**Quantifying the Health and Economic Impact of the FDA Added Sugar Labeling Mandate in the US: A Cost-Effectiveness Analysis**

Yue Huang, MS1; Chris Kypridemos, MD, PhD2; Junxiu Liu, PhD1; Yujin Lee, PhD1; Brendan Collins, PhD2; Jonathan Pearson-Stuttard, BMBCh2,3; Piotr Bandosz, MD2,4, PhD; Simon Capewell, MD, DSc2; Laurie Whitsel, PhD5; Parke Wilde, PhD1; Dariush Mozaffarian, MD, DrPh1; Martin O’Flaherty\*, MD, PhD2; Renata Micha\*, RD, PhD1

1 Friedman School of Nutrition Science and Policy, Tufts University, Boston, Massachusetts, USA

2 Department of Public Health and Policy, University of Liverpool, Liverpool, UK  
3 School of Public Health, Imperial College London, London, UK   
4 Department of Preventive Medicine and Education, Medical University of Gdansk, Gdansk, Poland  
5 American Heart Association, Washington DC, USA

= equal contribution

Introduction: Excess added sugars, particularly from sugar-sweetened beverages (SSBs), are linked to cardiometabolic risk including obesity, type 2 diabetes (T2D) and CVD. Despite recent declines in SSB intake in the US, added sugar intake from SSBs and foods remains high and exceeds dietary recommendations. In May 2016, the US Food and Drug Administration (FDA) announced major revisions to the Nutrition Facts panel, including mandatory labeling of added sugar content, as a strategy to target added sugars from packaged foods and beverages. Yet, potential health effects remain unclear; and the FDA recently announced delays in implementation.

Aim: To estimate the cardiometabolic and economic effects of implementing FDA’s added sugar labeling policy over a 20-year horizon.

Methods: A validated microsimulation model, the US IMPACT Food Policy Model, was used to estimate the T2D and CVD cases averted and quality-adjusted life-years (QALYs) gained from the FDA policy for US adults age 30+ years. Model inputs included: nationally representative demographics and added sugar intakes from NHANES; policy effects on consumer intake from labeling intervention studies; obesity-mediated effects and direct independent effects of added sugars from SSBs and other foods, considered separately, on T2D and CVD from meta-analyses; policy costs including government administrative costs and industry compliance costs from federal government reports; national health statistics from the CDC; and healthcare costs including medical, productivity, and indirect costs from the AHA and American Diabetes Association. All costs were inflated to constant 2017 US dollars, discounted annually at 3%. We took a societal perspective and assumed a willingness to pay of $100,000 per QALY. Probabilistic sensitivity analysis accounted for model parameter uncertainty and population heterogeneity.

Results: Between 2018 and 2037, the FDA added sugar labeling policy could prevent approximately 580,000 (95% UI: 270,000–960,000) T2D cases and 210,000 (96,000–440,000) CVD cases, generating 600,000 (290,000–970,000) discounted QALYs. The policy would produce discounted net cost savings (health savings minus policy costs) of $47.3bn (21.7-78.6), including $25.6bn (11.9-43.1) from direct healthcare cost reductions. Most (>60%) savings were driven by costs related to T2D. Incorporating modelling and input uncertainty, the FDA added sugar label was estimated with >80% probability to be cost-effective by 2020 and cost-saving by 2022. Potential additional reductions from industry reformulations were not included and could further increase cost-savings.

Conclusions: Implementing the FDA added sugar labeling mandate would generate substantial health gains and cost savings for the US population, highlighting the need for timely implementation, monitoring and evaluation.