**Sugar-Sweetened Beverage Warning Labels in Baltimore, Philadelphia and San Francisco: A Simulation Study**

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Given the strong evidence that sugar-sweetened beverage (SSB) consumption contributes to childhood obesity, several cities have been considering mandating SSB warning labels and are interested in a better understanding of the potential impact of implementing such a policy. We explored the impact of sugar-sweetened beverage (SSB) warning label policies on adolescent overweight and obesity prevalence by developing an agent-based models of Baltimore, Philadelphia, and San Francisco. The model represents the adolescent population, school locations, and food sources of each city along with metabolic rates tailored for individual agents. We followed a cohort of adolescents through numerous scenarios, varying the policy implementation and label efficacy, compliance and literacy rates. Based on our experiments, implementing SSB warning labels at all SSB retailers lowered obesity prevalence among adolescents in all three cities. Labels with 8% efficacy resulted in the following percent changes in obesity prevalence: Baltimore: -1.92% (95% range: -3.3, -0.97; p=9.29e-140,); San Francisco: -4.47% (95% range: -6.36, -2.86; p=5.36e-62); Philadelphia: -2.38% (95% range: -3.05, -1.73; p=8.45e-52). Our simulations showed how warning labels may decrease overweight and obesity prevalence in a variety of circumstances with label efficacy and literacy rate identified as potential drivers. Implementing a warning label policy may lead to a reduction in obesity prevalence. Focusing on warning label design and store compliance, especially at supermarkets, may further increase the health impact.