

Implementation of Washington State's Healthy Nutrition Guidelines Under Executive Order 13-06

2016 EVALUATION

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Prepared for:

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Two prior reports on the 2014 and 2015 evaluations can be found here:

<http://www.doh.wa.gov/CommunityandEnvironment/WorksiteWellness/HealthyNutritionGuidelines>



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Healthy Nutrition Guidelines Under Executive Order 13-06 2016 Evaluation

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Executive Summary

OVERVIEW

In 2013, Washington Governor Jay Inslee signed Executive Order 13-06 (EO), *Improving the Health and Productivity of State Employees and Access to Healthy Foods in State Facilities*. This EO made Washington the first state to adopt a comprehensive approach to increase access to healthier food on state property and facilities. The EO will potentially affect 46 agencies, boards and commissions encompassed in the Executive Cabinet and Small Cabinet agencies, and an estimated 73,000 state employees and clients served in institutional settings. A key requirement of the Order is that all state executive agencies adopt and implement food service guidelines that meet the Washington State Department of Health's (WA DOH) Healthy Nutrition Guidelines (HNG), which are based on the 2010 Dietary Guidelines for Americans. These guidelines include criteria to ensure that healthy options are available in cafeterias, on-site retail venues, vending machines, meetings and events, and institutional food service sites. Implementation of the HNG began on July 1, 2014. Full implementation is to be achieved by December 31, 2016.

In 2014, WA DOH contracted with the University of Washington Center for Public Health Nutrition (CPHN) to assist with the development and execution of an evaluation of cafeteria implementation of the HNG. This 2016 implementation evaluation is a follow-up to the baseline and mid-implementation evaluations, conducted by CPHN during the summers of 2014 and 2015, respectively.

EVALUATION PURPOSE

The purpose of this 2016 evaluation is to assess the current food environments in order to inform continuing implementation of the HNG and future evaluation efforts, and to assess change in observance of guidelines since baseline, where possible.

METHODS

This was a mixed-method evaluation that included on-site assessments of cafeterias and micro-markets, analysis of sales data from micro-markets, photograph analyses of vending machines, and analysis of electronic employee surveys. Data collection took place from July through September, 2016.

Evaluation Data Sources

- Environmental assessment of 9 cafeterias
- Photographs of 5 micro-markets
- Photographs of vending machine contents of 80 machines (n=51 beverage machines and 29 snack machines)
- Sales data from 5 micro-markets
- Employee survey responses from selected agencies covered under the EO (n= 8 agencies and 2,706 respondents)
- HNG Implementation Survey for Washington State Institutions (n=23 institutions)

RESULTS

Cafeterias, vending machines, and micro-markets are not yet in full compliance with the HNG. Although progress towards *meeting* guidelines is evident in some areas, opportunities exist for improvement.

Cafeteria Assessments

Cafeteria compliance with the HNG is assessed on a point scale. To meet the HNG, food service venues of all sizes (small, medium and large) must earn a minimum of 25 points by meeting the basic HNG criteria. Medium and large food service venues must earn an additional 15 and 25 points, respectively, by implementing their choice of optional beverage, food component, and behavioral economic strategies. Small food service venues are also encouraged to implement the additional criteria, but are not required to do so.

Healthy Nutrition Guidelines Criteria

Basic Criteria

- While none of the cafeterias met all 9 basic criteria, all demonstrated partial observance by meeting some of the basic criteria and ALL cafeterias offered whole grains, raw salad-type vegetables, whole fruit, and lean protein options.
- Since baseline, the most progress was made in the areas of providing whole grains, offering and promoting free water, and limiting the number of deep-fried entrées.
- For the first time since the baseline evaluation, some cafeterias offered and promoted at least one low-sodium entrée.
- Since mid-implementation, fewer cafeterias offered meal items free of artificial trans-fat or partially hydrogenated oils, and fewer cafeterias offered at least one non-fat milk product.

Additional Criteria: Beverages, Food Components and Behavioral Economics Criteria

- Eight of the nine cafeterias achieved the additional criteria points required. (At mid-implementation, all 10 cafeterias evaluated achieved the additional criteria points.)
- Beverages and Food Components
 - **All cafeterias:** met the additional criteria for no free refills of sugar sweetened beverages (SSB); offered at least one non-fried fish or seafood option per week; offered condiments, sauces, and dressings on the side; offered at least one low-sodium oil and vinegar based salad dressing; and served one meal per day that provides food from at least three healthy food groups.
 - **No cafeteria:** offered low fat milk and milk products as the default option; offered only low-fat (1 %) and non-fat fluid milk products; offered low-sugar/high fiber cereal; or limited their cup sizes to 16 oz. or less.
- Behavioral Economics
 - At least half of the cafeterias had $\geq 75\%$ of promotional signage for healthier items and did not market deep-fried options as a feature of the day.
 - Behavioral economics criteria with the lowest adherence included selling all healthier options of chips, cereal yogurt, milk, soda and juice at an equal or lower price than the equivalent item available; training employees to prompt customers to choose non-fried vegetables when ordering; and listing healthier menu items first for each category of the menu.

Proportions of Healthful vs Non-Healthful Foods

While these criteria are not included in the HNG, they are commonly used measures to further describe cafeteria food environments.

- A majority of the cafeterias offered greater proportions ($\geq 51\%$) of non-healthy beverages (regular soda or fruit drinks) in their fountain machines.
- All cafeterias offered greater proportions ($\geq 51\%$) of non-healthy chips or cereals.
- Since mid-implementation:
 - More cafeterias offered a greater proportion ($\geq 51\%$) of healthy milk (skim or 1%) options compared to reduced or full-fat milk.
 - Fewer cafeterias offered a greater proportion of ($\geq 51\%$) low or reduced-fat yogurt options.

Placement and Promotion

These criteria are also not included in the HNG, but they are commonly used measures to describe placement and promotion of healthier food items.

- Over half of the cafeterias had signs or other displays that encouraged healthy eating; promoted a feature of the day or special combination meal; offered appealing fruit and vegetables that were well-lit, and offered fruit near the point of purchase.
- Less than half of the cafeterias had signs or displays that encouraged less healthy eating or overeating.
- Since mid-implementation, two cafeterias began displaying information about promotions or pricing strategies, two cafeterias started to indicate healthier items on their salad bar, two cafeterias started to indicate menu items as “healthy” or light”, two cafeterias started to display nutrition information, and two fewer cafeterias displayed signs that encouraged less healthy eating.
- However, three fewer cafeterias offered Washington-grown products, and no cafeteria made nutrition information available on the intra/internet.
- Similar to mid-implementation, areas for improvement include the provision of nutrition information about foods served on the agency intranet/internet and in the cafeteria; indicating healthier options on the salad bar; listing standards for terms such as “healthy” and “light” when they are used to describe food offerings; placing unhealthy items away from point of purchase; and purchasing and promoting Washington-grown products.

Vending

- The proportion of vending machines that were compliant with the HNG increased from mid-implementation.
 - 45% of beverage machines assessed were compliant (38% at mid-implementation).
 - 7% of the snack machines assessed were compliant (0% at mid-implementation).
- The range of beverage and snack item compliance across agencies improved from mid-implementation.
 - The range of beverage item compliance across agencies was 30%-67% (25%-64% at mid-implementation).
 - The range of snack item compliance across agencies was 3%-43% (3%-13% at mid-implementation).

Micro-Markets

- Of the five micro-markets assessed, three of the beverage sections, none of the grab-n-go entrée sections, and none of the snack sections were in compliance with the guidelines. The

range of compliance across all five micro-markets during this evaluation was 3%-23% for entrée sections, 29%-49% for snack sections, and 30%-61% for beverage sections.

- Of the three matched micro-markets assessed during mid- and this 2016 implementation phase, entrée section compliance increased at two of the three micro-markets; snack section compliance increased at one of the three micro-markets; and beverage section compliance decreased at all three micro-markets.
- The top selling snacks in micro-markets were cheese squares/string cheese, hard boiled eggs, and Cheetos®.

Employee Survey

This 2016 evaluation marks the first incorporation of an employee survey as a component of the evaluation. The survey was distributed online to employees affected by the EO. Of the 2,706 survey respondents:

- 86% agree that it is important to be able to purchase healthy foods at work.
- 50% agree that healthy food and beverage options available for purchase in their building have increased over the last two years.
- 44% agree that there are not enough healthy options in agency micro-markets.
- 58% agree that there are not enough healthy options in agency cafeterias/cafes.
- 69% agree that there are not enough healthy options in agency beverage vending machines.
- 70% agree that there are not enough healthy options in agency snack vending machines.

Institutional Implementation Survey

Also a new component in this 2016 evaluation, the institutional implementation survey was designed to assess compliance with the institutional components of the EO. Twenty three institutions responded (10 from the Department of Corrections (DOC) and 13 from the Department of Social and Health Services (DSHS))

- All institutions provide water during meals and snack times and rarely, if ever, serve full-calorie, sugar sweetened beverages. When fruit juice is served, 13 out of 15 respondents always serve 100% fruit juice.
- All institutions offer at least 2 cups of fruit daily, with 17 out of 22 respondents offering fresh fruit all of the time. When canned fruit is served, all respondents offer fruit in water, unsweetened juice or light syrup.
- Twenty one of 23 respondents offer at least 2.5 cups of vegetables every day. Canned vegetables are less frequently served than frozen or fresh and when they are served, 10 out of 17 respondents offer lower sodium varieties of canned vegetables.
- Twenty one of 23 respondents offer approximately 6 oz. of grains daily. Seventeen of 21 responding offer breads that are ≥ 50% whole grain all of the time. Fewer offer ≥ 50% whole grain rice or pasta all of the time.
- Twenty one of 22 respondents offer 5.5 oz. of protein daily. Nine respondents serve beans all of the time; 12 serve lean poultry all of the time.
- Fourteen of 23 respondents always serve meals that are free of artificial trans-fat.
- Four of 23 respondents (all from DSHS institutions) indicate that they cook from scratch all of the time. Five of 10 DOC respondents report that they heat pre-packaged meals all of the time.
- At least half of the DSHS institutions reporting use lower sodium condiments, canned vegetables, deli meats and soup bases all of the time. More than half of DOC institutions report using lower sodium canned/frozen vegetables all of the time.

- There are differences between sources of Washington grown foods in DSHS and DOC institutions. The majority of these foods are sourced through distributors for DSHS institutions, and only two report having an on-site garden. There is interest in learning more about sourcing through food hubs, farmer co-ops and directly from farms. Eight of 9 DOC institutions responding have on site gardens and more than half purchase directly from farms. All of the DOC sites responding also purchase Washington grown foods through a distributor.
- The leading barrier to serving healthy foods for DSHS institutions is lack of availability from current food contracts. For DOC, major barriers most frequently cited are limited budget and the fact that meals are already pre-packaged.
- More than half of all respondents express interest in staff training addressing cooking techniques and incorporating healthy foods into meals.

RECOMMENDATIONS

Cafeterias:

- 1) Continue to clarify HNG criteria. This can include clearer definitions for operators, assuring consistency in definitions throughout, and/or re-wording of criteria. For example, confusion still exists regarding which products contain trans-fat and compliant cup sizes.
- 2) Continue to address the HNG criteria that were not met in any of the assessments, and either modify them, identify ways to help operators comply with them or eliminate them. Some of the criteria may not be realistic for cafeterias to implement, or may not help achieve the goals as intended by the Executive Order.
- 3) Continue to identify ways to incentivize cafeteria operators to try new foods/menu items.
- 4) Encourage vendors and cafeteria operators to include taste tests and other vendor-sponsored activities to support vendors and operators in making changes. Identify resources needed by cafeterias to offer taste tests.

Micro-Markets and Vending:

- 5) Continue to explore opportunities to increase the breadth of data collected about micro-markets and vending machines to capture additional information regarding product availability, stock dates, sales trends, and consumer purchasing behavior.
- 6) Continue working with food suppliers to communicate demand for healthier products.

Collaboration/Communication:

- 7) Consider collaborating with School Nutrition advocates who are working with industry to address concerns about “copy-cat” snack foods and to develop new foods that comply with school nutrition Smart Snacks guidelines.
- 8) Continue offering technical assistance and resources to cafeteria operators, including lists of items that meet the nutrition guidelines and sources for purchase, and guidance around promotion of “healthy” foods.
- 9) Increase efforts to share best-practices and success stories between agencies.
- 10) Improve or continue to expand opportunities to build relationships between key stakeholders (i.e. WWCs to WWCs, WWCs to vendors, WWCs to CO’s and CO’s to vendors).
- 11) Continue to identify opportunities to widely celebrate and communicate successes of implementation of healthy nutrition guidelines across agencies.

Employees

- 12) Communicate results of employee survey with employees.
- 13) Further explore customer decision-making around use of micro markets vs. vending vs. cafeterias.
- 14) Explore influence of surrounding food environment (i.e. availability of fast food restaurants, convenience or grocery stores, other options) on employee food purchasing behaviors.

Institutions

- 15) Continue working with institutions to provide technical assistance around HNG and how to comply with them.
- 16) Address barriers cited by institutions to offering healthier foods.
- 17) Address training needs and interests expressed by institutions.

Introduction

In 2013, Washington Governor Jay Inslee signed Executive Order 13-06 (EO), *Improving the Health and Productivity of State Employees and Access to Healthy Foods in State Facilities*, making Washington the first state to adopt a comprehensive approach to increase access to healthier food on state property and facilities.¹ The EO will potentially affect 46 agencies, boards and commissions encompassed in the Executive Cabinet and Small Cabinet agencies, and an estimated 73,000 state employees and clients served in institutional settings. A key requirement of the Order is that all state executive agencies adopt and implement food service guidelines that meet the Washington State Department of Health's (WA DOH) Healthy Nutrition Guidelines (HNG), which are based on the 2010 Dietary Guidelines for Americans.^{2,3} These guidelines include criteria to ensure that healthy options are available in cafeterias, on-site retail venues, vending machines, meetings and events, and institutional food service sites.

Implementation of the HNG began on July 1, 2014 with full implementation to be achieved by December 31, 2016. The State Employee Health and Wellness Steering Committee, staffed in part by WA DOH, is responsible for EO 13-06 compliance oversight. WA DOH convened a Food Procurement Workgroup to develop a guide for use by agencies and cafeteria operators in implementing the HNG. In addition, to facilitate implementation of the guidelines, WA DOH's Healthy Eating and Active Living (HEAL) unit conducts trainings, facilitates outreach efforts, and provides ongoing technical assistance to food service operators, agency leaders, worksite wellness coordinators, and food and beverage providers. The implementation guide and guidelines may be viewed at

<http://www.doh.wa.gov/portals/1/documents/pubs/340-224-healthynutritionguidelines.pdf>

Due to the far-reaching impact and unique needs of individual agencies and venues, WA DOH allocates staff time to support successful adoption and implementation of EO 13-06. WA DOH was also awarded a 3-year CDC Sodium Reduction in Communities Grant in 2013 which aims to increase access to lower sodium food options, reduce sodium intake, and continue to build practice-based evidence around effective population-based strategies to reduce sodium consumption at the community level. The overlap of these two initiatives provides an opportunity for collaboration in implementation and evaluation efforts.

