Cost-effectiveness of the FDA Sodium Reduction Targets for the Processed Food Industry: Are There Internal Incentives to Reformulate?

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Brendan Collins\*, Chris Kypridemos\*, Jonathan Pearson-Stuttard, Yue Huang, Piotr Bandosz, Parke Wilde, Rogan Kersh, Simon Capewell, Dariush Mozaffarian, Laurie Whitsel, Renata Micha#, Martin O’Flaherty#

Introduction: In 2016, the US Food & Drug Administration (FDA) proposed voluntary industry reductions in sodium, a major modifiable risk factor for CVD, for processed foods. Yet, reformulation could cost the food industry up to $16bn over 10 years, perhaps partly explaining why in 2017 Congress blocked the FDA from implementing these long-term voluntary targets.

Aim: To estimate the potential health gains and health-related cost savings for food industry employees from the FDA sodium targets. We defined the industry perspective as including all costs to the food industry and all health-related costs and health benefits to people working in the industry.

Methods: Utilizing the validated US IMPACT Food Policy dynamic microsimulation model, we estimated QALYs gained, costs, and incremental cost effectiveness ratios (incremental cumulative cost per QALY gained, with costs and QALYs discounted at 3%) from 2017-2036 in individuals working in the wider food system (food services and drinking places; food and beverage stores; food manufacturing) and the subset of food manufacturing. Data sources included NHANES, matched to demographic data for workers from the American Community Survey, and meta-analyses of sodium effects on blood pressure and blood pressure on CVD. Costs included industry reformulation costs, government costs, and health-related costs (healthcare, productivity, informal care) for individuals working in the industry. We modelled the FDA sodium targets under 2 scenarios: a) Short-term, 100% compliance of 2-year reformulation targets with no further progress. b) Long-term, 100% compliance of 10-year reformulation targets We tested our assumptions with probabilistic sensitivity analysis.

Results: Achieving the short-term, 2-year reformulation targets would generate net discounted industry costs of ~$7bn, health-related cost savings of ~$1.7bn (95% UI: $1.0bn, $2.9bn) and health gains of ~60,000 QALYs (50,000, 77,000) over 20 years, with an ICER of ~$85,000 ($12,000, $243,000) per QALY gained. Achieving the long-term sodium reduction targets could result in industry costs of ~$16bn, health-related cost savings of approximately $5.1bn ($3.4bn, $8.3bn), and industry health gain of ~180,000 (149,000, 209,000) QALYs, with an ICER of ~$60,000 ($2,000, $168,000). For the subset of food manufacturing, the long-term sodium reduction targets would lead to health-related savings of ~$1bn ($0.6bn, $1.6bn) and ~32,000 (27,000, 37,000) QALYs gained with an ICER of $489,000 ($160,000, $1,052,000).

Conclusions: Sustained sodium reduction is estimated to benefit the overall food industry with a healthier workforce and partly offset the reformulation costs for the subset of the processed food industry.