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Topic: Law and regulation in public health nutrition

Title: The Price ExaM Study: Combining experimental methods, econometric models, and simulation modelling to determine price elasticity values for studying food taxes and subsidies

Presentation Type: Oral

Introduction: There is a need for accurate and precise food price elasticities (PE, change in consumer demand in response to change in price) to better inform policy on health-related food taxes and subsidies.

Methods: We developed a novel approach to estimate more accurate and precise PE values including a Virtual Supermarket experiment and econometric methods. Findings are applied in simulation models to estimate population health impact (Quality Adjusted Life Years [QALYs]) using a multi-state life-table model.

Results: The study consists of four sequential steps:

1. We generate 5,000 price sets with random price variation for all 1,450 Virtual Supermarket products. On top of that, we add systematic price variation for foods to simulate five policy interventions: a fruit and vegetable subsidy and taxes on sugar, saturated fat, salt, and sugar-sweetened beverages.
2. Using an experimental design, 1,000 shoppers are asked to complete five household grocery shops in the Virtual Supermarket where they are randomly assigned to one of the 5,000 price sets each time.
3. Output data (ie, multiple observations of price configurations and purchased amounts) are used as inputs to econometric models (using Bayesian methods) to estimate more accurate PE values.
4. A disease simulation model will be run with the new PE values as inputs to estimate QALYs gained and health costs saved for the five interventions.

Conclusions: This world-first combination of econometric, experimental and simulation modelling methods is proceeding successfully and offers potential to provide more robust evidence to inform policy on health-related food taxes and subsidies.