WA DOH contracts with the University of Washington Center for Public Health Nutrition (CPHN) to develop and conduct periodic evaluations of progress in implementing the HNG. This evaluation, designed to capture progress in the 2016 implementation phase year, is the third in a series of evaluations that include a baseline and mid-implementation evaluation, conducted in 2014 and 2015 respectively. This evaluation included two new components: an employee survey, and a survey of institutions covered under the EO, designed to assess compliance with the institutional HNG. In recognition of their increasing presence, assessment of micro-markets was expanded to include two additional locations.

Evaluation Purpose

The purpose of this final implementation phase evaluation is to assess the current food environments of institutions and venues affected by EO 13-06, late summer of the year when all venues were to be in full compliance of the HNG. Additionally, experiences and observations of employees working in locations affected by the EO were assessed. Results will be used to inform continuing implementation and future evaluation efforts, assess change in observance of guidelines from baseline where possible, and make recommendations for ongoing implementation of the guidelines.

Key evaluation questions include:

- 1) How does EO 13-06 impact the food environments of affected food service venues, such as worksite cafeterias, micro markets, institutions and vending machines?
- 2) What impact do the changes at affected food service venues have on the impact of micro market purchases and sales?
- 3) How have the food environments changed since the baseline and mid-implementation evaluations were conducted?
- 4) What has been the experience of employees with regard to the HNG, and what factors influence their food choices?
- 5) What additional resources and support are needed to facilitate implementation of the guidelines?

The evaluation plan and logic model that guide the evaluation are included in Appendices A and B.

Methods

This was a mixed-method evaluation that included on-site assessments of cafeterias, photograph analyses of vending machines and micro-markets, analysis of sales data from micro-markets, and analysis of electronic employee and state institution surveys. Data collection took place from July through September, 2016. The University of Washington Institutional Review Board approved study procedures. Table 1 lists the data sources included in this evaluation.

Table 1: Evaluation Data Sources

Data Sources	
Environmental assessments	9 cafeterias
Photographs of micro-market contents	5 micro-markets
Photographs of vending machine contents	81 machines
Micro-market sales data	5 micro-markets
Employee survey responses from agencies covered under the EO	8 agencies, 2,076 respondents
HNG Implementation Survey for Washington State Institutions	10 Department of Corrections Institutions, 13 DSHS Institutions

Cafeteria Assessments

Cafeteria compliance with the HNG is assessed on a point scale. To meet the HNG, food service venues of all sizes (small, medium and large) must earn a minimum of 25 points by meeting the basic HNG criteria (criteria available at <http://www.doh.wa.gov/portals/1/documents/pubs/340-224-healthynutritionguidelines.pdf>.)

Medium and large food service venues must earn an additional 10 and 25 points, respectively, by implementing their choice of optional beverage, food component, and behavioral economic strategies. Small food service venues are also encouraged to implement the additional criteria but are not required to do so. Food service venues assessed in this evaluation were all either large (n=5) or medium (n=4).

The assessment tool developed for the baseline evaluation was updated for the mid-implementation evaluation and used for this 2016 implementation evaluation. A detailed cafeteria assessment guide was developed to accompany the tool. See Appendix C for the cafeteria assessment tool and Appendix D for the assessment guide.

Once WA DOH staff informed cafeteria operators that researchers would be contacting them, researchers scheduled assessment visits. A total of nine cafeterias were assessed - five large and four medium. These included eight cafeterias that were assessed at baseline and nine cafeterias that were assessed at mid-implementation (Table 2). One cafeteria was remodeled after the mid-implementation evaluation and was reclassified as a large food service venue for this phase.

Two researchers visited cafeteria sites between the months of July and August 2016. Assessments took place between peak breakfast and lunch hours to help ensure consistency and product availability. Each

researcher independently completed the tool and discussed discrepancies until consensus was reached. If a researcher was uncertain of the appropriate response, they first spoke with the cafeteria operator or cafeteria manager (if present) and then discussed the response with the research team. The final decision was documented in the assessment tool comments.

Table 2: Cafeterias Assessed in the Baseline, Mid-Implementation, and 2016 Implementation Phase Evaluations

Agency	Food Service Venue	Size	Surveyed at Baseline (n=9)	Surveyed at Mid (n=10)	Surveyed 2016 (n=9)	Affected by EO 13-06
Agencies within the Natural Resources Building (NRB)	City Picnics	Lrg	Yes	Yes	Yes	Yes
Labor and Industries (LNI)	Bienvenue Café	Lrg	Yes	Yes	Yes	Yes
Department of Licensing (DOL)	Hot Little Bistro	Med	Yes	Yes	Yes	Yes
Goodrich Building (includes Department of Corrections (DOC) and Department of Transportation (DOT))	Fresh Taste Café ¹	Lrg	Yes	Yes	Yes ²	Yes
Department of Enterprise Services (DES)	Megabites Deli	Med	Yes	Yes	No ⁵	Yes
Department of Social and Health Services (DSHS)	Oasis Café	Med	Yes	Yes	Yes	Yes
Legislative building	Dome Deli	Med	Yes	Yes	Yes	No ³
Department of Ecology (ECY)	The Ecology Café!	Lrg	Yes	Yes	Yes	Yes
Department of Social and Health Services (DSHS)	Bobby Jayz	Lrg	Yes	Yes	Yes	Yes
Department of Transportation (DOT)	R-Café	Med	No ⁴	Yes	Yes	Yes

¹ Formerly named Courtyard Café

² Formerly classified as a medium-sized cafeteria

³ Although technically not covered under EO 13-06, this cafeteria is one of two managed by an operator who applies the guidelines to both operations

⁴ The cafeteria was not in operation during Year 1 evaluations

⁵ Megabites Deli was not included in the evaluation during this implementation year because they have not been actively engaged in implementation of the Healthy Nutrition Guidelines.

Researchers used a code book to code and enter the collected data from the cafeteria assessments into an excel spreadsheet. Data was visually inspected for errors and discrepancies. Questions were discussed among the team and corrected prior to analysis. The primary analysis was an evaluation of cafeteria adherence to the HNG basic criteria at the time of the assessment, as well as trends in observance of the EO between baseline, mid-implementation and the 2016 implementation phases. Secondary analyses evaluated cafeteria observance of additional criteria. This included assessment of the proportion and pricing of healthy items, as well as the placement and promotion of healthy items as compared to unhealthy items. When possible, observance of these criteria were also compared between all three implementation phases.

Vending

The HNG for vending machines includes three categories of foods and beverages: healthiest, healthier, and limited (criteria available at <http://www.doh.wa.gov/portals/1/documents/pubs/340-224-healthynutritionguidelines.pdf>).

To meet the HNG, 50% of vending machine products must meet the nutrition criteria listed in the healthier and/or healthiest categories. To determine vending machine compliance with the HNG, researchers visually assessed photographs that were provided by worksite wellness coordinators and WA DOH staff. An established protocol for taking and labeling photographs was followed for all vending machine photographs included in the assessment (see Appendix E for vending machine photograph protocol). Photographs documenting the contents of 81 machines were taken in 30 buildings, representing eight different agencies (see Table 3 for agencies included in vending machine assessments). Of the machines assessed, 29 were snack machines and 52 were beverage machines. One beverage machine could not be coded due to lack of clarity and poor quality of the photographs.

Table 3: Number of Beverage and Snack Vending Machines, by Agency

Agency	# of Beverage Machines	# of Snack Machines
Department of Health	10	5
Department of Retirement Systems	1	1
Department of Services for the Blind	1	1
Department of Social and Health Services	10	5
Health Care Authority	3	1
Labor & Industries	3	0*
Licensing Department	16	13
Natural Resources Building	7	3
TOTAL	51	29

* Labor & Industries does not have snack machines

Research staff evaluated images of each vending machine by recording the total number of slots that were stocked with an identifiable food or beverage product. If an item was not identifiable in a submitted photograph, it was excluded from the analysis. Identifiable food and beverage products were matched to a nutrition database that categorized individual food and beverage items as healthiest, healthier, or limited based on the HNG criteria. The proportion of healthiest, healthy, and limited items available in each vending machine was calculated.

Micro-markets

During the mid-implementation and 2016 evaluations, researchers assessed micro-market compliance using draft HNG¹ (see Appendix F for draft micro-market guidelines). There were no micro-markets at baseline. In the draft HNG, micro-market snacks and beverages are classified under one of three categories based on their nutritional content: healthiest, healthier, and limited. As with vending machines, micro-market snack and beverage items are compliant if at least 50% of the items available for sale meet the healthier and/or healthiest nutrition criteria. Micro-markets include a third category of foods designated as grab-n-go entrées that are classified under one of two categories based on their nutritional content: healthy or limited. At least 25% of entrees available for sale at micro-markets must meet the healthy nutrition criteria to be considered compliant.

Five micro-markets from four state agencies were assessed in July 2016. To assess compliance to the HNG, researchers used a standard protocol to photograph micro-markets (see Appendix G for micro-market photography protocol). Research staff evaluated the images from each of the five micro-markets and coded all applicable food and beverage items that were available for sale. Snack and beverage items were matched to a nutrition database that categorized individual items as healthiest, healthier, or limited. Grab-n-go entrees were matched to a nutrition database that categorized entrees as healthy or unhealthy. The proportion of healthiest, healthier, and limited snack, beverage, and entrée items was calculated.

In addition to analyzing micro-market items available for sale, April to July 2016 sales data was provided. The sales data were evaluated to assess the proportion of healthy and limited items sold each month and to identify and compare the most frequently sold healthy items in each micro-market.

Employee Survey

An electronic employee survey was distributed to selected Washington State agencies covered under the EO to collect information about employees' purchasing behaviors, and access to/preference for healthy food and beverage items in agency food environments. Researchers worked with DOH staff to develop survey questions about factors that influence purchasing decisions such as taste, price, and availability of fresh foods; employee satisfaction regarding the availability of healthy options in agency cafeterias/cafés, vending machines, and micro-markets; and general questions about employee health and perceptions of health.

An employee survey was created using Catalyst Web Tools in July 2016 and was piloted by 6 individuals from 3 different agencies to gather feedback on the length of the survey questions, the time required to complete the survey, and clarity of the survey questions. Researchers received a total of six responses from testers and incorporated their feedback into the 2016 version of the survey.

¹ Micro Market guidelines are in draft form and will be finalized January, 2017.

The employee survey, titled “Food and Beverage Options for Washington State Employees”, was emailed to employees by human resources and/or wellness coordinators of the selected agencies via a web link, in July 2016 (See Appendix H for the survey questions). The employee survey was voluntary and employees could skip any question. Respondents had two weeks to complete the survey. A reminder email was sent a week after the initial web link was sent out. WA DOH received confirmation that the survey was sent to employees from eight buildings/agencies that were selected because they had cafeterias and/or micro-markets on the campus: Natural Resource Building, Edna Lucille Goodrich (ELG) Building, Department of Licensing, Department of Transportation, Department of Ecology, Department of Health, and two Labor and Industries buildings. Due to logistical challenges, the survey was not sent to employees of Health Care Authority or Department of Social and Health Services. A total of 2,706 survey responses were received (36% response rate).

Institutional Survey

An electronic institutional survey was distributed to all Department of Corrections (DOC) and Department of Social and Health Services (DSHS) facilities that serve food to clients, inmates, and patients to gather data on their implementation of the HNG and to identify facility needs and opportunities for implementing the HNG. Researchers used the *Healthy Nutrition Guidelines Implementation Guide for Institutions* as their framework for the development of survey questions, and worked with DOH staff to further develop the survey. The institutional survey consisted of questions on the types of beverages, fruits, vegetables, grains, and protein that facilities serve their clients/inmates/patients, as well as on their cooking methods and use of fat and sodium in their preparation of food items. The survey also asked about facility use of Washington-grown food and their interest in healthy food.

A pilot institutional survey was created using Catalyst Web Tools in July 2016 and was sent to DOH staff for editing and to test for ease of use. Because DOC serves inmates and DSHS serves clients and patients, two final versions of the institution survey were developed so that appropriate language could be used in the questions. The two surveys were titled “Healthy Nutrition Guidelines Implementation Survey for Institutions - DOC” and “Healthy Nutrition Guidelines Implementation Survey for Institutions – DSHS” (See Appendix I for the survey questions). These surveys were emailed by DOC and DSHS representatives to food service managers/directors of 12 DOC facilities and 19 DSHS facilities, with instructions to submit only one survey per facility. Food service managers/directors were provided with a web link to the survey, as well as a PDF version of the survey, so that they were able to gather relevant data before initiating the survey. The institutional survey was voluntary and food service managers/directors of the facilities could skip any question. Respondents had three weeks to complete the survey and reminder emails were sent out by WA DOH. A total of 10 surveys were received from DOC (83% response rate) and 13 surveys from DSHS (68% response rate).

Results

Cafeteria Assessments

Basic Criteria

While none of the cafeterias satisfied all 9 basic criteria, all cafeterias demonstrated partial observance by meeting some of the basic criteria:

All 9 cafeterias assessed offered:

- at least 1 whole grain
- at least 1 raw, salad-type vegetable
- at least 2 whole or sliced fruits
- at least 1 lean protein option

More than half of the cafeterias offered:

- no more than 1 deep-fried entrée option daily
- no meal items containing artificial trans-fat or partially hydrogenated oils
- and promoted free water

Fewer than half of the cafeterias offered:

- at least one low-sodium entrée or meal that was promoted
- at least one fat-free milk product

Baseline to 2016 Implementation Phase Comparison

Table 4 compares cafeteria compliance of the basic criteria at baseline, mid-implementation and 2016. Since the baseline evaluation, a greater number of cafeterias are offering whole grain-rich options, offering and advertising the availability of free water, and offering and promoting at least one low sodium entree. Since mid-implementation, a greater number of cafeterias serve a variety of fruit daily and offer and promote at least one low-sodium entrée. However, also since mid-implementation, fewer cafeterias offer at least one low-fat and non-fat milk product and a greater number of cafeterias use artificial trans-fat or partially hydrogenated oils in the preparation of some of their meal items.

Table 4: Numbers of Cafeterias Observing Basic Criteria, by Year

Criteria (Required for all food service venues)	# Cafeterias		
	Baseline (n=9)	Mid (n=10)	2016 (n=9)
Whole Grain <i>Large: Do you offer two whole grain rich options daily?</i> <i>Medium: Do you offer at least one whole grain rich option daily?</i>	0	10*	9*
Vegetable <i>Large: Do you offer at least one raw, salad-type and at least one steamed, baked or grilled vegetable daily?</i> <i>Medium: Do you offer at least one raw, salad-type vegetable daily?</i>	not assessed	10*	9*
Fruit <i>Large/Medium: Do you offer at least three/two whole or sliced fruits daily?</i>	7	7	9*
Lean Protein <i>All: Do you offer at least one lean meat option such as poultry, fish, or a low-fat vegetarian option?</i>	9*	10*	9*
Low Sodium Entrée <i>All: Do you offer and promote at least one low sodium entrée?</i>	0	0	2
Deep-Fried <i>All: Do you offer no more than one deep-fried entrée option daily?</i>	8	7	5
Oils (trans-fat, partially hydrogenated oils) <i>All: Are all meal items free of artificial trans-fat or partially hydrogenated oils?</i>	not assessed	10*	6
Low Fat and Non Fat Milk Products <i>All: Do you offer at least one low-fat and one non-fat milk product?</i>	5	7	4
Water <i>All: Do you offer free water and advertise its availability?</i>	1	5	8

* All cafeterias assessed were compliant with the criteria

Additional Criteria: Beverages, Food Components, and Behavioral Economics Strategies

Large and medium food service venues must earn an additional 25 and 10 points, respectively, by implementing their choice of beverage, food component and behavioral economic approaches. Table 5 shows the total points earned for additional criteria (food/beverage components and behavioral economics strategies) by each cafeteria. Eight out of the nine cafeterias assessed earned at least the minimum required additional points, and seven cafeterias earned an equivalent or greater number of points than their mid-implementation score. Tables 6-8 present the results for food/beverages and behavioral economics separately.

