

The First 1000 Days—A Missed Opportunity for Pediatricians

Kofi Essel, MD, MPH

ABOUT THE AUTHOR

Kofi Essel is with the Children's National Hospital, George Washington University School of Medicine & Health Sciences, Washington, DC.

I remember sitting in front of my four-month-old patient and their family during my pediatric residency and being asked an important question: “Doctor, we want to make sure our child grows up healthy. How do we incorporate solid foods for our baby?” I did not know the answer. I asked for advice from my supervisors and was met with an uncomfortable silence. I realized at that moment that I had failed my patient, and, more importantly, the medical education system had failed to prepare pediatricians like me with the skills necessary to initiate meaningful infant feeding and nutrition guidance for young families during those first 1000 days (i.e., conception to two years). It is a missed opportunity when pediatricians do not receive the necessary education to inform and support families as they set the stage during the first 1000 days for improved nutritional status and healthy eating behaviors over the entire lifespan.¹ It is time for pediatricians to become a stronger voice in advocating changes to policy, curriculum, and cross-collaborative approaches that will advance healthy taste preferences and the dietary intake of infants and toddlers, no matter their culture or income.

MEDICAL SCHOOLS' NUTRITION EDUCATION

The lack of focus on nutrition-related medical education in the United States does a disservice to our children's health. I discovered that the gap in knowledge of child nutrition and infant feeding was common among my colleagues in medical schools and residencies across the country. Graduating medical students report having insufficient nutrition knowledge to support the nutritional needs of patients.² In the 1980s, a groundbreaking seminal report recommended a minimum of 25 hours of nutrition education in medical student preclinical years.³ In 1997, the National Institutes of Health established the Nutrition Academic Award program, ultimately creating a set of comprehensive objectives that continue to guide many curricula around the country.^{4,5}

By 2015, 71% of medical schools provided less than the recommended 25 hours, and 36% provided less than half of those hours.⁶ As physicians, we recognize that nutrition-related chronic diseases play a key role in affecting the psychological, economic, and physical health of our families and, ultimately, our nation. Poor diets are a leading contributor to worsening morbidity and

mortality and are linked to \$50 billion in US health care costs.⁷ We also recognize that most of our evidence-based national and professional recommendations addressing nutrition-related chronic diseases focus on changes in lifestyle and, more importantly, food and nutrition as fundamental first-line interventions. However, it remains true to this day that medical students across the United States learn the intricacies of biochemistry, metabolism, and macronutrients but lack pragmatic translational science training to counsel patients about food and the impact it has on their health.⁶

Advocating policy changes to enhance nutrition education is necessary for motivating institutions and accreditation bodies to assess and improve training for medical students, residents, and fellows. Most recently, a bipartisan resolution authored by Congressman James McGovern and Congressman Michael Burgess was passed by the House on May 17, 2022. The resolution calls for “substantive training in nutrition and diet sufficient for physicians and health professionals to meaningfully incorporate nutrition interventions and dietary referrals into medical practice” (<https://bit.ly/3IVyVsZ>). Policy changes, such as the McGovern resolution, are a welcome step toward driving systemic and institutional changes that will ultimately influence the most marginalized patients and families.

EQUIPPING 21ST CENTURY PHYSICIANS

Modern teaching strategies often use experiential learning models. This activity-oriented technique may include small group, case-based, and problem-based learning modules. Institutions may

consider these engaging approaches to enhance trainee education. At the Culinary Medicine Program of the George Washington University School of Medicine & Health Sciences, we are using the Culinary Medicine Specialist Board's Health Meets Food curriculum to prepare 21st-century physicians to enter the workforce ready to help families meet their nutritional needs.⁸ The student classroom is their kitchen, and their lessons revolve around purchasing, chopping, cooking, and counseling to engage families with cultural humility.⁹

In addition, we are beginning to train faculty as well as those in residency and fellowship programs, allowing us the opportunity to tailor our education to specific specialties. A focus on the first 1000 days of life in culinary medicine offers many entry points and includes strategies to enhance complementary feeding, allergy prevention, and even working with families to identify feeding disorders and implement techniques to expand taste preferences. These policy, curricular, and clinical levers are critical to addressing the gaps in nutrition education, yet by themselves are incomplete. Medical nutrition must be taught in the context of social determinants of health, especially food (i.e., food quantity) and nutrition (i.e., food quality and equity) security.

According to the US Department of Agriculture, one in seven households with children experiences food insecurity. This has tangible effects on the purchasing power, food selection, and overall health outcomes of families and children. To effectively engage families with children in the first 1000 days of children's lives, the 21st-century pediatrician must gain effective counseling strategies that recognize barriers to healthy eating, such as food insecurity, by screening to identify its role and

connecting families with meaningful and sustainable resources.¹⁰

NUTRITION DESERVES A CHANCE

Nutrition deserves a chance throughout the life course of families and in every aspect of medicine. The data are clear that the first 1000 days of a child's life are too important to be treated as "forgotten years." These early years provide a unique window of opportunity to cultivate healthy long-term taste preferences and dietary patterns that affect future disease risk.¹¹ For example, it is clear that early and frequent exposure to vegetables during infancy can play a role in the long-term receptivity of their unique flavors.^{12,13} Findings like these highlight the opportunities that exist at an early age. Informative texts such as the American Academy of Pediatrics' *Pediatric Nutrition* handbook must be incorporated as core material in pediatric residency training programs.¹⁴

Pediatricians will not replace dietitians, but they must become more informed and provide tailored nutrition guidance. Infant feeding and nutrition are multidisciplinary, and practicing pediatricians can enhance clinical care by tapping into interprofessional and cross-collaborative approaches, such as joint trainings that enhance meaningful referrals to necessary clinical and community partners.

