent public health challenge: high rates of obesity together with rising rates of associated chronic diseases, such as diabetes and heart disease. With obesity-related diseases emerging as a major driver of rapidly growing health care costs, helping Americans to make healthier diet and lifestyle choices has become increasingly critical—not only as a way to improve quality of life for millions of people, but to counter a serious threat to our nation's long-term fiscal integrity, security, and economic vitality. Health care professionals, along with individuals, families, communities, and large institutions, are on the front lines of this battle. As trusted sources of information, they are uniquely positioned to provide the education and motivation needed to prompt change among individuals, families, and ultimately, society as a whole. Moreover, other major stakeholders in the fight against obesity and chronic disease—from businesses and community organizations to government entities and large institutions—look to the medical community for guidance and expertise. If medical professionals believe that nutrition and physical activity are important, non-medical actors will give these issues priority as well.

As future generations of health professionals are trained, the education they receive must be aligned with evidence-based medicine and with the most pressing health needs of the population. Despite growing concern about the high incidence of obesity and obesity-related diseases in this country, however, most medical education programs in the United States continue to fall well short of providing the 25 to 30 hours of nutrition and physical activity education recommended as a minimum by the NAS in 1985. This shortfall is compounded by the fact that there is currently no universally accepted standard for core nutrition and physical activity content across the training system.

In the months ahead, the Alliance, ACSM, and BPC will seek new opportunities to build on the ideas and enthusiasm generated by the October 17, 2013, forum to address the need for improved nutrition and physical activity training for health care professionals. Among other activities, we intend to focus on the issue of reimbursement for preventive care, including financial incentives for effective care with respect to nutrition and physical activity risk factors in particular. A key challenge is to develop evidence-based metrics that would allow health insurance providers to reimburse for services related to nutrition and physical activity. Other related initiatives that will continue through 2014 and beyond include the USC Greenville and Harvard School of Medicine's Lifestyle Medicine Think Tank, and the Institute of Medicine's Roundtable on Obesity Solutions.

Although recent statistics show some evidence of progress in curbing the incidence of obesity among young children (ages two to five),⁵⁹ continued high rates of obesity and

chronic disease in the United States present such an enormous and complex problem that population-wide progress requires engagement from multiple sectors, at the highest levels of leadership. We therefore call on stakeholders who are in a position to influence medical education and training to take action in several areas that would significantly improve providers' ability to deliver effective care for obesity and obesity-related chronic diseases. We also call on the funding community to prioritize this issue in their funding determinations. In some instances, BPC, Alliance, and ACSM would be the appropriate entities to carry out this work, but in other instances different organizations, as noted below, would be appropriate leads. The following recommendations outline specific, implementable action items where substantial progress is possible in the next year.

1. Develop and implement a standard nutrition and physical activity curriculum.

Diverse stakeholders, including medical school deans, licensing and credentialing bodies, physicians, nutrition researchers, physical activity professionals, and others should work together to create a standard nutrition and physical activity curriculum that can be integrated into the existing curriculum of medical schools with minimal disruption, using a phased-in approach. Appropriately updated to address 21st-century needs, new evidence, new educational models, and an existing template—such as the curriculum developed by the Nutrition Academic Awards or the NIM curriculum—could serve as a starting point. Once national standards exist, students should also work with administrators and teachers to adapt these standards to their own school environment. Ultimately, such a curriculum should also be tailored for educational programs in related health professional fields, such as nursing, pharmacy, and dental schools, as well as schools (or programs) for others.

2. Include more nutrition and physical activity content in licensing and certification exams.

Organizations responsible for developing and disseminating licensing and certification examinations, including the USMLE and NBME, should incorporate more content on nutrition and physical activity to reflect and complement the new standard curriculum proposed above. Test questions are important tools for driving systemic change. A greater emphasis on these topic areas by licensing and certification boards will support the adoption and integration of curriculum changes and related standards.