Table 5: Additional Criteria Observance : Total Points

Cafeteria Code*	Mid Score	2016 Score	Change from 2015 to 2016
Medium Size Cafeterias			
J	28	47	+19
C	24	27	+3
I	24	24	0
G	19	-	n/a
E	16	34	+18
Large Size Cafeterias			
F	40	45	+5
B	30	22	-8
H	25	31	+6
A	26	33	+7
D (formerly medium sized category)	32	27	-5

* Codes assigned randomly to cafeterias

Beverage and Food Components

Table 6 lists the additional criteria for beverages and food observed by all 9 cafeterias and by none of the 9 cafeterias. Table 7 lists the proportions of cafeterias observing at least half and less than half of the additional criteria for beverages and food.

Table 6: Additional Criteria Observance for Beverages and Food: Full vs None

Full Observance (9/9 Cafeterias)
No free refills of Sugar Sweetened Beverages (SSB)* (8/8)
Offer at least one non-fried fish or seafood option per week
Offer condiments, sauces, and dressings on the side
Offer at least one oil and vinegar based salad dressing that is also low in sodium
Serve one meal per day that provides at least three of the following: (one serving of fruit, vegetables, beans or whole grains)

* Denominator for no free refills of SSB is different because only 8 cafeterias offered fountain drinks. The cafeteria that did not offer fountain drinks was not included in this analysis.

No Observance (0/9 Cafeterias)
Cup sizes no larger than 16oz
Offer only low fat (1%) and non-fat fluid milk products
For cheese, yogurt and other milk products, offer low-fat and non-fat products as the default options
Offer low-sugar cereals

Table 7: Additional Criteria for Beverages and Food: Proportional Observance by Cafeterias

Observed by more than half of cafeterias
Half size portions are available for at least half of all entrée items and this option is promoted (7/9)
Non-fried vegetables or fruit are the default side (6/8)*
Allow substitution of non-fried vegetable side dish for no extra charge and promote this option (5/7)*
Offer salad bar (6/9)
Offer healthy options with bread in place of butter (8/9)
Desserts are offered in smaller portion sizes (2oz) (6/9)
Fruit is located in close proximity to dessert options (7/9)
Observed by less than half of cafeterias
For breakfast foods, offer small portions of muffins, quick breads and bagels (3/9)
Offer at least one Washington grown food product (3/9)
Low fat (1%) or non-fat milk are default fluid milk options for café service (1/9)
Coffee service bar has milk as a default option rather than cream or half and half (1/9)
If SSBs are offered, an equal number of zero and low calorie beverages must also be offered (1/9)
Offer only 100% fruit juice with no added sugar (1/9)
Vegetable juices offered contain 230 mg or less sodium per serving (1/7)*
When grains are offered, whole grain is the default option (2/8)*
Only offer yogurt with no added caloric sweeteners or labeled as reduced/less (1/9)

* The denominator for some criteria is less than 9 because not all criteria were relevant to each cafeteria. For example, a cafeteria may not have offered a default side or may not have vegetable juice.

Behavioral Economics

Table 8 shows the criteria for behavioral economics strategies that at least half of cafeterias and less than half of cafeterias observed, indicating that the majority of behavioral economic criteria assessed was observed by less than half of the cafeterias.

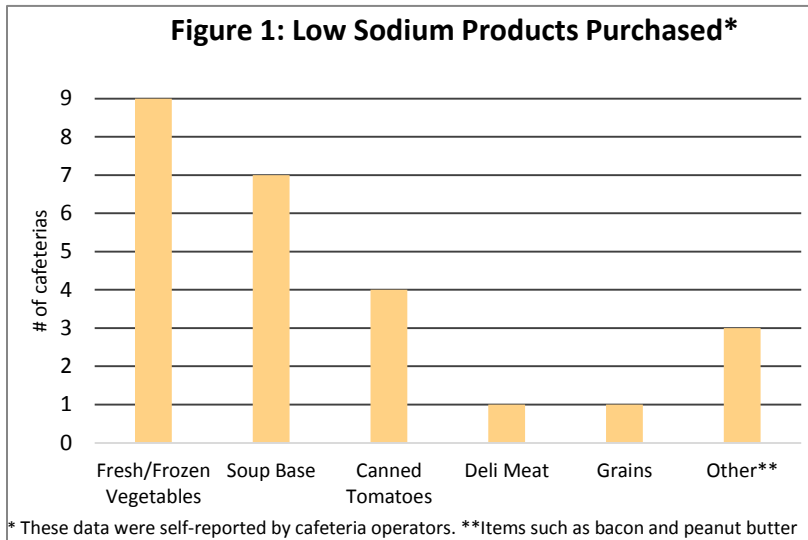
Table 8: Behavioral Economics Criteria: Proportional Observance by Cafeterias

Observed by at least half of cafeterias
At least 75% of promotion signage is for healthier items (7/9)
No marketing of deep-fried options as the feature of the day (7/9)
Observed by less than half of cafeterias
All healthier options of chips, cereal, yogurt, milk, soda, and juice are sold at an equal or lower price than equivalent item available (1/9)
Employees are trained to prompt customers to choose non-fried vegetables when ordering (1/7)*
Employees are trained to prompt customers to choose zero- and low-calorie beverages when ordering (1/3)*
Healthier items are listed first for each category of the menu (2/9)
Zero- and low-calorie beverages are listed before sugar-sweetened beverages on the menu (1/3)*
Healthier items placed more prominently – closer to customers and at eye level (4/9)

* The denominator for some criteria is less than the total number of cafeterias assessed because not all criteria were relevant to each cafeteria

Sodium

During each cafeteria assessment, the cafeteria manager was asked if he/she purchased low sodium soup bases, canned tomatoes, deli meat, fresh/frozen vegetables, grain products, or any other low sodium food products. Figure 1 shows the most frequently purchased low sodium products. Notable increases from mid-implementation were seen in the use of low sodium vegetables and soup bases. All cafeteria managers reported using primarily fresh, over frozen,



vegetables with little or no added sodium in their soups and side dishes (n=9); the majority of cafeteria managers reported purchasing low sodium soup base (n=7). Less than half of cafeteria managers reported purchasing low sodium canned tomatoes (n=4), deli meats (n=1), and grains (n=1), and less than half of cafeteria managers reported purchasing other low sodium items such as kidney beans (n=1), bacon (n=1), and peanut butter (n=1). All cafeteria managers expressed that cost is a barrier to purchasing low sodium deli meats, as low sodium deli meats cost more than regular deli meats.

Healthful vs. Non-Healthful

Researchers assessed and compared the proportion and price of healthful and non-healthful food and beverage options in cafeterias. Although these criteria are not included in the HNG, the results help to further describe the cafeteria food environments. Table 9 lists the proportion of cafeterias observing at least half, and less than half, of the healthy vs. non-healthful criteria. Table 10 compares the price of regular snack and beverage items to their healthier equivalent.

A majority of the cafeterias assessed either did not include fries or chips as the default side item, or they allowed fresh vegetables to be substituted at no additional cost. Most cafeterias also offered a non-cream based soup and all offered at least one low-fat salad dressing. However, only one cafeteria offered a whole-grain starch side with no added sauce.

Table 9: Proportion of Cafeterias Observing Healthful vs Non-Healthful Criteria

Healthful	
Observed by at least half of cafeterias ↓	Observed by less than half of cafeterias ↓
Offered ≥50% 100% unsweetened tea in fountain drink stations (5/6)*	Offered ≥50% diet sodas in fountain drink stations (0/8)*
Salad or fresh vegetables can be substituted for fries or chips at no additional cost (7/7)*	Offered ≥50% 100% fruit juice in fountain drink stations (1/4)*
Non-cream based soup available (8/9)	Whole grain starch side w/o added sauce is available (1/9)
Low-fat Dressing Available (9/9)	
Non-Healthful	
Observed by less than half of cafeterias ↓	Observed by at least half of cafeterias ↓
Fries are automatically included as a meal side (2/8)*	Less than half of the cafeterias observed the 2 non-healthful criteria (fries and chips automatically included as a meal side)
Chips are automatically included as a meal side (0/8)*	

*The denominator for some criteria is less than 9 because not all criteria were relevant to each cafeteria. For example, a cafeteria may not have offered sides for meals, a salad bar, or a fountain drink station and were therefore not included in this analysis.

Table 10: Assessment of Pricing Data of Comparable Healthy vs. Regular Items in Agency Cafeterias

Assessment of Pricing Data	# of Cafeterias Offering:						
	Chips	Yogurt	Milk	Soda	Juice	Tea	Sports Drinks
Price of healthy option < price of regular option	-	2	-	-	1	1	4
Price of healthy option = price of regular option	4	2	9	7	7	6	2
Price of healthy option > price of regular option	-	-	-	-	-	-	2
Total # of cafeterias offering both healthy and regular options	4*	4*	9	7*	8*	7*	8*

*Not all cafeterias offered both healthy and regular options, so the total number of cafeterias is less than 9. For example, some cafeterias offered regular cereal, but no healthy cereal options.

Assessment of pricing data revealed that at all cafeterias selling comparable healthy and regular chip (n=4), milk (n=9), and soda (n=7) sold these items at the same price. At the eight cafeterias that offered comparable healthy and regular juice options, healthy juice was less expensive in one cafeteria and the same price as regular juice in the other seven cafeterias. Of the seven cafeterias offering comparable unsweetened and sweetened tea, six offered unsweetened tea options that were priced the same as sweetened tea options, and one offered unsweetened tea options that were less expensive than sweetened options. At eight cafeterias offering comparable healthy sports drink options, four offered flavored water options that were less expensive than regular sports drink options, two offered flavored water options that were priced the same as regular sport drink options, and two offered flavored water options that were more expensive than regular sport drink options.

Baseline, Mid-implementation and 2016 Implementation Phase Comparison

Table 11 lists the proportion of cafeterias that offered a greater percentage of a variety of healthy food (cereal, chips, and yogurt) and beverage (milk, soda, and juice) choices at baseline, mid-implementation, and 2016 implementation phases.

Table 11: Proportion of Cafeterias Offering At Least 50% Healthy Options by Food Category at Baseline, Mid-implementation, and 2016 Implementation Phases

Category	Baseline (2014)*	Mid (2015)*	2016*
Low-sugar/High Fiber Cereal	1/5	0/4	0/4
Low-fat Chips	0/9	0/10	0/9
Low or Reduced-fat Yogurt	1/7	7/8	1/7
Skim or 1% Milk	0/9	0/8	2/9
Diet Soda	0/7	1/9	1/7
100%/Low-sodium Juice	2/9	5/9	4/9

* The denominator for some criteria is less than the total number of cafeterias assessed because not all criteria were relevant to each cafeteria. For example, a cafeteria may not have offered cereal, yogurt, or juice and were therefore not included in this analysis.

At the time of the 2016 evaluation, two of the nine cafeterias selling milk products offered a greater proportion ($\geq 51\%$) of healthy milk options. This represents an improvement from both the baseline and mid-implementation evaluations. However, only one of the seven cafeterias that sold yogurt offered a greater proportion of low or reduced-fat yogurt at the time of the 2016 evaluation. This is a decrease from the mid-implementation evaluation, at which time eight of the nine cafeterias sold yogurt, seven of which offered a greater proportion of low or reduced-fat varieties. Notably, during all three evaluation periods, none of the cafeterias offered $\geq 51\%$ of healthy chip options compared to non-healthy varieties. Overall, the proportion of healthy snacks sold in cafeterias has decreased since baseline and more than half of the cafeterias either did not offer chips, cereal, or yogurt, or sold only unhealthy varieties of these snacks. Results for beverages were mixed, with a decrease in the proportion of diet soda and 100% juice available, but an increase in the proportion of low-fat milk available.

Placement and Promotion

The final section of the Cafeteria Assessment examined the placement and promotion of healthier items. Although these are not part of the scored HNG criteria, the results help to further describe the cafeteria food environments. Table 12 shows the criteria observed by at least half, and less than half, of cafeterias. A majority of the cafeterias sold fruit and vegetables that were well-lit and appealing in appearance, and displayed signage that encouraged general healthy eating over signage that encouraged less healthy or overeating. While some cafeterias placed fruit near the point of purchase, all cafeterias placed unhealthy items near the point of purchase. Less than half of the cafeterias offered nutrition information either online or in the cafeteria, did not indicate healthier items on the salad bar, and did not highlight healthier items on their menus.

Table 12: Placement and Promotion Criteria

Healthful	
Observed by at least half of cafeterias ↓	Observed by less than half of cafeterias ↓
Cafeteria has signs or other displays that encourage general healthy eating or healthy food choices (posters on wall, signs, table tents, etc.) (8/9)	Cafeteria has other information about promotions or pricing strategies (farmers markets, discounts on healthy items, locally grown, etc.) (2/9)
Feature of the day or special combination meal is promoted (9/9)	Brochure/nutrition information is on the intranet/internet (0/9)
Fruit is well lit (9/9)	Healthier options are indicated on salad bar (Go, Slow, Whoa icons or other systems) (2/8)
Fruit is appealing in appearance (looks fresh, not bruised, etc.) (7/9)	Cafeteria identifies menu items as "healthy" or "light" (3/9)
Vegetables are well lit (8/9)	When terms "healthy" or "light" are used, standards are listed for these items (0/3)
Vegetables are appealing in appearance (looks fresh, not discolored, etc.) (9/9)	Nutrition information is posted on menu boards, brochures, or in other display areas (3/9)
Some fruit is located near the register/point of purchase (5/9)	Some vegetables are located near the register/point of purchase (2/9)
	Washington-grown products are available (4/9)
	Washington-grown products are promoted/marketed (2/9)
Non-Healthful	
Observed by less than half of cafeterias ↓	Observed by at least half of cafeterias ↓
Cafeteria has signs or displays that encourage less healthy eating or less healthy food choices (2/9)	Unhealthy items are located near cash register/point of purchase (9/9)
Cafeteria has signs or displays that encourage overeating (supersizing, all you can eat, etc.) (0/9)	

Baseline, Mid-implementation and 2016 Implementation Phase Comparisons

Table 13 shows the number of cafeterias that met each placement and promotion criteria at baseline, mid-implementation and 2016. Since the mid-implementation assessment, two cafeterias have started to display information about promotions or pricing strategies, two cafeterias have started to indicate healthier items on their salad bar, two cafeterias have started to indicate menu items as “healthy” or “light”, two cafeterias have started to display nutrition information, and two fewer cafeterias displayed signs that encouraged less healthy eating. However, no cafeterias made nutrition information available on the intra/internet and three fewer offered Washington-grown products.

