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Oral presentations

Food policy

OP1 COST-EFFECTIVENESS OF THE FDA SALT REDUCTION TARGETS FOR THE PROCESSED FOOD INDUSTRY: ARE THERE INTERNAL INCENTIVES TO REFORMULATE?

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Background In 2016, the US Food & Drug Administration (FDA) proposed voluntary industry reductions in salt, a major modifiable risk factor for CVD, for processed foods. Yet, reformulation could cost the food industry up to \$16 bn 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 salt 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 salt 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 salt targets under 2 scenarios:

- Short-term, 100% compliance of 2-year reformulation targets with no further progress.
- 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 ~\$7 bn, health-related cost savings of ~\$1.7 bn (95% UI: \$1.0 bn, \$2.9 bn) 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 salt reduction

targets could result in industry costs of ~\$16 bn, health-related cost savings of approximately \$5.1 bn (\$3.4 bn, \$8.3 bn), and industry health gain of ~1 80 000 (149 000, 209 000) QALYs, with an ICER of ~\$60 000 (\$2 000, \$168 000).

For the subset of food manufacturing, the long-term salt reduction targets would lead to health-related savings of ~\$1 bn (\$0.6 bn, \$1.6 bn) and ~32 000 (27 000, 37 000) QALYs gained with an ICER of \$4 89 000 (\$160 000, \$1 052 000).

Conclusion Sustained salt 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.

OP2 DID PROPONENTS AND OPPONENTS OF THE SOFT DRINKS INDUSTRY LEVY USE THE NEWS MEDIA TO INFLUENCE THE POLICY DEBATE? A QUALITATIVE DISCOURSE ANALYSIS USING PRACTICAL REASONING

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Background There is growing body of evidence that indicates so-called unhealthy commodity industries (UCIs) such as alcohol and tobacco use similar tactics to resist upstream regulation and maximise profits. The media then offers UCIs a potentially important channel for direct lobbying of the public and policy-makers. In March 2016, the UK Government announced a soft drinks industry levy (SDIL) as part of its strategy to combat obesity and non-communicable diseases associated with excessive sugar consumption. The likely effectiveness of this policy has been hotly debated by stakeholders on opposing sides. The aim of this study was to use critical discourse analysis (CDA) to examine how SDIL proponents and opponents sought to influence the public and policy-makers through the news media, during a time of intense policy deliberation.

Methods We conducted a content analysis of news articles discussing the SDIL published in 11 UK newspapers between 1 April 2015 and 30 November 2016, identified through the Nexis database. Stakeholder citations were identified and imported into NVivo for qualitative coding according to a thematic typology developed and tested in a previous analysis of alcohol and tobacco industry tactics. CDA was then used to identify the presentation of circumstances, claims, counter-claims, alternative solutions, values, policy goals, means of achieving goals and consequences in order to uncover the argumentation used by opponents and proponents of the SDIL.

Results In the final sample of 491 newspaper articles, a range of 287 stakeholders were presented as citing 1761 arguments; 65% for and 35% against the SDIL. We identified three scenarios of argumentation: 1) The soft drinks industry as a public health stakeholder; 2) the SDIL as a small but important step in tackling obesity; and 3) the SDIL as a 'win-win' scenario. Our findings support the concept of a common 'play-book' of arguments used by opponents of the policy.

#Top scoring abstract. Abstracts marked # are one of the top 15 highest scoring abstracts.

Conversely, SDIL proponents demonstrated three sources of inconsistency: 1) change in ideological stance; 2) pursuit of academic rigour; and 3) inconsistent arguments.

Discussion Public health policy advocates engaged in media debates are faced with the direct lobbying and denialism tactics of producers and marketers of unhealthy commodities. These advocates may benefit from increasing awareness of typical UCI tactics, presenting clear and consistent objectives, and supporting arguments with quality evidence. Our CDA contributes to a growing body of literature concerning media debates about upstream legislative public health measures focussing on unhealthy commodities.

OP3

COST-EFFECTIVENESS OF THE U.S. FDA ADDED SUGAR LABELING POLICY FOR IMPROVING CARDIOMETABOLIC HEALTH: MICROSIMULATION MODELLING STUDY

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Background Excess added sugars, particularly from sugar-sweetened beverages (SSBs), are associated with cardiometabolic risk including type 2 diabetes (T2D) and cardiovascular disease (CVD). Despite recent declines in SSB intake in the US, added sugar intake from SSBs and foods remains high and substantially exceeds dietary recommendations. The US Food and Drug Administration (FDA) announced major changes to the Nutrition Facts panel in 2016, including mandatory labeling of added sugar content, as a strategy to target added sugars in packaged foods and beverages. However, the potential health and economic benefits of the FDA proposal remain unclear.

