Culinary Medicine Basics and Applications in Medical Education in the United States

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Culinary medicine is an evidence-based field of medicine that combines nutrition science and culinary arts to create food that is delicious, promotes wellness, and prevents and treats disease. The field was created to address the missed opportunities presented by nutrition education at all levels of medical education and in medical practice. Current nutrition curricula are limited in time, scope, and content applicable to direct patient care. An additional barrier to adequate and effective nutrition education in medical school is that the majority of instruction occurs in the preclinical years, disconnected from active patient care. Moreover, the content is primarily comprised on topics, such as biochemistry, molecular biology, and micronutrient deficiencies, which are of little use when conducting dietary counseling with patients.

It is difficult to parse the limited nutrition offerings in most medical schools with data identifying diet as the single most significant risk factor for morbidity and mortality in the U.S. [1]. There has never been a more important time to equip physicians with the abilities to effectively evaluate, prevent, and treat food-related disease. Skills required to do this include taking a dietary history, assessing food access and cultural aspects of diet, motivational interviewing around making healthy dietary changes, and counseling on how to cook and eat healthy, delicious food that is accessible in terms of budget, time, skills, and other resources.

Culinary medicine is a hands-on, practical approach to nutrition education that brings students into the kitchen to learn how to prepare delicious, healthy food while simultaneously learning key nutrition lessons. It moves nutrition education away from a focus on nutrients towards a focus on food. This, in turn, aligns the healthcare professional’s approach to dietary counseling with the way that patients understand it best.
Table 1. Considerations in planning a culinary medicine course for healthcare professionals or trainees

**Teachers and Students**

– Who are the students? What level of medical training do they have?
– Who will teach the course (e.g., physician-chef, chef, dietitian, nutrition faculty, students, etc.)?

**Time and Duration**

– How much time is reasonable to expect from participants and what time(s) would be most convenient for them?
– What type(s) of class sessions will be held (e.g., demonstration, hands-on, online, lecture, direct patient care, etc.)?
– How long will class sessions be? (Hands-on cooking sessions are generally 1-1/2 hours or longer.)
– How many class sessions will be held? If more than one session, will they be condensed into a limited timeframe or organized into a longitudinal course?

**Curriculum and Content**

– Will a preexisting curriculum be used as is, modified for use, or will a new curriculum be created?
– How will the culinary medicine course be connected with the broader medical curriculum, if applicable?
– What dietary philosophy will be used? What are the nutrition science underpinnings of this?
– What supportive or preparatory materials will accompany the hands-on sessions? Will they be required before, after, or during the session?

**Course Credit**

– Will the class be for credit? What type of credit?
– What is the timeline and process for making credit available (e.g., listing in the course catalog or getting approval to offer CME, etc.)?

**Cost**

– Costs that may need to be planned to include space rental, groceries, equipment/supplies, instructor/assistant salary, cleaning staff, printing/administrative, and curriculum (if not creating your own).
– How will costs be covered (e.g., institutional support, grants, donations, fundraiser, charge a class fee, etc.)?

**Rules, Regulations, and Safety**

– Who will learn, explain, and enforce kitchen sanitation and safety rules?
– What health and fire codes must be adhered to and how does this impact what can be cooked?
– When will the course leader obtain Servsafe (or similar) certification to ensure sanitary cooking practices throughout the course?
– What is your plan if anyone gets hurt? Do you have a waiver of liability and emergency contact information from participants?
– Do you have a basic first aid kit for minor cuts and burns?
– Will class participants sign waivers so photos and videos from the course can be posted publicly for promotional purposes?
The first nutrition elective with a cooking focus held in a U.S. medical school was taught in 2003 at the State University of New York-Upstate campus [2]. However, culinary medicine courses started to become more widely available in the past five years, due largely to the opening of the Goldring Center for Culinary Medicine in 2013 at Tulane University School of Medicine. Tulane's culinary medicine curriculum is the most widely used in medical education; to date, the program has been licensed to 39 medical schools across the U.S. [3, 4]. A separate, novel curriculum was developed in 2016 by the author and colleagues.
at Stanford University School of Medicine [5]. The course is taught as a quarter-long elective by physician-chefs using a blended classroom approach. Evaluation of knowledge, attitudes, and behaviors around cooking, eating, and patient dietary counseling have been compared between students and waitlisted controls. Preliminary data analysis showed significant improvements in numerous areas including basic cooking techniques, health eating behaviors, and confidence in planning balanced meals [5].

As the number of culinary medicine courses grows among medical education programs, so do the number of approaches to teaching the topic. Courses range in number of classes, placement in the larger medical school curriculum, and type of instructor. No single dietary philosophy is employed, and classes take place in settings ranging from pop-up conference room kitchens to dedicated teaching kitchens. This flexibility affords nearly any medical practice or educational setting the ability to provide some amount of culinary medicine content. Other important considerations when planning a culinary medicine course are shown in the Table 1. Beyond medical school, residency programs – primarily those focused on prevention and lifestyle medicine – are also beginning to add culinary medicine classes to their curricula. Culinary medicine continuing medical education opportunities have been available since the annual Healthy Kitchens, Healthy Lives conference began in 2007 in California. Additionally, some large healthcare systems offer physicians on-site culinary medicine courses, such as Kaiser Permanente’s Thrive Kitchen [3]. Finally, those seeking in-depth training can become certified in culinary medicine through programs like the Certified Culinary Medicine Specialist from Tulane or the Plant-based Nutrition Certificate from Cornell.

Culinary medicine makes nutrition education practical and directly applicable to the lives of both practitioners and patients. For these reasons, it has led to greater engagement in nutrition education by trainees and practicing clinicians alike. Given the increasing prevalence of diet-related diseases, demand for culinary medicine courses will likely continue to grow.

References