Table 13: Placement and Promotion Criteria Met at Baseline, Mid-Implementation and 2016 Implementation

Criteria	# Cafeterias		
	Baseline (n=9)	Mid (n=10)	2016 (n=9)
<i>Positive Indicators</i>			
Cafeteria has signs or other displays that encourage general healthy eating or healthy food choices (posters on wall, signs, table tents, etc.)	2	8	8
Feature of the day or special combination meal is promoted	8	10*	9*
Cafeteria has other information about promotions or pricing strategies (farmers markets, discounts on healthy items, locally grown, etc.)	0	0	2
Brochure/nutrition information is on the intranet/internet	4	1	0
Healthier options are indicated on salad bar (Go, Slow, Whoa icons or other systems)	0	0	2
Cafeteria identifies menu items as “healthy” or “light”	2	1	3
When terms “healthy” or “light” are used, standards are listed for these items	1	0	0
Nutrition information is posted on menu boards, brochures, or in other display areas	1	1	3
Fruit is well lit	9*	7	9*
Fruit is appealing in appearance (looks fresh, not bruised, etc.)	6	9	7
Some fruit is located near the register/point of purchase	7	4	5
Vegetables are well lit	7	8	8
Vegetables are appealing in appearance (looks fresh, not discolored, etc.)	8	10*	9*
Some vegetables are located near the register/point of purchase	2	2	2
Washington-grown products are available	1	7	4
Washington-grown products are promoted/marketed	0	0	2
<i>Negative Indicators</i>			
Cafeteria has signs or displays that encourage less healthy eating or less healthy food choices	3	4	2
Cafeteria has signs or displays that encourage overeating (supersizing, all you can eat, etc.)	1	0	0
Unhealthy items are located near cash register/point of purchase	9*	10*	9*

* All cafeterias assessed met the indicator.

Vending

A total of 51 beverage machines and 29 snack machines were assessed for compliance with the HNG. The guidelines for vending machines require that at least 50% of vending machine products meet the healthier or healthiest criteria. Table 14 shows the number and percent of compliant vending machines in each agency during both the mid-implementation and the 2016 evaluation phases.

Table 14: Vending Machine Compliance by Agency and Year

Agency (Mid-Implementation)	Beverage Machines			Snack Machines		
	# Machines Compliant	Total # Machines	% Machines in Compliance	# Machines compliant	Total # Machines	% Machines in Compliance
Department of Health	4	10	40%	0	6	0%
Department of Services for the Blind	0	1	0%	0	1	0%
DSHS	5	20	25%	0	28	0%
Health Care Authority	2	2	100%	0	2	0%
Labor & Industries	0	3	0%	0	1	0%
Licensing	3	5	60%	0	1	0%
Natural Resource Building	3	5	60%	0	1	0%
Department of Retirement Systems	1	1	100%	0	1	0%
Department of Veteran Affairs	2	4	50%	0	2	0%
WA State Lottery	0	1	0%	0	2	0%
TOTAL	20	52	38%	0	45	0%

Agency (2016 Implementation)	Beverage Machines			Snack Machines		
	# Machines Compliant	Total # Machines	% Machines in Compliance	# Machines Compliant	Total # Machines	% Machines in Compliance
Department of Health	5	10	50%	2	5	40%
Department of Services for the Blind	0	1	0%	0	1	0%
DSHS	5	10	50%	0	5	0%
Health Care Authority	3	3	100%	0	1	0%
Labor & Industries	1	3	33%	n/a	n/a	n/a
Licensing	4	16	25%	0	13	0%
Natural Resource Building	4	1	57%	0	3	0%
Department of Retirement Systems	1	1	100%	0	1	0%
Department of Veteran Affairs	Not assessed in 2016					
WA State Lottery						
TOTAL	23	51	45%	2	29	7%

Of the agencies that submitted vending machine photographs for the 2016 evaluation, every agency except for one had at least one compliant beverage machine. Six of the eight agencies had either the same proportion or greater of compliant beverage vending machines than at the mid-implementation evaluation. DOH was the only agency that had compliant snack machines (40% of DOH snack machines were compliant). This is an improvement from mid-implementation, during which time no agency had

compliant snack machines. It is important to note that the mid-implementation and 2016 implementation period vending machine samples were not matched at the individual machine level and that different machines within each agency may have been evaluated. Furthermore, some snack vending items that were classified as non-compliant during mid-implementation were re-classified as compliant for 2016. These items have been re-classified in collaboration with the vendor, who expressed their obligation to buy products that meet all of their customer needs, not just the needs of state facilities. As such, the vendor was not able to stock certain items or find products that met the nutrition standards. In recognition of these difficulties, snack vending items that were close to meeting (e.g. 255 calories instead of 250 calories) the HNG were labeled as exceptions and marked as compliant. The 2016 data displayed in the tables below reflect this change. Had these items not been reclassified as compliant, the two DOH snack machines that were recorded as compliant during the 2016 implementation evaluation would not have been compliant.

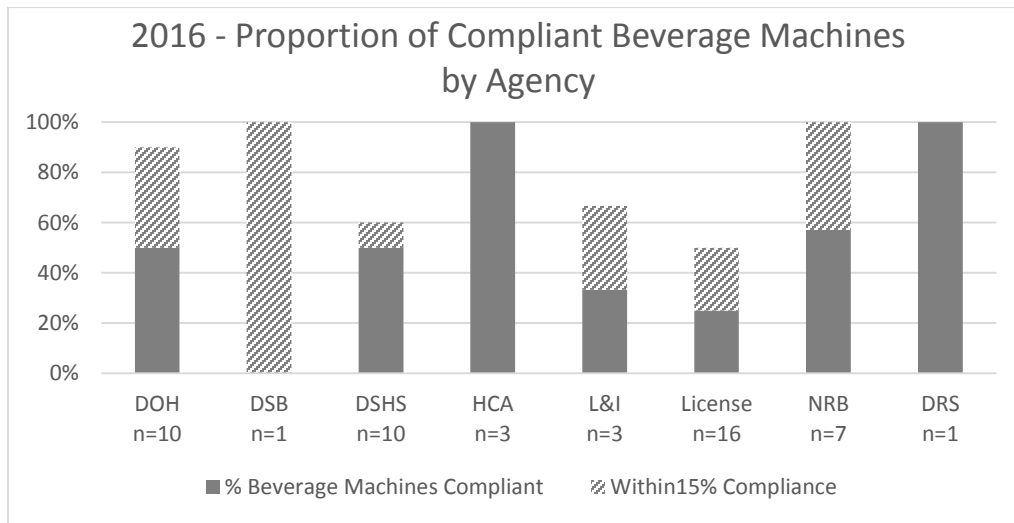


Figure 2a

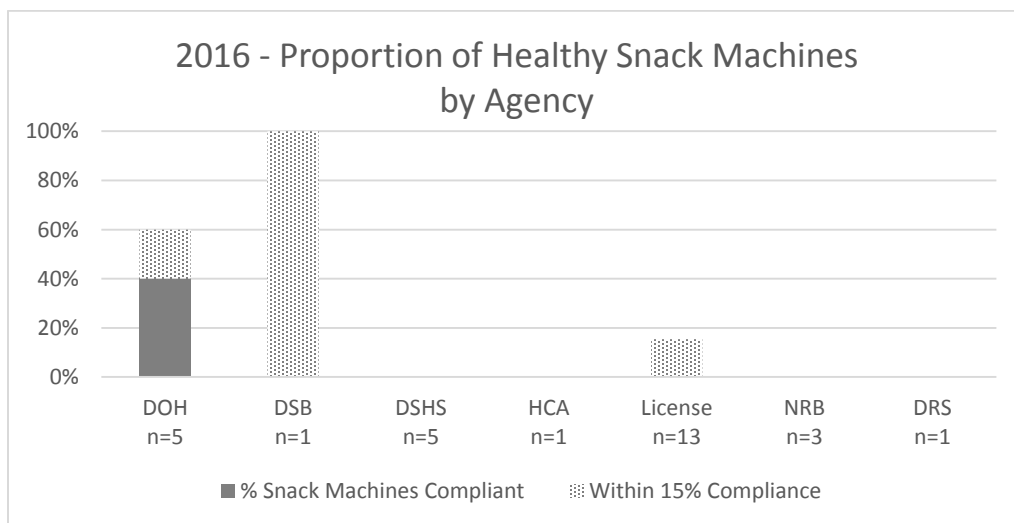


Figure 2b

Although less than half of all beverage vending machines assessed in 2016 were compliant, 73% of the machines were within 15% of compliance (Figure 2a). Of all snack vending machines assessed 2016, 21% of the machines were within 15% of compliance (Figure 2b).

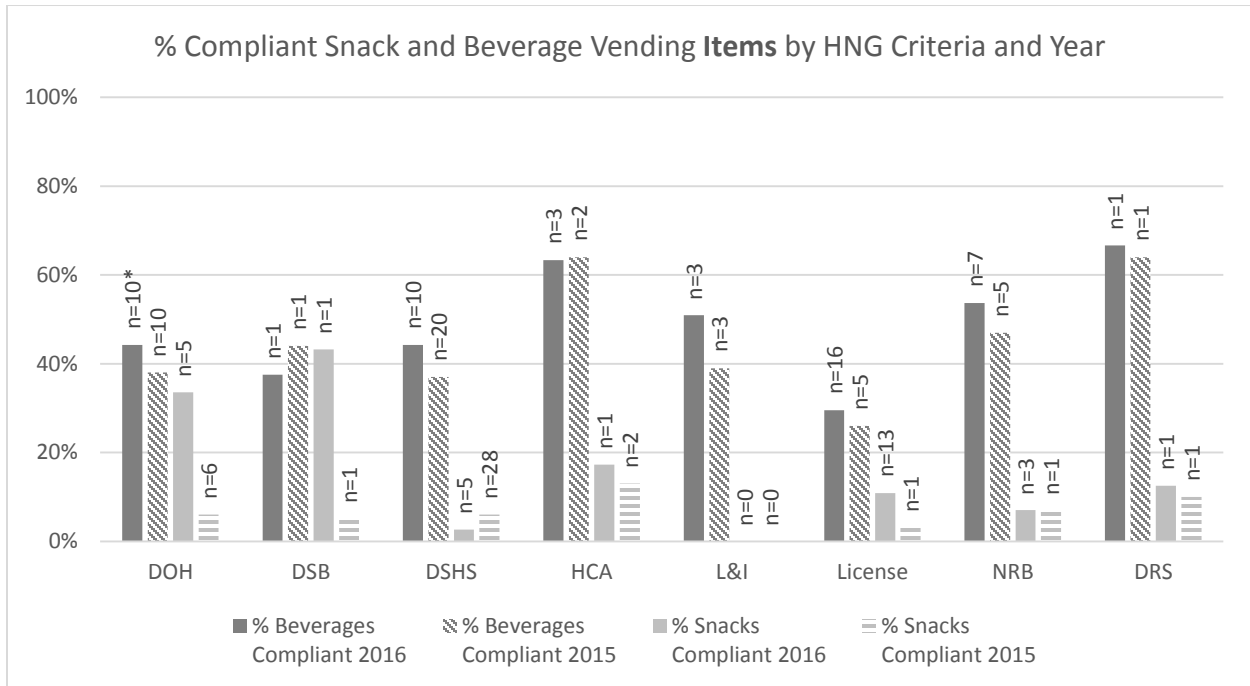
Table 15 shows the percentage of HNG-compliant snack and beverage items by agency, while Table 16 and Figure 3 compare the percentage of HNG-compliant items from mid-implementation to 2016. These numbers represent the total number of snack and beverage items from all vending machines analyzed. The percent of vending machine snacks that are compliant, per agency, ranges from 3%-43%, with an average snack compliance of 15%. This is an increase from the average mid-implementation compliance rate of 9%. The 2016 data displayed in the tables below include snack items that were reclassified, as discussed above. Although this re-classification inflated the apparent improvement from mid-implementation to 2016, a greater percentage of compliant snack vending machine items would have been noted even in the absence of this re-classification. The percent of vending machine beverages that are compliant, per agency, ranges from 30%-67%, with an average beverage compliance rate of 43%. This also represents an increase from the mid-implementation compliance rate of 39%.

Table 15: Percent Compliant Snack and Beverage **Items** By Agency, 2016

Agency	# of Machines	# of Items	% Items Compliant by HNG Criteria
Dept. of Health	5	173	35%
Dept. of Services for the Blind	1	37	43%
DSHS	5	151	3%
Health Care Authority	1	29	17%
Dept. of Labor and Industries	0	-	n/a
Dept. of Licensing	13	443	11%
Natural Resources	3	100	7%
Dept. of Retirement Services	1	40	13%
Total Snacks	29	973	15%
Dept. of Health	10	181	44%
Dept. of Services for the Blind	1	8	38%
DSHS	10	138	44%
Health Care Authority	3	60	63%
Dept. of Labor and Industries	3	55	51%
Dept. of Licensing	16	264	30%
Natural Resources	7	95	54%
Dept. of Retirement Services	1	9	67%
Total Beverages	51	810	43%

Table 16: Percent Compliant Snack and Beverage Items by Agency and Year

Agency	% Compliant by HNG Criteria (2015)	% Compliant by HNG Criteria (2016)
Snack Vending		
Dept. of Health	6%	35%
Dept. of Services for the Blind	5%	43%
DSHS	6%	3%
Health Care Authority	13%	17%
Dept. of Labor and Industries	n/a	n/a
Dept. of Licensing	3%	11%
Natural Resources	7%	7%
Dept. of Retirement Services	10%	13%
Total Snacks	6%	15%
Beverage Vending		
Dept. of Health	38%	44%
Dept. of Services for the Blind	44%	38%
DSHS	37%	44%
Health Care Authority	64%	63%
Dept. of Labor and Industries	39%	51%
Dept. of Licensing	26%	30%
Natural Resources	47%	54%
Dept. of Retirement Services	64%	67%
Total Beverages	39%	43%



* Indicates the number of machines assessed at each agency

Figure 3

Micro-Markets

A total of five micro-markets were assessed for compliance with the HNG. The guidelines for micro-markets state that 25% of grab-n-go entrees and 50% of snacks and beverages present must meet healthy nutrition criteria to be compliant. The micro-market nutrition criteria for snacks and beverages was the same as the criteria used to assess vending machine compliance. Snack and beverage items were categorized as healthiest, healthier, or limited based on calories, sugar, fat, whole grain, and sodium criteria. Grab-n-go entrée items were categorized as healthy or limited based on calories, fat, sodium and whole grain criteria. Table 17 shows agency micro-market compliance when assessed in July 2016. Three micro-markets beverage sections were compliant, but no entrée or snack sections were compliant.

Table 17: Proportion of Compliant (healthiest plus healthier) vs. Limited Items Available for Sale at Agency Micro-markets (n=5, assessed in July 2016)

Agency	% Compliant	% Limited	Compliance (√=meets HNG)
ENTREES (25% must meet HNG)			
Dept. of Health (TC2) *	3%	97%	
Dept. of Health (TC3)	23%	77%	
Employment Security Dept. *	10%	90%	
Dept. of Labor and Industries *	13%	87%	
Health Care Authority	8%	93%	
SNACKS (50% must meet HNG)			
Dept. of Health (TC2) *	49%	51%	
Dept. of Health (TC3)	31%	69%	
Employment Security Dept. *	29%	71%	
Dept. of Labor and Industries *	34%	66%	
Health Care Authority	33%	67%	
BEVERAGES (50% must meet HNG)			
Dept. of Health (TC2) *	50%	50%	√
Dept. of Health (TC3)	30%	70%	
Employment Security Dept. *	58%	42%	√
Dept. of Labor and Industries *	61%	39%	√
Health Care Authority	30%	70%	

* Matched micro-markets assessed during both the mid-implementation and 2016 implementation phase evaluations

While none of the micro-market grab-n-go entrée or snack sections were compliant at the time of the 2016 evaluation, some micro-markets were closer to being in compliance with HNG than others. Figures 5-7 show the additional portion of compliant entrées, snacks, and beverages needed to be in compliance with the HNG at each micro-market assessed in 2016.

