



## Berkeley Evaluation of Soda Tax (BEST) Study Preliminary Findings

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*Interim results presented today at the American Public Health Association, from the largest-to-date evaluation of Berkeley, California's 2014 sugar sweetened beverage excise tax, show that the one cent per ounce tax has been fully passed on to the retail pricing of sugar sweetened beverages in large and small chain supermarkets and chain gas stations, a prerequisite for taxes to reduce consumption. Data from the City of Berkeley also show that over \$692,000 in revenues were raised in the first six months (or over a dollar for every resident per month), to be used in general fund efforts to promote healthier communities in the City. The preliminary results are based on data from two studies, one which collected prices from 26 stores pre-tax and at 4 months, and the second analyzing sales weighted data on 9.1 million beverage transactions in two grocery chains during the first six months. Price changes varied by store and product type as well as by package size. Findings were consistent across studies and with a recently published smaller study. A similar 10% beverage tax in Mexico has been shown to decrease consumption of sugar sweetened beverages.*

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### About the Berkeley Tax:

In November of 2014 the City of Berkeley, California passed the nation's first substantial excise tax on sugar sweetened beverages, of 1 cent per ounce, with the support of 76% of the electorate. It was to have become effective January 1, but implementation was delayed until March 1, and roll-out to small businesses is just starting. This small city of 117,000 people also collected \$692,000, or over \$100,000 monthly in revenue in the first six months of the tax.

### About the BEST STUDY:

The BEST Study is a collaboration between the Public Health Institute and the University of North Carolina, funded by Bloomberg Philanthropies, to evaluate the impact of the tax. It is looking at changes in prices, sales and consumption of sugar sweetened beverage during the first year of the tax. Today's presentation at the American Public Health Association addresses the price component.

### Research Question:

For a soda tax to affect the consumption of sugary drinks, the tax must be passed on to the price of the taxed products. This component of the BEST study was to determine if that occurred and to what extent.

### Methods:

**Study 1 – Store Price Survey.** The first study examined 1168 prices of a **panel of 68 taxed and untaxed beverage products** in **26 stores** of different types in Berkeley in Dec 2014 vs June 2015, or after the first

4 months of the tax. Leading stores were selected from phone survey of beverage purchases and additional stores by random selection within store types from list of licensed businesses in the City of Berkeley from key diverse neighborhoods. Stores included 6 large supermarkets, 13 independent and 2 chain small markets; 2 corner stores; 2 pharmacies and 2 chain and 1 independent gas Price changes were not weighted by sales

**Study 2 – Retail Scanner Data** from two large grocery chains. This study examined monthly sales weighted average prices of beverages in Berkeley stores from 2 chains (with 1/3 of the City’s large grocery establishments). Chain supermarkets represent 52% of beverage sales in Bay Area. All large groceries and several independent stores in Berkeley were invited, 2 agreed to supply data. Sales weighted prices were calculated using scanner data of all transactions for 3 Berkeley and 6 Bay area comparison stores from Jan 2013-Aug 2015 (32 months). Data covered 100 million transactions of which **9.1 million beverage transactions are included** in this analysis. This study covered the first six months of the tax.

All findings presented here are interim and preliminary.

**Four month Interim Findings, Store Survey**

- **Price of SSBs rose >1 ¢/oz among those sold at large chain supermarkets (1.32 cents) , small chain supermarkets (1.65 cents) , and chain gas stations (2.71 cents)**
- In chain pharmacies, the tax was partially passed-through among SSBs (0.43 cents) and untaxed beverages
- Pass-through did not occur in independent small markets (-0.21) or gas stations (-0.56 cents)
- Staff from chain supermarkets (both large and small) compared to staff from other store types were more likely to report
  - receiving information about the SSB tax from city reps
  - seeing changes in price

Figure 1:

**Changes in Prices of 68 Beverage Product Panel in Retail Stores 12-2014 through June 2015  
4 months Post Tax, Berkeley, CA**

Store type (# stores)	# items		Mean price change (¢/oz)	
	Tax	Untax	Tax	Untax
<b>Large Supermarket (N=6)</b>	43	43	<b>1.32*</b>	0.17
<b>Chain Small Supermarket (N=2)</b>	14	19	<b>1.65*</b>	<b>0.63</b>
<b>Independent Small markets (N=13)</b>	122	87	-0.21	-0.35
<b>Chain Gas Station (N=2)</b>	10	7	<b>2.71*</b>	<b>0.25</b>
<b>Independent Gas Station (N=1)</b>	15	15	-0.56	-0.05
<b>Pharmacy (N=2)</b>	25	25	<b>0.43</b>	<b>0.61</b>

Note: bold values denote increase in prices; \* denotes increase in price of ≥1¢/oz

**Six Month Interim Findings, Retail Scanner Data**

- Sales weighted prices of taxed beverages rose by 0.5-0.76 ¢/oz in March 2015 (Month 1 post-tax) to 1.42-1.74 ¢/oz in August 2015 (Month 6 post-tax), with some fluctuations
- Prices increased more on smaller package sizes than on larger ones
- Chain 1 Price changes illustrated below in Figure 2.

**Key Points**

- This is the first sales weighted data available and largest sample
- 3-6 months after the Berkeley SSB tax was implemented, prices rose, but the increase was not uniform across store types, beverage categories, or package sizes
- Findings were consistent across the two studies, and with findings of Falbe, 2015
- The SSB tax was passed through starting Mar-Apr 2015 and pass-through became larger through Aug 2015
- Prices of untaxed beverages in Berkeley also rose slightly but were generally not statistically significant
- Among 2 Chain Supermarkets for which we had scanner data (of the 6 chains in Berkeley), over-shifting occurred by June 2015 and was generally maintained through August 2015
- Compared to other cities, the price increases among taxed beverages in Berkeley were higher
- There were different degrees of pass-through by package sizes
- Additional study components will include changes in beverage sales, statistical modeling and qualitative research with retailers, distributors and city and longer follow-up.

**Figure 2: Price Changes in Chain 1, Berkeley and Comparison Cities Jan.-August 2014 and 2015**