Objective To estimate the cardiometabolic and economic effects of implementing FDA's added sugar labeling policy from 2018–2037.

Methods We used the validated, US IMPACT Food Policy microsimulation model to estimate the T2D and CVD cases averted and quality-adjusted life-years (QALYs) gained from the FDA policy for US adults age 30–84 years.

We modelled two policy scenarios:

1. implementation of the FDA added sugar labeling policy (sugar label)
2. anticipated reactive industry reformulation (sugar label + reformulation).

Model inputs included national health statistics from CDC; added sugar intakes from NHANES; policy effects on consumer intake from labeling intervention studies; obesity-mediated and direct effects of added sugars from SSBs and other foods on T2D and CVD from meta-analyses; policy costs including government administrative costs; industry compliance costs from federal government reports; healthcare costs including medical, productivity, and indirect costs from the AHA and American Diabetes Association. All costs were inflated to constant 2017 US dollars, then discounted annually at 3%. We took a societal perspective and assumed a willingness to pay of \$1 00 000 per QALY. Probabilistic sensitivity analysis accounted for model parameter uncertainty and population heterogeneity.

Results Between 2018 and 2037, the *sugar label* could prevent approximately 354,400 CVD cases (95% UIs: 167,000–673,500) and 5 99 300 diabetes cases (302,400–957,400), gain some 727,000 QALYs (401,300–1,138,000), and save approximately \$31 bn (15.7–54.5) in net costs from a healthcare perspective or \$62 bn (33.1–103.3) from a societal perspective.

For the *sugar label+reformulation* scenario, corresponding gains could be substantially larger: approximately 708,800 CVD cases (369,200–1,252,000), 1.2 m diabetes cases (0.7–1.7), and 1.3 m (0.8–1.9) QALYs, with some \$58 bn (31.9–92.4) and \$113 bn (67.3–175.2) net savings from the healthcare and societal perspectives respectively. Scenarios were estimated with >80% probability to be cost-saving by 2023.

Conclusion Implementing the FDA added sugar labeling policy could generate substantial health gains and cost savings for the US population.

OP4

ASSESSING THE IMPACT OF THE BARBADOS SUGAR SWEETENED BEVERAGE TAX ON GROCERY STORE BEVERAGE SALES AND NATIONAL IMPORTS: AN INTERRUPTED TIME SERIES ANALYSIS

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Background A 10% tax on sugar sweetened beverages (SSBs) was implemented in Barbados in September 2015. This study aims to assess whether sales of SSBs and non-SSBs changed following implementation of the tax.

Methods We used electronic sales data from a major grocery chain from January 2012 – January 2017, and national import data from the Barbados Statistical Service from January 2013–July 2017. Grocery store data were used to calculate litres sold per week of SSBs, non-SSBs, and beverage sub-categories (sodas, waters) over 264 weeks. We used an interrupted time series (ITS) design to assess whether the introduction of the tax was associated with a change in level and trend in sales. All analyses controlled for inflation, seasonality and tourism.

Using national import data, we calculated cumulative litres imported (to account for stockpiling) by beverage category. We assessed whether the introduction of the tax was associated with a change in the trend of the cumulative litres imported. To enable comparison, we re-estimated the grocery store models separately for locally manufactured and imported beverages. STATA/SE 14.2 was used for all analyses.

Results In 2016 (the first full year of tax implementation), the average decrease in SSB grocery store sales was –2,822 litres/week [95% CI –6,397 to 752] compared to the estimated counterfactual without the tax. The change per week increased over time, with an average decrease from July 2016–December 2016 of –4,349 litres/week [95% CI –8,307 to –391]. Locally manufactured SSBs decreased by an average of –5,814 litres/week [95% CI –8,692 to –2,936] and imported SSBs increased by an average 4277 litres/week [95% CI 2,872 to 5682]. Non-SSB sales increased by 1954 litres/week [95% CI 507 to 3401], with water accounting for an average increase of 1435 litres/week [95% CI 393 to 2477].