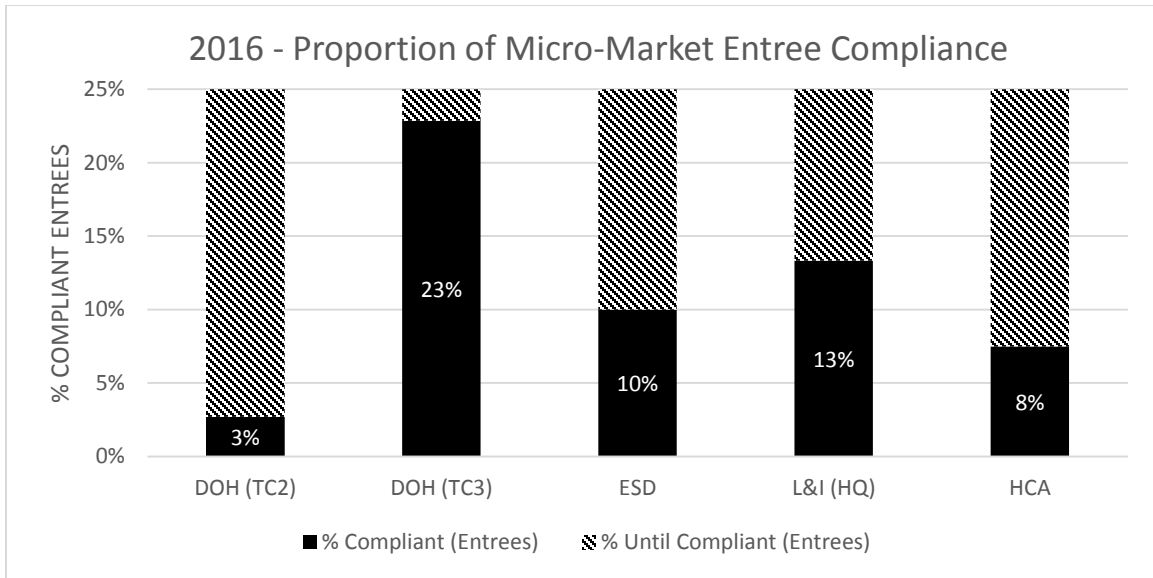


Figure 4

Figure 4 shows the proportion of healthy grab-n-go entrées available for sale at agency micro-markets in July 2016 (solid) and the additional proportion of healthy grab-n-go entrées needed for micro-markets to become compliant (striped). One micro-market was $\leq 5\%$ away from entrée section compliance, three micro-markets were $\leq 20\%$ away from entrée section compliance, and one micro-market was $>20\%$ away from entrée section compliance.

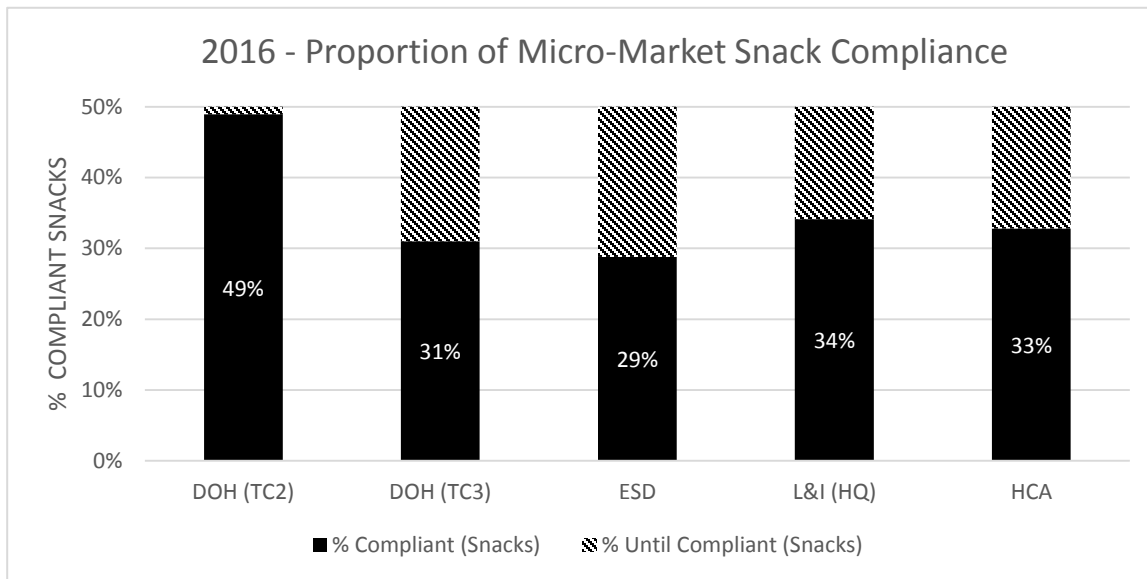


Figure 5

Figure 5 shows the proportion of compliant snack items available for sale at agency micro-markets in July 2016 (solid) and the additional proportion of compliant snack items needed for micro-market snack sections to become compliant (striped). One micro-market was $\leq 5\%$ away from snack section

compliance, three micro-markets were $\leq 20\%$ away from snack section compliance, and one micro-market was $>20\%$ away from snack section compliance.

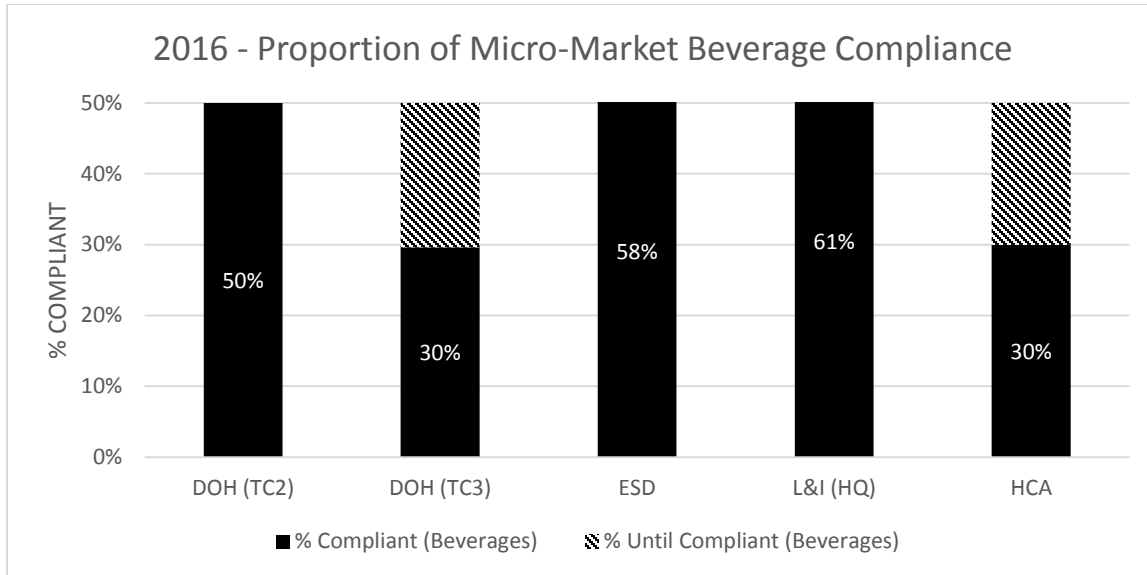


Figure 6

Figure 6 shows the proportion of compliant beverage items available for sale at agency micro-markets in July 2016 (solid) and the proportion of compliant beverage items needed for micro-markets to become compliant (striped). Three micro-market beverage sections were compliant, and two micro-market beverage sections were $\leq 20\%$ away from compliance.

Table 18: Top 10 Micro-market Product Sales between April – July 2016 of Grab-n-go Entrées, Snacks, and Beverages by Agency * indicates healthy items

	SNACKS	ENTREES	BEVERAGES
L&I (H1Q)	Tillamook Cheddar Cheese Squares Frigo String Cheese Mozzarella* Wilcox Hard Boiled Eggs* Wilcox Organic Hard Boiled Eggs* Reeses Peanut Butter Cups Snickers Chocolate Pudding Cup Cheetos Jalapeno Peanut M&M's (King Size) Rold Gold Pretzel	Lunchable Ham & Swiss Sabra Hummus Classic Lunchable Turkey & Cheddar Sabra Hummus Roasted Garlic Napoleon Smoked Turkey Swiss Croissant Caesar Salad with Grilled Chicken* Napoleon Italian Combo Panini Tortellini Pasta Salad Napoleon Dave's Killer Blues Turkey Breast & Provolone Go Picnic Salami and Cheese	Starbucks Doubleshot Vanilla Starbucks Refreshers Strawberry Lemonade Red Bull (Sugar Free)* Talking Rain Ice Black Raspberry* 5 Hour Energy Extra Strength* Talking Rain Lemon Lime * Canada Dry Ginger Ale Darigold Strawberry Milk Arrowhead Water* Pure Leaf Unsweetened Black Tea*
HCA	Tillamook Cheddar Cheese Squares Cheetos Crunchy Frigo String Cheese Mozzarella* Wilcox Hard Boiled Eggs* Fritos Chili Cheese Peanut M&M's Snickers Ice Cream Bar Fritos Regular Ruffles Cheddar & Sour Cream Plain M&M's	Chicken/App/Walnut/Cran Salad Tortellini Pasta Salad Egg Salad Wedge Lunchable Turkey & Cheddar Lunchable Ham & Swiss Protein Pack Turkey Colby* Vegetarian Hummus Wrap* Ruiz Bean & Cheese Burrito Sabra Hummus Roasted Garlic Napoleon Smoked Turkey Swiss Croissant	Darigold Chocolate Milk Smith Brothers 2% Half Pint White Milk Naked Green Machine Naked Blue Machine Darigold Strawberry Milk Naked Mighty Mango Smith Brothers Fat Free Half Pint White Milk* Naked Berry Blast Real Coconut Water* Silk Dark Chocolate Almond Milk
DOH (TC2)	Tillamook Cheddar Cheese Squares Frigo String Cheese Mozzarella* Peanut M&M's Ruffles Cheddar & Sour Cream Darigold Cottage Cheese Baked Ruffles Cheddar & Sour Cream* Wilcox Hard Boiled Eggs* Twix Bar Rold Gold Pretzels Lays Regular	Tortellini Pasta Salad Lunchable Ham & Swiss Lunchable Turkey & Cheddar Sabra Hummus Roasted Garlic Nissin Chicken Cup Noodles Egg Salad Wedge Napoleon Dave's Killer Blues Turkey Breast & Provolone Napoleon Black Forest Ham & Swiss Croissant Napoleon Turkey & Cheddar Hoagie Hot n Ready Sausage Egg Croissant	Smith Brothers 2% Half Pint White Milk Snapple Peach Diet Tea* Canada Dry Ginger Ale Talking Rain SE Tangerine* Arrowhead Water* Talking Rain Lemon Lime* Red Bull (Sugar Free)* Pure Leaf Unsweetened Black Tea* Smith Brothers Fat Free Half Pint White Milk* Darigold Chocolate Milk
DOH (TC3)	Tillamook Cheddar Cheese Squares Ruffles Original Wilcox Hard Boiled Eggs* Blue Diamond Smokehouse Almonds Twix Bar Blue Diamond Wasabi Almonds Peanut M&M's Lays Regular Pringles Original Chocolate Pudding Cup	Baked Potato w/Cheddar & Bacon Kale Broccoli Slaw & Chicken Salad* Lunchable Turkey & Cheddar Curry Chicken Tortellini Pasta Salad Bacon Breakfast Burrito Sabra Hummus Roasted Garlic Chicken/App/Walnut/Cran Salad Egg Salad Wedge Lunchable Ham & Swiss	Smith Brothers 2% Half Pint White Milk Smith Brothers Fat Free Half Pint White Milk* Darigold Chocolate Milk Canada Dry Ginger Ale Darigold Strawberry Milk Cherry Coke Pibb Xtra Real Coconut Water* Naked Green Machine Dasani Water*
ESD	Tillamook Cheddar Cheese Squares Payday Fritos Regular/Chili Cheese Cheetos Crunchy/Jalapeno Ruffles Cheddar & Sour Cream Frigo String Cheese Mozzarella* Darigold Cottage Cheese Nemos Frosted Carrot Cake Lays Regular Snickers	Ruiz Chicken Cheese Chimichangas Lunchable Turkey & Cheddar/Ham & Swiss Tortellini Pasta Salad Hot n Ready Sausage Egg Bagel Sabra Hummus Roasted Garlic Hot n Ready Sausage Egg Croissant Sabra Hummus Classic Nissin Chicken Noodles Don Miguel Beef & Cheese Burrito Protein Pack Turkey Colby*	Canada Dry Ginger Ale Smith Brothers 2% Half Pint White Milk Starbucks Refreshers Blueberry Acai San Pellegrino Limonata Starbucks Mocha Frappuccino Snapple Kiwi Strawberry San Pellegrino Aranciat Arrowhead Water* Talking Rain Ice Black Raspberry* Snapple Diet Lemon Tea*

Table 18 shows the top 10 micro-market product sales of grab-n-go entrées, snacks, and beverages by agency between April and July 2016. The most frequently purchased snacks included cheese squares/string cheese, hard boiled eggs, and Cheetos®; the most frequently purchased entrées were Lunchables®, Avanti Market Tortellini Pasta Salad®, and hummus & pretzels; the most frequently purchased beverages were 2% white milk, Canada Dry Ginger Ale®, and 1% chocolate/strawberry milk.

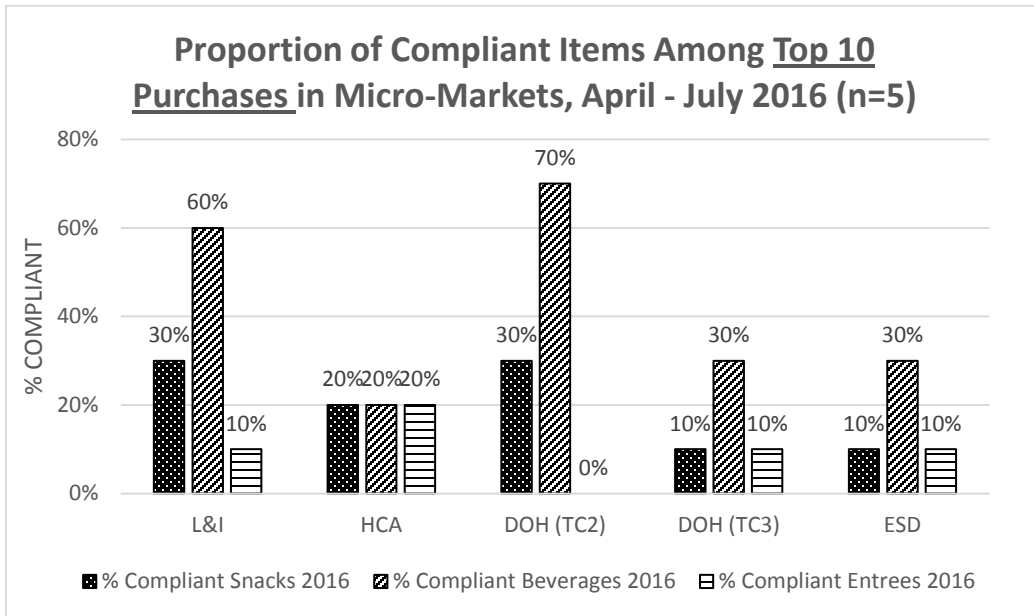


Figure 7

Figure 7 shows the proportion of top 10 sales of grab-n-go entrées, snacks, and beverages that are compliant. The proportion of compliant beverages purchased in top 10 sales items is higher, on average, than compliant snacks or entrées.

