Published in final edited form as:

JAMA. 2014 April 16; 311(15): 1567. doi:10.1001/jama.2014.2320.

Lag Time to Benefit for Preventive Therapies

R. Scott Braithwaite, MD, MS

Department of Population Health, NYU School of Medicine, New York, New York

To the Editor

In their Viewpoint, Dr Lee and colleagues¹ explained why clinicians and guideline panels should move beyond age as a crude marker for life expectancy and compare life expectancy with the earliest time when benefits exceed harms. They also noted that “unlike magnitude of benefit, measures of lag time to benefit are rarely reported.”¹

One method to estimate the time until benefits exceed harms for a patient undergoing a particular intervention that has short-term harms and long-term benefits is the “payoff time,” which can be approximated by dividing a patient’s probability of being harmed due to the intervention by the reduction in mortality attributable to the intervention.^{2,3} The payoff time can be viewed as a patient-centered version of “lag time to benefit” because it takes into account individual patient characteristics that may amplify or attenuate the procedure’s harms, benefits, or both. It has been implemented to inform decision making for a variety of conditions, including colorectal cancer screening,⁴ prophylactic carotid artery surgery,⁵ prophylactic aortic aneurysm surgery, and tight glucose control for patients with diabetes, at sites ranging from Veterans Affairs hospitals to safety-net hospitals to tertiary care facilities.

If appropriate decision support tools are incorporated into the next generation of electronic medical records, use of these approaches could be greatly facilitated, simultaneously reducing harm to patients and unnecessary health expenditures.

References

1. Lee SJ, Leipzig RM, Walter LC. Incorporating lag time to benefit into prevention decisions for older adults. JAMA. 2013; 310(24):2609–2610. [PubMed: 24322396]
2. Braithwaite RS. Can life expectancy and QALYs be improved by a framework for deciding whether to apply clinical guidelines to patients with severe comorbid disease? Med Decis Making. 2011; 31(4):582–595. [PubMed: 21310855]
3. Braithwaite RS, Fiellin D, Justice AC. The payoff time: a flexible framework to help clinicians decide when patients with comorbid disease are not likely to benefit from practice guidelines. Med Care. 2009; 47(6):610–617. [PubMed: 19433991]
4. Gross CP, Soulos PR, Ross JS, et al. Assessing the impact of screening colonoscopy on mortality in the medicare population. J Gen Intern Med. 2011; 26(12):1441–1449. [PubMed: 21842323]

Copyright 2014 American Medical Association. All rights reserved

Corresponding Author: R. Scott Braithwaite, MD, MS, NYU School of Medicine, 550 First Ave, New York, NY 10016 (scott.braithwaite@nyumc.org).

Conflict of Interest Disclosures: The author has completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none were reported.

5. Yuo TH, Roberts MS, Braithwaite RS, Chang CC, Kraemer KL. Applying the payoff time framework to carotid artery disease management. *Med Decis Making*. 2013; 33(8):1039–1050. [PubMed: 23784846]

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript