



AMA Journal of Ethics®

August 2021, Volume 23, Number 8: E599-600

FROM THE EDITOR

Ethics in Economic Modeling in Health Care

Elina E. Pliakos

It has been estimated that approximately 25% of annual health care spending in the United States is unnecessary and wasteful.¹ This amounts to about \$760 billion to \$935 billion that could be saved annually and which, if saved, could help curb increasing US health care expenditures.¹ Various strategies have been proposed to decrease unnecessary spending, such as focusing on preventive care, eliminating unnecessary tests and procedures, and controlling costs of prescription drugs.² Health care system volatility and the ease with which vital resources are depleted in crises make it necessary to find reliable ways to allocate limited health care resources to maximize overall population health benefits while minimizing risk and harm. Resource allocation decisions about which interventions to invest in are fraught with complexity and uncertainty. Therefore, decision analytic models are often used to synthesize evidence from multiple sources and help inform decisions that must be made while navigating such complexity.³

Economic decision models aim to quantify clinical and economic benefits and harms associated with interventions to help policymakers and organizational leaders forecast prospective costs and manage likely trade-offs. In 1977, Weinstein and Stason suggested that resource allocation decisions should be made and **priorities set** based on indices of costs relative to anticipated benefits.⁴ Although computational abilities have improved since 1977 and advancements in medicine⁵ have led to development of guidelines about how to conduct health economic analyses,^{6,7} little attention has been given to ethical and social dimensions of using economic decision models and analyses in health care. This theme issue aims to fill this gap and considers how economic modeling can motivate good decision making about improving health systems performance, clinical practice, and patients' health care experiences.

Variations among standard care, evidence-based care, and value-based care can make it hard to decide which economic decision modeling guidance to follow when designing and implementing models and interpreting results generated by those models. Model structures, data sources, and assumptions, for example, influence the validity of what clinicians and organizational leaders can learn from them and are, therefore, ethically, socially, and culturally relevant. This theme issue explores this set of themes in detail and considers how transparency in modeling can help **motivate equity, cost-effectiveness**, good resource stewardship, and **value**. My hope is that this theme issue will illuminate key concepts at the intersection of economic modeling and health care

and stimulate discussion, so that we can offer all patients high-quality care in economically sustainable ways.

References

1. Shrank WH, Rogstad TL, Parekh N. Waste in the US health care system: estimated costs and potential for savings. *JAMA*. 2019;322(15):1501-1509.
2. Dalen JE. We can reduce US health care costs. *Am J Med*. 2010;123(3):193-194.
3. Siebert U. When should decision-analytic modeling be used in the economic evaluation of health care? *Eur J Health Econ*. 2003;4(3):143-150.
4. Weinstein MC, Stason WB. Foundations of cost-effectiveness analysis for health and medical practices. *N Engl J Med*. 1977;296(13):716-721.
5. Miller W, Rein D, O'Grady M, Yeung JE, Eichner J, McMahon M. A review and analysis of economic models of prevention benefits. Office of the Assistant Secretary for Planning and Evaluation, US Department of Health and Human Services. April 2013. Accessed July 20, 2021. https://aspe.hhs.gov/reports/review-analysis-economic-models-prevention-benefits-0#_Toc335834576
6. Neumann PJ, Ganiats TG, Russell LB, Sanders GD, Siegel JE. *Cost-Effectiveness in Health and Medicine*. Oxford University Press; 2017.
7. Husereau D, Drummond M, Petrou S, et al. Consolidated Health Economic Evaluation Reporting Standards (CHEERS) statement. *BMJ*. 2013;346:f1049.

Elina E. Pliakos is a fourth-year medical student at the Chicago Medical School at Rosalind Franklin University of Medicine and Science in North Chicago, Illinois. She is a graduate of Brown University, where she concentrated in biology and science and society. Her research interests lie in the field of health economics and outcomes research.

Citation

AMA J Ethics. 2021;23(8):E599-600.

DOI

10.1001/amajethics.2021.599.

Conflict of Interest Disclosure

The author(s) had no conflicts of interest to disclose.

The viewpoints expressed in this article are those of the author(s) and do not necessarily reflect the views and policies of the AMA.