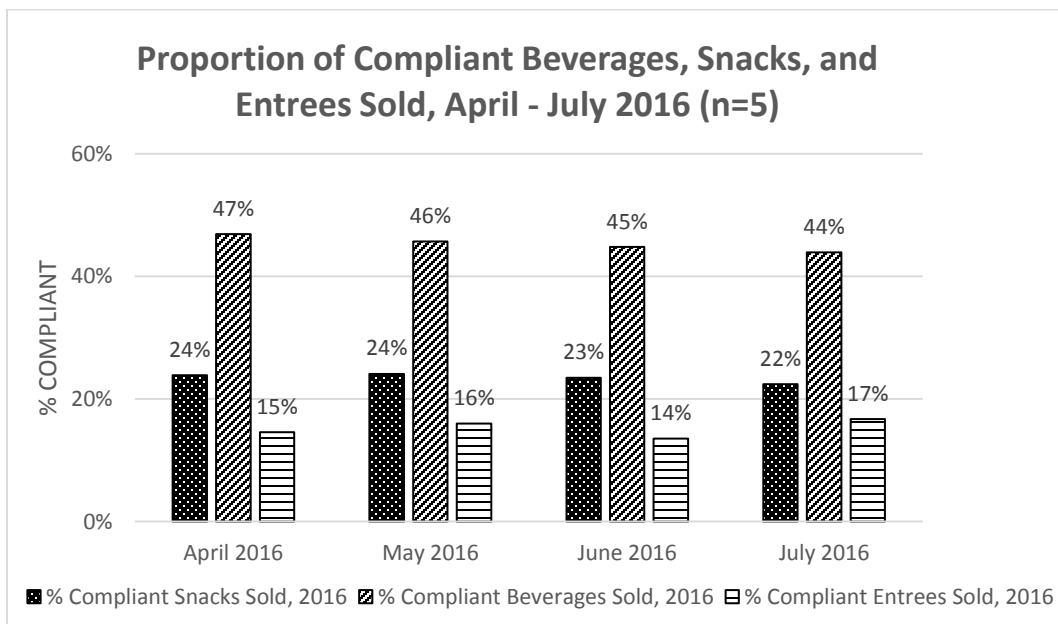


Figure 8

Figure 8 shows the sales (April – July 2016) of all grab-n-go entrées, snacks, and beverages meeting the healthy criteria at each micro-market. Compliant beverages are sold, on average, more frequently than compliant entrées or snacks. Compliant entrées are sold least frequently.

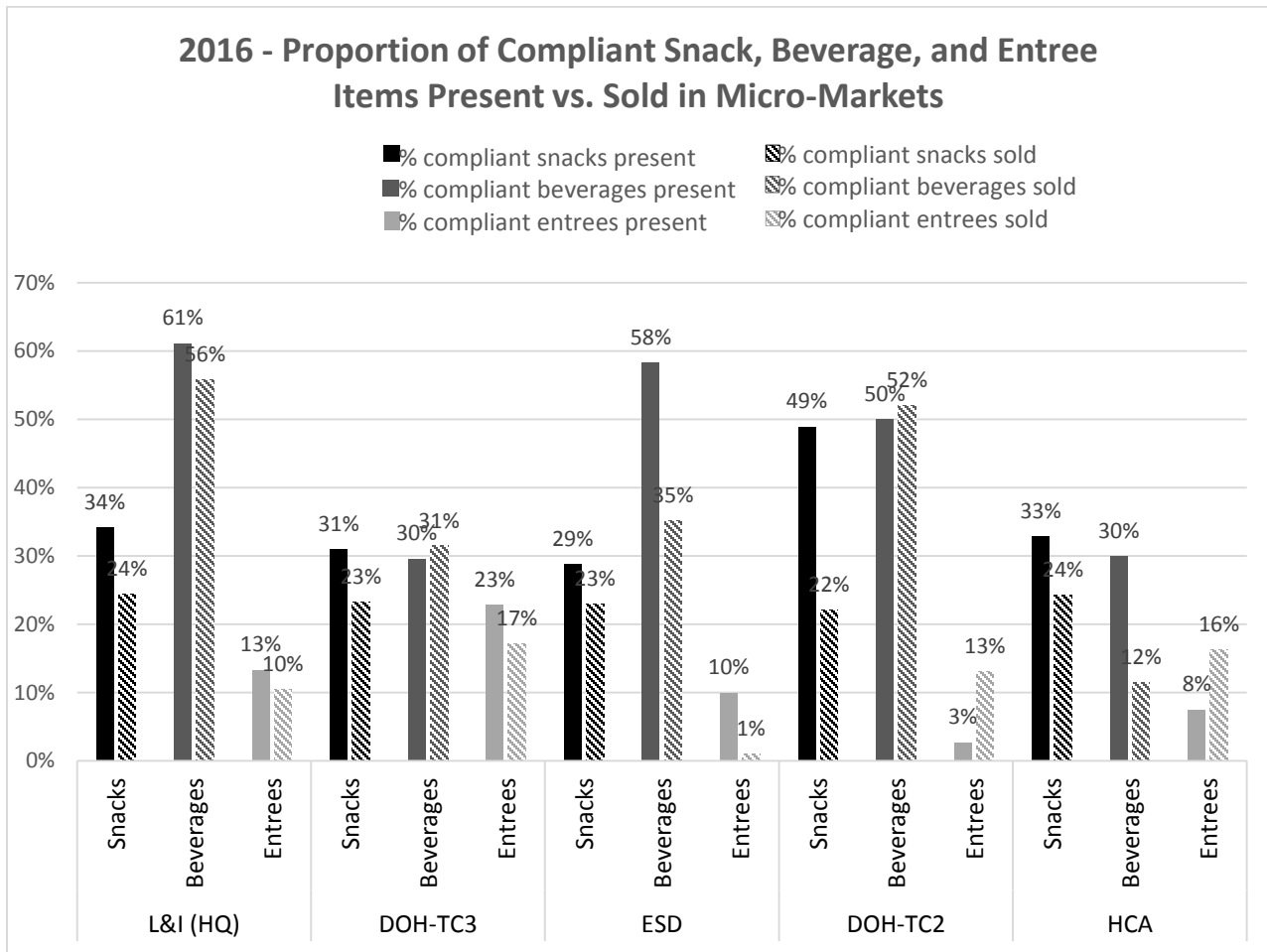


Figure 9

Figure 9 shows the proportion of compliant snacks, beverages, and entrées present at each micro-market (assessed in July) versus the proportion of sales (July sales) of these items. At all five micro-markets, the proportion of compliant snacks present was higher than the proportion of compliant snacks sold. At three of the five micro-markets, the proportion of compliant entrées present was higher than the proportion of compliant entrées sold. Similarly, at three micro-markets, the proportion of compliant beverages present was higher than the proportion of compliant beverages sold.

Table 19: 2015 vs. 2016 Percent Compliant Entrée, Snack, and Beverage Items in Micro-Markets (n=3)¹

Agency	% Healthiest (2015)	% Healthiest (2016)	% Change	% Healthier (2015)	% Healthier (2016)	% Change	% Limited (2015)	% Limited (2016)	% Change
ENTREES									
Dept. of Health (TC2)	37%	3%	-34% ³				63%	97%	34% ³
Employee Services Dept. ²	4%	10%	6%*				96%	90%	-6%*
Dept. of Labor and Industries	9%	13%	4%*				91%	87%	-4%*
SNACKS									
Dept. of Health (TC2)	15%	19%	4%*	19%	30%	11%*	66%	51%	-15%*
Employee Services Dept. ²	11%	10%	-1%	17%	19%	2%*	72%	71%	-1%*
Dept. of Labor and Industries	14%	11%	-3%	18%	23%	5%*	69%	66%	-3%*
BEVERAGES									
Dept. of Health (TC2)	26%	25%	-1%	28%	25%	-3%	46%	50%	4%
Employee Services Dept. ²	35%	25%	-10% ⁴	9%	33%	24%*	57%	42%	-15%*
Dept. of Labor and Industries	26%	22%	-4%	29%	39%	10%*	45%	39%	-6%*

*Represents an improvement since mid-implementation

¹The micro-market in DOH (TC3) opened March 28, 2016 and the micro-market in HCA opened on April 19, 2016, so neither market was included in the 2015 mid-implementation evaluation.

²In the mid-implementation evaluation, the micro-market in the Employment Security Dept. was erroneously reported inside of Department of Transportation.

³When comparing compliant grab-n-go entrées available for sale at DOH (TC2) during mid-implementation and 2016, researchers identified some entrée items that were erroneously coded as compliant, rather than non-compliant, during the mid-implementation evaluation. Consequently, entrée compliance at DOH (TC2) during mid-implementation was overstated. After recoding the entrée items available for sale at the DOH (TC2) micro-market during mid-implementation, the proportion of healthy items sold in the micro-market was actually 16%, not 37% as reported. Therefore, the real change in grab-n-go entrée compliance at DOH (TC2) between mid-implementation and the 2016 evaluation is -13%, not -34%.

⁴When comparing compliant beverages available for sale at the three micro-markets assessed in 2015, researchers identified some beverage items that were erroneously coded as compliant, rather than non-compliant, during the mid-implementation evaluation. Consequently, beverage compliance was overstated. The decrease in the proportion of healthiest beverages sold at Employee Service Dept. between mid- and the 2016 evaluation phase may not be a real change.

Table 19 shows that between the mid-implementation and 2016 evaluations, the proportion of healthy (healthiest and healthier) grab-n-go entrée items available for sale increased at two of the three micro-markets; the proportion of healthy snack items available for sale increased at all three of the micro-markets, and the proportion of healthy beverage items available for sale increased at two of the three micro-markets.

Employee Survey

A total of 2,706 respondents from 8 agencies participated in the electronic employee survey. Table 20 shows the *number* of respondents from each agency and Figure 10 shows the *proportion* of respondents by agency. The employee survey was voluntary and employees could skip any question, so the number of respondents per question varied.

The results of the employee survey are reported aggregately (across all agencies) and stratified by building/agency. The survey results that are reported by building/agency do not include data from respondents who identified their building as OB2 (n=5) or UI (n=47) (See Table 20). However, results that are reported aggregately include data from respondents who identified their building as OB2 and UI. Respondents from OB2 and UI are excluded in the stratified analysis because the final survey was not administered to OB2, so it is likely that respondents incorrectly identified their building. Additionally, UI represents respondents who did not identify their building/agency.

Table 20: Number of respondents by building/agency

Building/Agency	Building/Agency Abbreviation	Number of Responses
Department of Ecology (Lacey)	DoE	474
Department of Health (Tumwater)	DOH	477
Department of Transportation Headquarters (Olympia)	DOT	264
ELG Building (Tumwater)	ELG	342
Highway Licensing Building (Olympia)	HLB	192
Labor and Industries (L&I) Headquarters (Tumwater)	L&I (HQ)	558
Labor and Industries (L&I) Town Center 3 (Tumwater)	L&I (TC3)	59
Natural Resources Building (Olympia)	NRB	288
Office Building 2 (Olympia) ¹	OB2	5
Respondent did not specify their building/agency (UI) ²	UI	47
Total Responses		2,706

¹ The final survey was not administered to OB2, so it is likely that these respondents incorrectly identified their building.

² 47 respondents did not specify their building/agency.

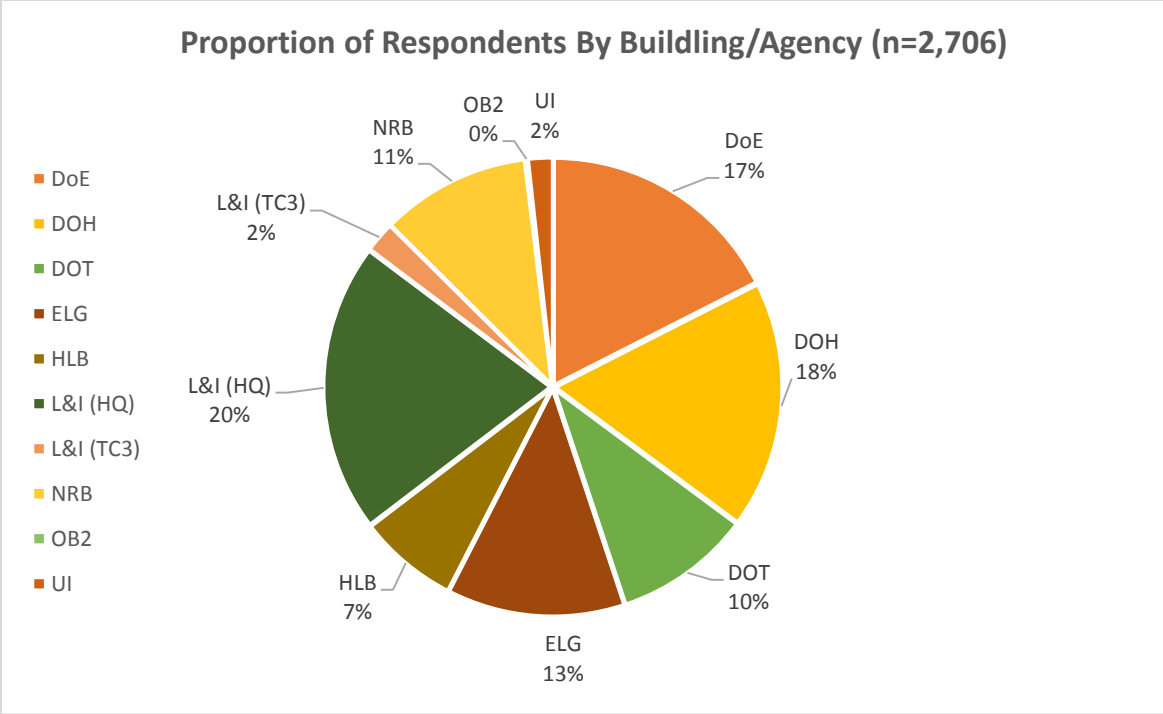


Figure 10

General Employee Perceptions of Healthy Food Options

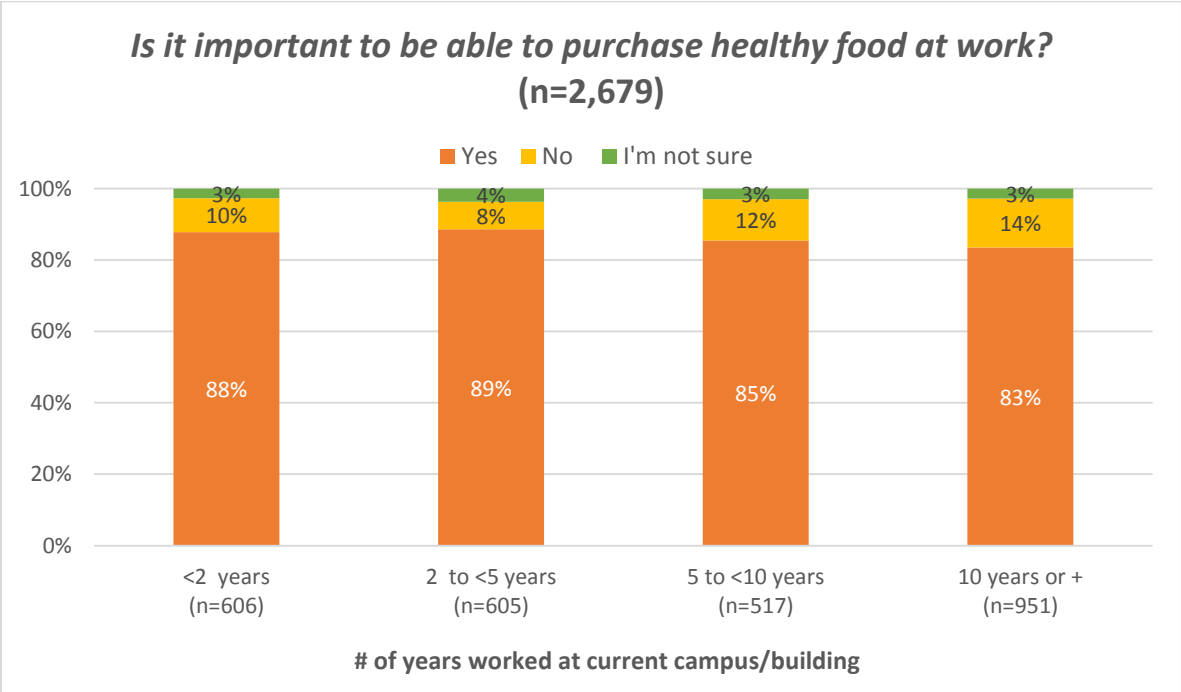


Figure 11

Figure 11 shows that the majority (86%) of respondents, regardless of the number of years worked in their current building/agency, agree that it is important to be able to purchase healthy food at work.

