

General Medicine, University of Michigan Health System

**Mary Finta** , MD

Chief Medicine Resident, Internal Medicine Residency Program, University of Michigan Health System

**Kayla Secrest** , MD

PGY-3, Internal Medicine Residency Program, University of Michigan Health System

**Jocelyn Wiggins**, MA, BM, BCh, MRCP

Clinical Professor, Associate Division Chief, Geriatric and Palliative Medicine, Medical Director Geriatrics Center Clinics and Turner Geriatric Clinic, University of Michigan Health System

The authors would like to thank the residents and faculty who participated in this pilot program and who offered their feedback to improve future iterations.

Corresponding author: Jennifer Reilly Lukela, MD, University of Michigan Health System, [jlreilly@med.umich.edu](mailto:jlreilly@med.umich.edu), Twitter @UMIMEqualMed

NEW IDEAS

# Cooking Up Health: Academic-Community Collaboration to Teach Nutrition Education

## Setting and Problem

Physicians are at the frontline of advising patients on nutrition; however, only 29% of medical schools teach the recommended 25 hours of nutrition, and fewer than 14% of practicing physicians feel adequately trained.<sup>1,2</sup> Moreover, limited nutrition education in medical school may focus on vitamin deficiencies or treatment for specific disease states rather than general wellness.<sup>1</sup> These outcomes negatively impact not only patients, but also the well-being of physician trainees themselves.

## Intervention

Our project leverages existing community expertise by collaborating with a nonprofit, Common Threads, to deliver a hands-on nutrition curriculum to family medicine residents. Through a train-the-trainer model, resident physicians later apply what they learned to teach nutrition education to local middle school students. The purposes of this project were to (1) assess the feasibility of conducting a culinary medicine pilot within the context of an existing residency curriculum; and (2) determine the impact of a culinary medicine curriculum combining academic, culinary, and community components to achieve nutrition competencies.

Twenty-three residents at the Northwestern McGaw Family Medicine Residency at Lake Forest were assigned asynchronous learning on the topics delineated in the TABLE, followed by 3 weekly synchronous virtual hourlong culinary training sessions led by Common Threads professional chefs. Topics were selected for their relevance to primary care.

These sessions were followed by a 30-minute debrief and discussion of prework, led by residency faculty. Gift cards were provided to purchase groceries for each recipe. Applying knowledge learned in weeks 1 to 3, residents led three 45-minute classes during weeks 4 through 6 at a local middle school where 80% of students qualify for free or reduced-price lunch. By connecting trainees with local schools, we aim to increase community engagement and positively impact our surrounding community, all while fostering self-care in health professionals around nutrition.

## Outcomes to Date

Residents completed validated assessments and follow-up surveys, including the PrimeScreen self-reported dietary intake and others. Following the course, residents showed significant increases in their confidence in nutrition counseling ( $t=3.8$ ,  $P=.004$ ), confidence in cooking skills ( $t=2.8$ ,  $P=.018$ ), and ability to prepare plant-based meals ( $t=2.9$ ,  $P=.016$ ). There was also a significant increase in resident knowledge of plant-based diets ( $t=0.5$ ,  $P=.002$ ) and substituting animal-based proteins with plant-based proteins ( $t=4.3$ ,  $P=.002$ ). Eighty-one percent (13 of 16) reported a positive or neutral impact on their knowledge due to the virtual nature of the cooking classes.

This pilot demonstrates the feasibility and positive impact of a residency and nonprofit collaboration to launch a culinary medicine curriculum for both resident and middle school learners. This model could be adapted for residents of any specialty with downstream impact on factors related to obesity and

DOI: <http://dx.doi.org/10.4300/JGME-D-22-00774.1>

**TABLE**  
Curriculum Topics and Activities

Curriculum	Timing	Topic	Plant-Based Recipe	Pework Assignments and Activities
Resident curriculum	Week 1	Diabetes, sugar, and carbohydrates	Sweet potato and black bean tacos	<ul style="list-style-type: none"> <li>• Purchase groceries</li> <li>• Common Threads video module, cooking demonstration</li> <li>• Reflection exercises (advertising and diet decisions)</li> </ul>
	Week 2	Satiety, fiber, plant-based proteins, and gut health	Red lentil curry	<ul style="list-style-type: none"> <li>• Purchase groceries</li> <li>• Common Threads video module, cooking demonstration</li> <li>• Reflection exercises (adherence to diets)</li> </ul>
	Week 3	Inflammation	Vegetarian pad thai	<ul style="list-style-type: none"> <li>• Purchase groceries</li> <li>• Common Threads video module, cooking demonstration</li> <li>• Reflection exercises (trends in diet and socioeconomic status)</li> </ul>
Middle school curriculum	Week 4	USDA MyPlate	Trail mix	<ul style="list-style-type: none"> <li>• Mapping a plate activity</li> </ul>
	Week 5	Nutrition labels	Fruit and cheese kabobs	<ul style="list-style-type: none"> <li>• MyPlate checklist activity: find your healthy eating style</li> </ul>
	Week 6	Fruits and vegetables	Vegetable or fruit 2 ways	<ul style="list-style-type: none"> <li>• Paint Your Plate with Color card game</li> </ul>

Abbreviation: USDA, United States Department of Agriculture.

nutrition in patient care. Not only does each trainee interact with children during the course, but throughout their training and career each will touch the lives of thousands of patients. As a secondary benefit, this curriculum increases middle school student exposure to STEM careers through their interaction with resident physicians. This type of collaboration can empower future health care professionals and patients as agents of change for healthier schools and communities. In conclusion, this framework may offer a new model to deliver nutrition education to residents and fellows that can be replicated by many specialties and types of residency programs.

## References

1. Adams KM, Butsch WS, Kohlmeier M. The state of nutrition education at US medical schools. *J Biomed Educ.* 2015;4:1-7. doi:10.1155/2015/357627
2. Vetter ML, Herring SJ, Sood M, Shah NR, Kalet AL. What do resident physicians know about nutrition? An evaluation of attitudes, self-perceived proficiency and knowledge. *J Am Coll Nutr.* 2008;27(2):287-298. doi:10.1080/07315724.2008.10719702

### Anna B. Shannahan<sup>Ⓞ</sup>, MD

Assistant Professor, Family and Community Medicine, Northwestern University Feinberg School of Medicine

### Melinda R. Ring<sup>Ⓞ</sup>, MD, FACP, ABOIM

Clinical Associate Professor, Medicine and Medical

Social Sciences, Northwestern University Feinberg School of Medicine

### Jacquelyn Stephens<sup>Ⓞ</sup>, PhD

Postdoctoral Research Fellow, Department of Medical Social Sciences, Northwestern University Feinberg School of Medicine

### Katherine M. Wright<sup>Ⓞ</sup>, PhD, MPH

Director of Research, Department of Family & Community Medicine, Northwestern University Feinberg School of Medicine

### Deborah S. Clements<sup>Ⓞ</sup>, MD, FAAFP

Chair, Department of Family & Community Medicine, and Nancy and Warren Furey Professor of Community Medicine, Northwestern University Feinberg School of Medicine

### Veronika Grote<sup>Ⓞ</sup>, MHI

Program Coordinator, Northwestern University Feinberg School of Medicine

The authors would like to acknowledge Cassandra Hinrichsen, Lindsey Fritz, and Stephanie Folkens of Common Threads, as well as Jennifer Martinez of Northwestern University Feinberg School of Medicine for their contributions to the development of this manuscript.

Corresponding author: Anna B. Shannahan, MD, Northwestern University Feinberg School of Medicine, annabnova@gmail.com, Twitter @AnnaBWellnessMD