PEDIATRICIANS MUST ADVOCATE CHANGE

One pediatrician champion working in a clinic is not enough to create a paradigm shift. This shift requires a collective effort that activates pediatricians to work in cross-sector collaboratives to

influence change alongside industry, researchers, and even early childhood educators. It requires pediatricians to use their voices to support local policy that shifts the food landscape, supports national policy that enhances nutrition security for our families, and transforms medical education for current and future providers.

I now see my work alongside community partners, patients, and families as part of a collective effort in the first 1000 days of life. Pediatricians can become a trusted source of information while appreciating the rich cultural diversity of feeding practices in our settings. Our families hear and respect our voice, and it is time to use that voice for a coordinated, impactful, grounded, and evidenced-based message as we work with families toward improved health. **AJPH**

CORRESPONDENCE

Correspondence should be sent to Kofi Essel, MD, MPH, Children's National Hospital, 111 Michigan Ave, NW, Washington, DC 20010 (e-mail: Kessel@childrensnational.org). Reprints can be ordered at <http://www.ajph.org> by clicking the "Reprints" link.

PUBLICATION INFORMATION

Full Citation: Essel K. The first 1000 days—a missed opportunity for pediatricians. *Am J Public Health*. Published online ahead of print September 19, 2022:e1–e3.

Acceptance Date: June 1, 2022.

DOI: <https://doi.org/10.2105/AJPH.2022.306999>

ACKNOWLEDGMENTS

The author thanks the Partnership for a Healthier America and research colleague and pediatric resident mentee Anthony McClenny for their helpful comments on earlier versions of this editorial.

CONFLICTS OF INTEREST

The author has no conflicts of interest to declare.

REFERENCES

1. Clayton HB, Li R, Perrine CG, Scanlon KS. Prevalence and reasons for introducing infants early to solid foods: variations by milk feeding type.

- Pediatrics*. 2013;131(4):e1108–e1114. <https://doi.org/10.1542/peds.2012-2265>
2. Sierpina VS, Welch K, Devries S, et al. What competencies should medical students attain in nutritional medicine? *Explore (NY)*. 2016;12(2):146–147. <https://doi.org/10.1016/j.explore.2015.12.012>
 3. US National Research Council Committee on Nutrition in Medical Education. *Nutrition Education in U.S. Medical Schools*. Washington, DC: National Academies Press; 1985.
 4. Van Horn L. The Nutrition Academic Award: brief history, overview, and legacy. *Am J Clin Nutr*. 2006;83(4):936S–940S. <https://doi.org/10.1093/ajcn/83.4.936S>
 5. Kushner RF, Van Horn L, Rock CL, et al. Nutrition education in medical school: a time of opportunity. *Am J Clin Nutr*. 2014;99(5 suppl):1167S–1173S. <https://doi.org/10.3945/ajcn.113.073510>
 6. Adams KM, Butsch WS, Kohlmeier M. The state of nutrition education at US medical schools. *J Biomed Educ*. 2015;2015:1–7. <https://doi.org/10.1155/2015/357627>
 7. Jardim TV, Mozaffarian D, Abrahams-Gessel S, et al. Cardiometabolic disease costs associated with suboptimal diet in the United States: a cost analysis based on a microsimulation model. *PLoS Med*. 2019;16(12):e1002981. <https://doi.org/10.1371/journal.pmed.1002981>
 8. Razavi AC, Monlezun DJ, Sapin A, et al. Multisite culinary medicine curriculum is associated with cardioprotective dietary patterns and lifestyle medicine competencies among medical trainees. *Am J Lifestyle Med*. 2020;14(2):225–233. <https://doi.org/10.1177/1559827619901104>. [Erratum in: *Am J Lifestyle Med*. 2020;14(2):234].
 9. Monlezun DJ, Urday P, Baranwal P, et al. Cooking up better doctors as teachers globally: a novel integrated nutrition and cooking class curriculum for pediatric residents to boost their competencies and attitudes in patient counseling. *J Med Person*. 2015;13(2):125–128. <https://doi.org/10.1007/s12682-014-0199-9>
 10. Ashbrook A, Essel K, Montez K, Bennett-Tejes D. Screen and intervene: a toolkit for pediatricians to address food insecurity. January 2021. Available at: https://frac.org/wp-content/uploads/FRAC_AAP_Toolkit_2021.pdf. Accessed July 22, 2022.
 11. Calkins K, Devaskar SU. Fetal origins of adult disease. *Curr Probl Pediatr Adolesc Health Care*. 2011;41(6):158–176. <https://doi.org/10.1016/j.cppeds.2011.01.001>
 12. Grimm KA, Kim SA, Yaroch AL, Scanlon KS. Fruit and vegetable intake during infancy and early childhood. *Pediatrics*. 2014;134(suppl 1):S63–S69. <https://doi.org/10.1542/peds.2014-0646K>
 13. Spill MK, Johns K, Callahan EH, et al. Repeated exposure to food and food acceptability in infants and toddlers: a systematic review. *Am J Clin Nutr*. 2019;109(suppl 7):978S–989S. <https://doi.org/10.1093/ajcn/nqy308>
 14. Kleinman RE, Greer FR, eds. *Pediatric Nutrition*. 8th ed. Itasca, IL: American Academy of Pediatrics; 2019.