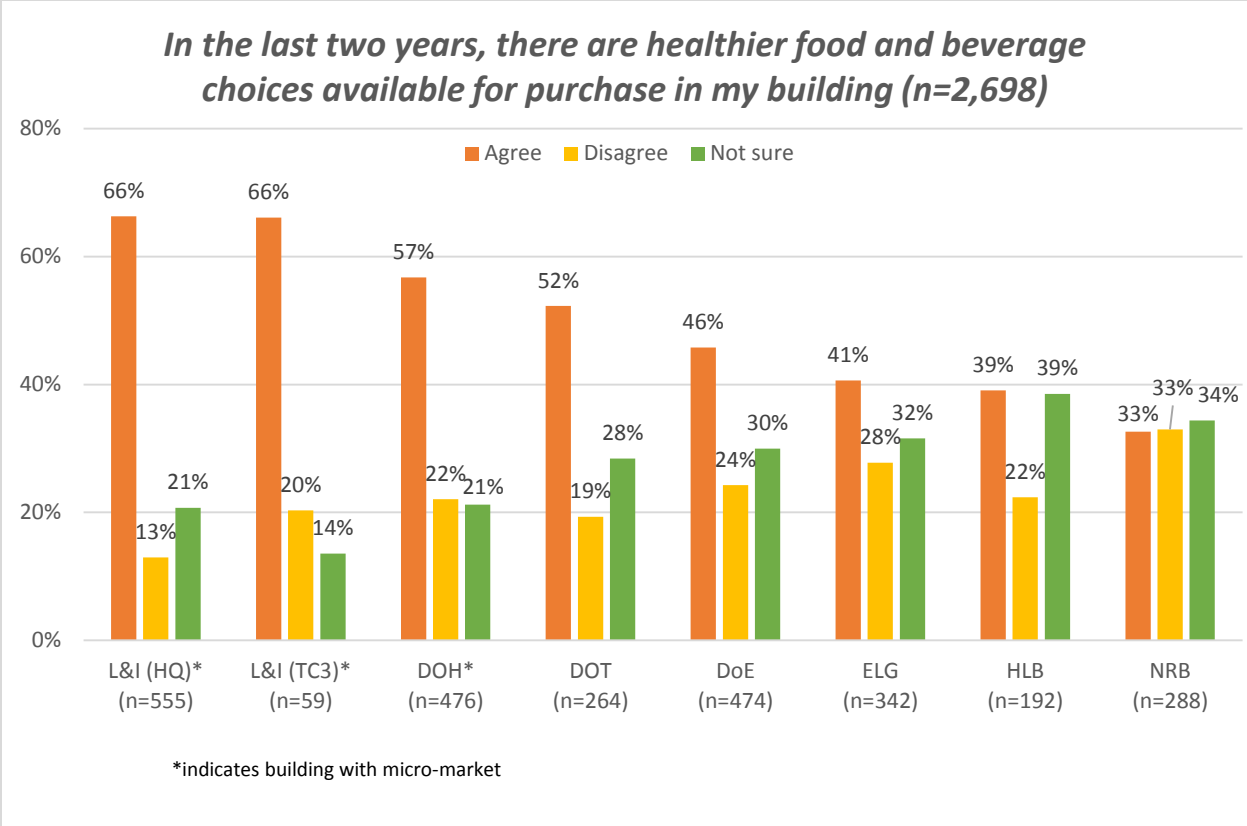


Figure 12

Figure 12 shows that the highest proportion of respondents who agree that there are healthier food and beverage choices available for purchase in their building in the last two years work at L&I-HQ and L&I-TC3. The lowest proportion of respondents who agree that there are healthier food and beverage options available for purchase in their building work at NRB. Two (L&I-HQ and DOH) of the four buildings/agencies with the highest proportion of respondents who agree that there are healthier food and beverage choices available for purchase have a micro-market in their building.

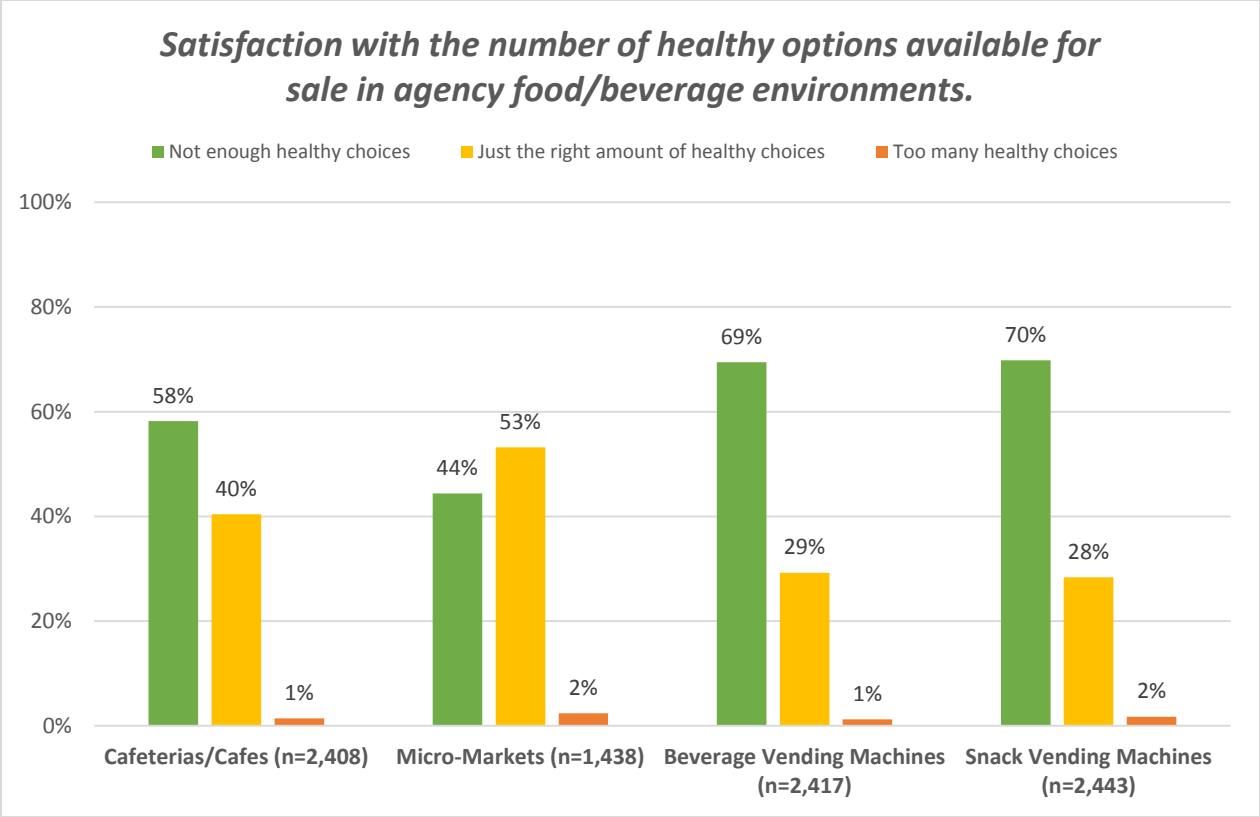


Figure 13

Figure 13 shows that >50% of respondents agree that there are not enough healthy choices in agency cafeterias/cafés and in **beverage** and **snack** vending machines; >50% of respondents agree that there are just the right amount of healthy choices in agency micro-markets; and <5% of respondents agree that there are too many healthy choices available in agency cafeterias/cafes, micro-markets, and **beverage** and **snack** vending machines.

During working hours, how often do you buy food or beverages at a location other than your building?

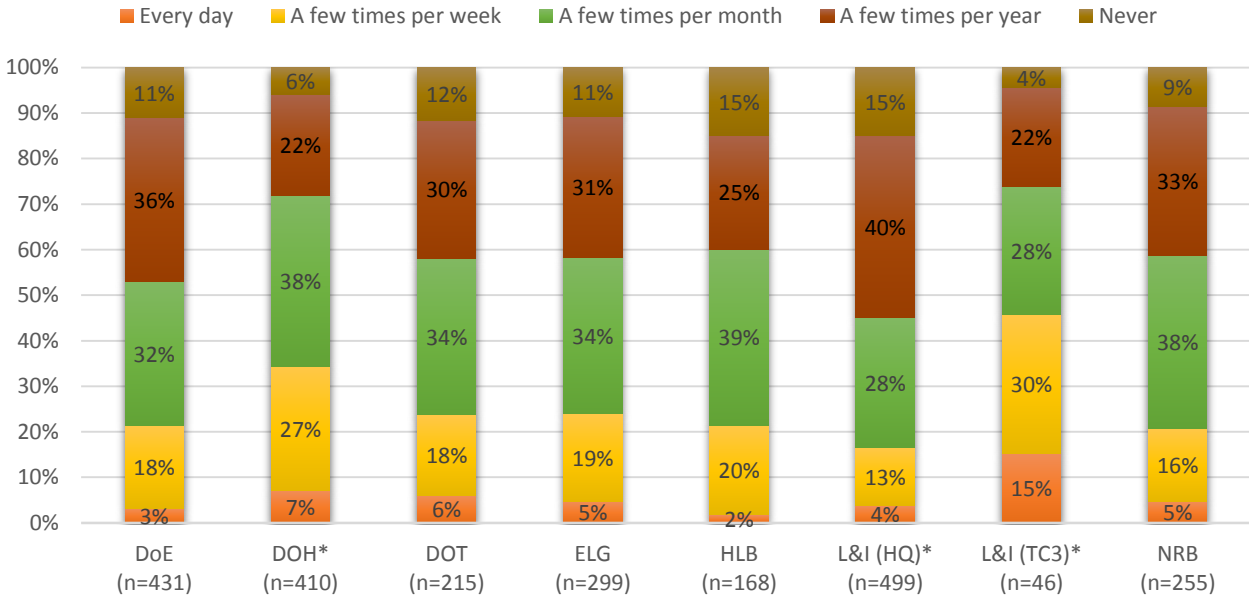


Figure 14 * indicates building with a micro-market

Figure 14 shows that, on average, respondents reported purchasing food or beverages at a location other than their building every day or a few times per week, but are more likely to purchase food or beverages at a location other than their building a few times per month, year, or never.

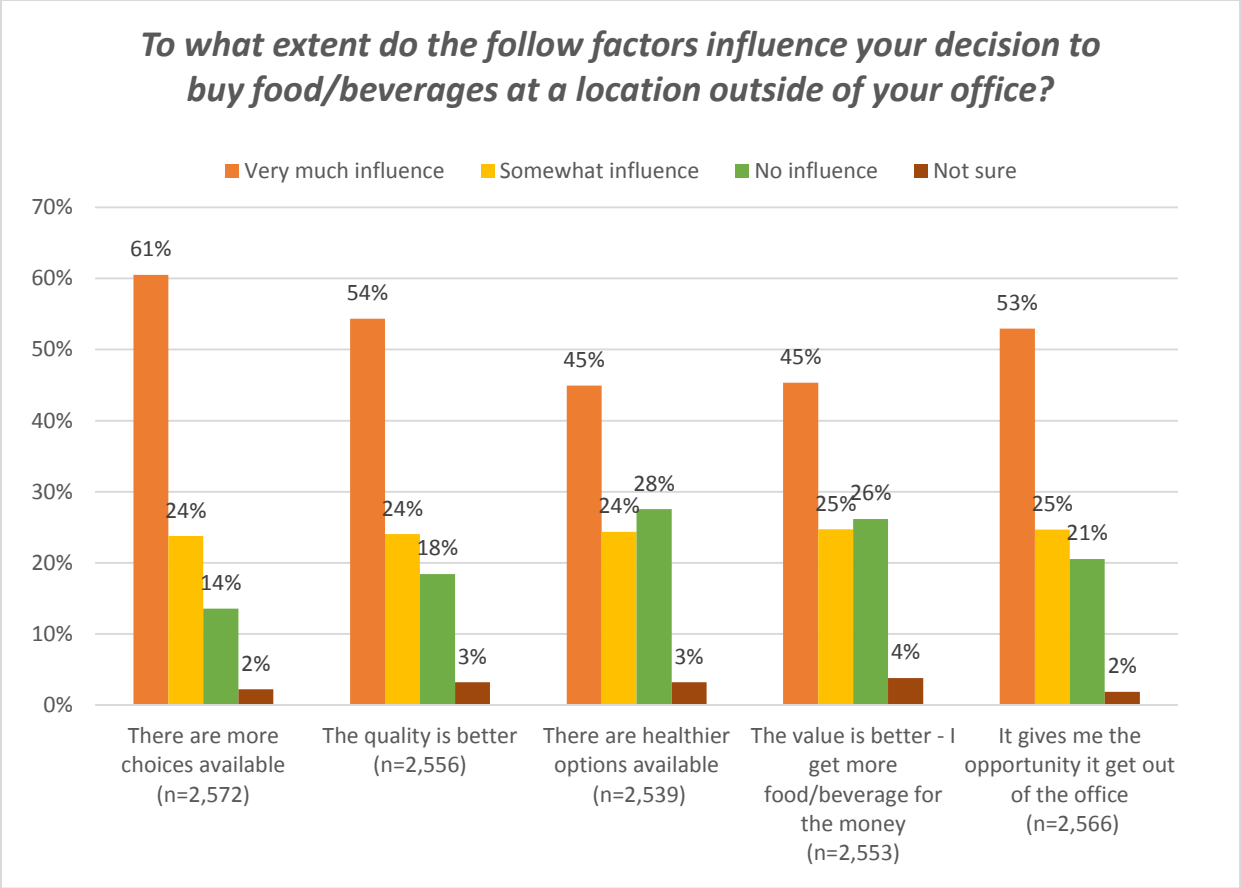


Figure 15

Figure 15 shows that the majority of respondents who reported buying food or beverages at a location outside of the office during working hours are *very much* or *somewhat* influenced by the following factors: there are more choices available (85%), the quality is better (78%), it gives me the opportunity to get out of the office (78%), the value is better (70%), and there are healthier options available (69%).

