The health care industry is becoming established as a leader in creating a model of healthy food practices. To date, over 300 hospitals and health care systems have signed the Healthy Food Pledge that was developed by Healthcare Without Harm. These hospitals are implementing a healthy food system approach that involves working with local farmers, purchasing food grown without pesticides and hormone additives, offering sustainably produced and healthy food choices, and minimizing food waste.

While a number of informational sources with ideas on how to make a food program more sustainable exist, implementing such changes is more difficult for hospitals. There is a need for more information and assistance on the actual process of implementing sustainable practice, and thus documenting how changes to institutional food systems are implemented will help other hospitals create healthier, more sustainable food systems.

A number of interventions aimed at improving healthy eating have been advocated, though outcomes from educational interventions aimed at increasing consumers’ knowledge about health and nutrition have been mixed. Alternatively, interventions emphasizing changes in the environment or other external factors that influence food choice may hold more promise. Changes in food supply and variety, provision of nutritional information at point of sale, nutrition policies and price incentives are among the interventions that have shown some success. This is the first study to examine the impact of pricing strategies and labeling in a health care setting.

**Methods**

**Price and Labeling Changes:** The study design consisted of 6, three-week study periods: (1) baseline, (2) price increase (tax) on unhealthy, non-organic or non-local food, (3) price decrease (subsidy) for healthy, organic, or local food, (4) simultaneous tax and subsidy, (5) tax and subsidy with labels, and (6) return to baseline. The labels included nutrition information, maps of where food was produced, organic/non-organic labels, and educational messages. The food items included bison burgers, hamburgers, grilled chicken, breaded chicken, organic yogurt, non-organic yogurt, organic/local/sustainably produced cookies, and non-organic/non-local/non-sustainably produced cookies.

Recent Accomplishments: The elimination of bottled water, the elimination of fried foods, increased use of biodegradable containers, reduced paper use, the elimination of MSG and most trans-fats, hormone-free dairy products, increased local selection, and a new rooftop garden.

**Key Processes of Change:** Taking advantage of opportunities as they arise, incremental change, frequent communication amongst staff as well as with the GPO and local suppliers/processors.

**Facilitators to Implementation:** The corporate culture is supportive and open to new ideas, view that the cafeteria is a service, good communication among stakeholders, local programs and policies that support waste reduction.

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**Results of Price and Labeling Changes**

To date we have evaluated aggregate sales data for each 3-week study period. To control for changes in daily sales the quantity of each item sold was measured as a percentage of total quantity of items sold in the cafeteria in each 3-week period. A 20% price subsidy for bison burgers resulted in a 26% increase in sales from baseline. A tax on hamburgers of 20% along with the subsidy on bison resulted in a decrease of hamburgers sold by 20% and a 74% increase in bison sales. Adding the labeling and educational messages to this resulted in a 159.5% increase in bison sales. The pure price elasticity for bison burgers is -1.30 while the price elasticity with food labels is -7.97 suggesting that consumers are very responsive to a price decrease with food labels naming, more so than with just a price reduction.

After the price manipulation for yogurt (20% price drop for the organic brand, 20% increase for non-organic brand), the quantity of the organic brand sold (as a percentage of total yogurt sold) increased by 31.5% while the quantity of the non-organic yogurt sold fell by 5.7% compared to baseline sales. When we added the label message along with the price changes, there was a 36.3% increase in organic yogurt sold and a 6.6% decrease in non-organic yogurt sold. This translates to a price increase of organic yogurt of -1.58 and -0.26 for non-organic yogurt. The price elasticities with the labels are -1.82 and -0.33 for organic and non-organic yogurt respectively. A 20% tax on the non-organic/non-local cookie increased cookie quantity sold by 3.4%, however sales of the organic, local cookie increased by 208%. A 20% price decrease for the local, organic cookie resulted in an increase in sales of 122% while sales of the other cookie fell by 8%. When both a tax and subsidy were used along with labeling, there was a decline in sales of the non-local cookie by 10.3% and an increase in sales of 32.2% of the local, organic cookie.

**Conclusions**

Results from this study indicate that learning what is local, procuring it, preparing it, and the subsequent need to update contractual obligations in response were challenges and also time intensive. Although St. Luke’s had strong managerial support, gaining the support of cafeteria consumers was a concern. Resources could also be devoted to ensure the time needed to improve health and sustainability. At other hospitals, much work may be needed to communicate with and get the support of hospital leadership even before procuring any locally sourced foods. Changing the food system may necessitate culture change within the organization. Educating consumers about such changes may also be necessary.

Overall, there appears to be substantial price sensitivity for organic, local and healthier food items with stronger quantity changes when food labels are added to the price manipulations. This suggests that food labels at the point of purchase could be used along with taxes and subsidies to change food purchasing behavior. The next step of this research is to analyze daily sales and food selection of individual employees (controlling for relevant covariates from survey data) to determine sensitivities to price and label interventions.