3. Increase nutrition and physical activity requirements for residency and continuing education programs.

Beyond medical school curricula and exams, residency and continuing education provide additional opportunities to incorporate training in nutrition and physical activity. Boards and accrediting bodies should add those topics to their residency and Maintenance of Certification programs.

4. Expand board-accredited advanced training programs to create a cadre of experts in nutrition and physical activity who can teach health professionals.

For example, to help meet the demands of new curriculum standards, the ABMS, working with the American Board of Internal Medicine, the American Board of Pediatrics, and the American Board of Family Medicine, could help create subspecialty fellowship programs in nutrition and physical activity. These organizations can also promote training through existing subspecialties. As noted in the foregoing discussion, existing fellowship training programs and board certifications lack ABMS accreditation. Training a new cadre of experts is critical to transmitting the knowledge, attitudes, and skills that will be needed by future generations of health professionals. Boards should also add requirements that focus on nutrition and physical activity to their Maintenance of Certification programs.

5. Provide federal and state support for reforms in medical education and health care delivery that can help providers better meet patient needs with respect to nutrition, physical activity, and other lifestyle factors.

Legislators at the federal and state levels should identify concrete opportunities to support and incentivize providers to improve health and lower costs through more effective educational strategies and other interventions aimed at bringing about behavior changes. The recently introduced, bipartisan Expanding Nutrition's Role in Curricula and Healthcare (ENRICH) Act (H.R. 4427), which would provide federal grants to support the development and implementation of new curricula at medical schools, is one example. While the authors of this white paper do not necessarily endorse any one specific legislative approach, other options could include changes in CME or licensing requirements, state grants, or others.

6. Recognize and reward innovation to drive continued funding and administrative support for reform efforts that are already underway.

This white paper has highlighted just some of the initiatives and programs being undertaken by U.S. medical schools to address changing health care needs with respect to the treatment of obesity and related chronic diseases. Innovation and leadership in nutrition and physical activity education should be recognized—for example, through an awards program—in ways that will help galvanize other schools and organizations to take action on a broader scale.

7. Provide reimbursement for health services that target lifestyle factors such as nutrition and exercise.

As long as the health care marketplace undervalues preventive care, health care professionals will lack financial support to address these issues with their patients and medical schools will have less incentive to train their students accordingly. Payers should expand reimbursement for both clinic- and community-based providers of evidence-based preventive services addressing nutrition and physical activity.

8. Extend improvements in nutrition and physical activity education to other health professional schools.

Specifically, other health professional schools (e.g., nursing, dental, pharmacy, etc.) and their associations should commit to developing and presenting curriculum changes to relevant boards and curriculum committees for consideration, modification, and ultimately adoption.

9. Increase and broaden awareness of the need for changes in medical education.

Beyond other health professional schools, stakeholders should engage a broad swath of organizations with an interest or expertise in nutrition and physical activity training to help raise awareness of the importance of these issues in medical education and to advocate for the policy changes recommended here. Organizations could include disease advocacy associations, community organizations, philanthropies, and others.

In addition to working together and with other stakeholders to advance the above recommendations, the authors of this white paper—the Alliance, ACSM, and BPC—will continue their collaboration to support the ongoing dissemination of promising practices in

the area of nutrition and physical activity training in medical education. This collaboration will include efforts to increase awareness of current innovators and innovations, such as those represented at the October 2013 workshop, as well as efforts to collect and synthesize information about strategies and programs that have worked (or are working) in different settings. The Alliance, ACSM and BPC will continue to engage with representatives from key stakeholder groups to make progress toward developing useful metrics for measuring change. Such metrics are critical to persuading decision-makers of the value of nutrition and physical activity training and to win support from multiple parties for the actions needed to bring about systemic change.

Endnotes

¹ Information about the forum, including video presentations, may be accessed at:

<http://bipartisanpolicy.org/events/2013/10/teaching-nutrition-and-physical-activity-medical-school-training-doctors-prevention>.

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