Survey Results: Factors influencing food choices at cafeteria/cafes, micro-markets, and snack and beverage vending machines

Cafeterias

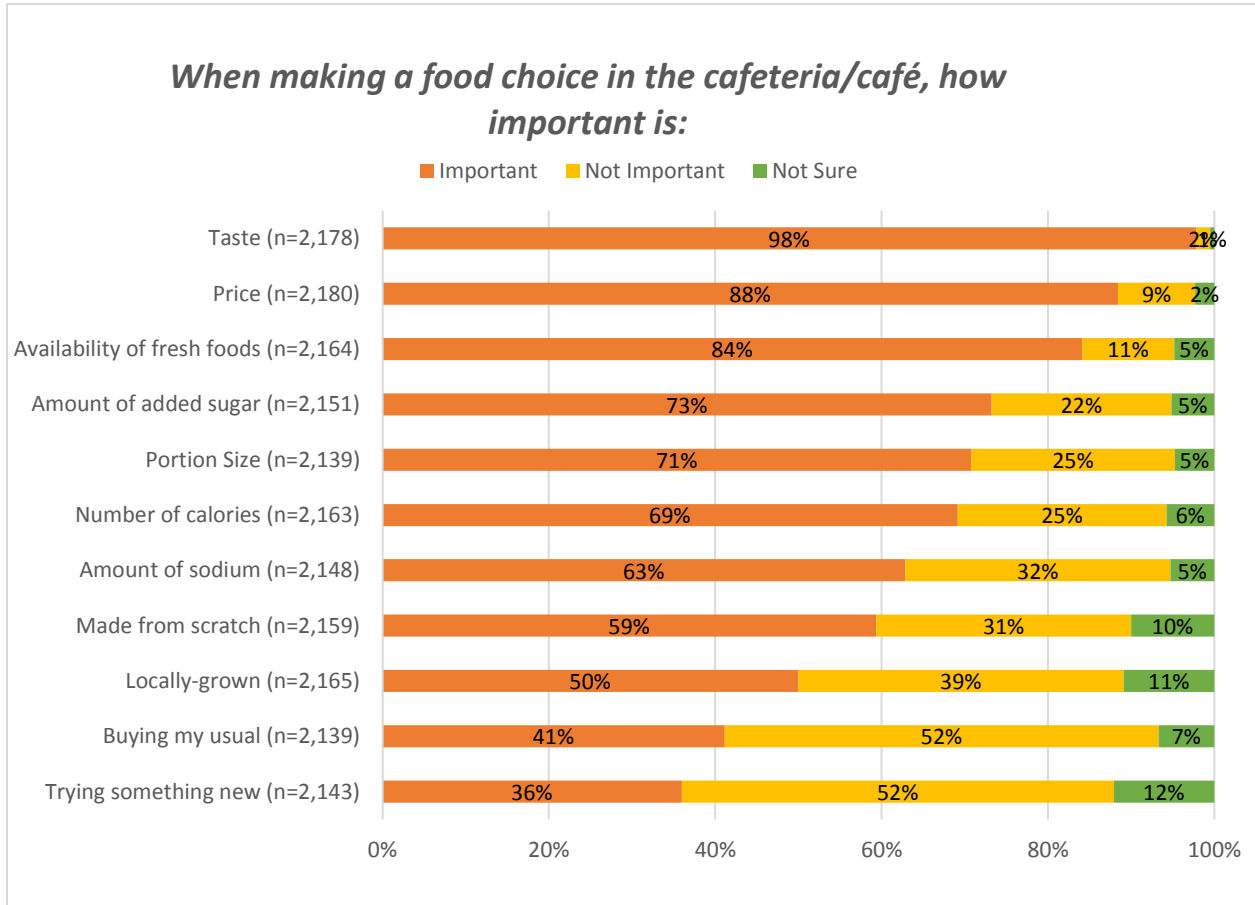


Figure 16

Figure 16 shows that the top three most important factors to respondents when making a food choice in the cafeteria are taste, price, and the availability of fresh foods. The three least important factors to survey participants when making a food choice in the cafeteria are trying something new, buying their usual choice, or the availability of locally-grown food products.

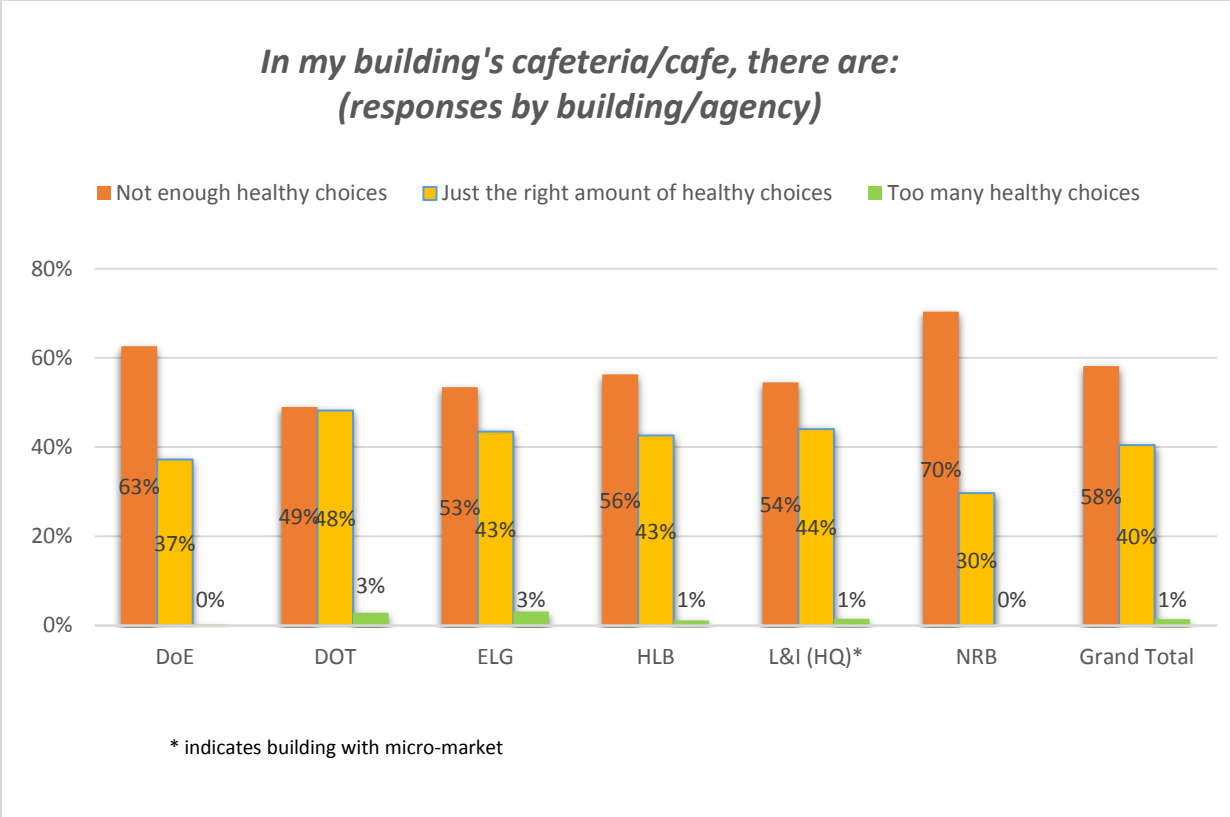


Figure 17

Figure 17 shows that >50% of survey participants at NRB, DoE, DOH, HLB, L&I-HQ, L&I-TC3, and ELG feel that there are not enough healthy choices in their building’s cafeteria/café. Conversely, <50% of survey participants from DOT feel that there are not enough healthy choices in their building’s cafeteria/café.

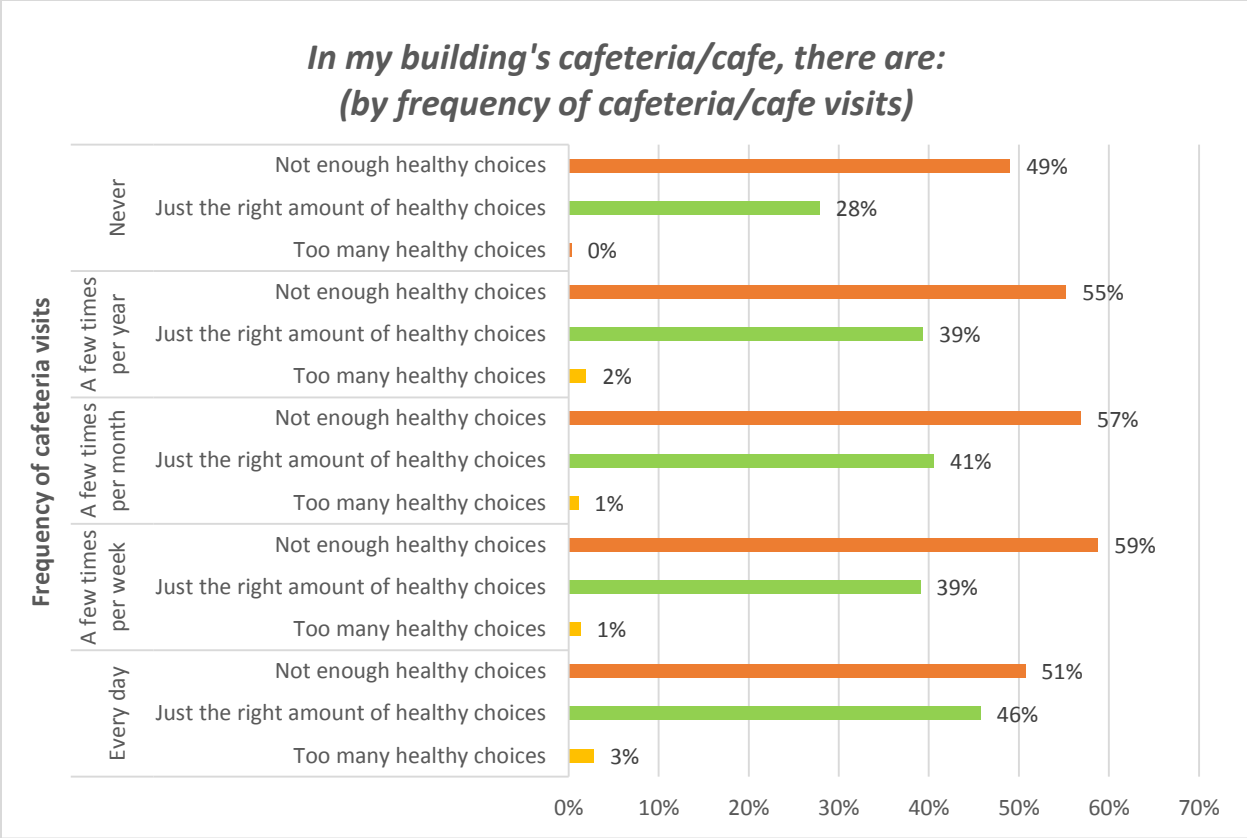


Figure 18

Figure 18 shows that, on average, >50% of employees, regardless of the frequency of their visits, feel that there are not enough healthy choices in their building’s cafeteria/cafe.

Snack and Beverage Vending Machines

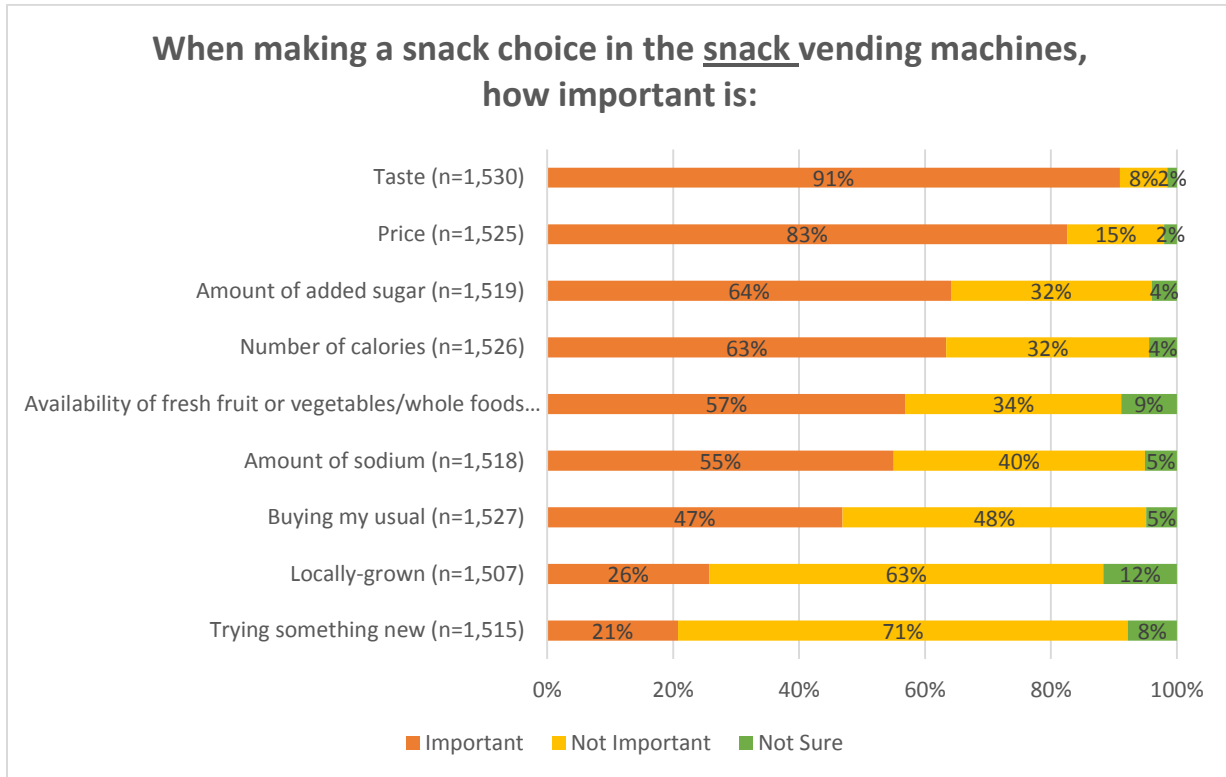


Figure 19

Figure 19 shows that the top three most important factors to respondents when making a snack choice at snack vending machines are taste, price, and the amount of added sugar. The three least important factors to respondents when making a snack choice at snack vending machines are trying something new, the availability of locally grown products, and buying their usual choice.

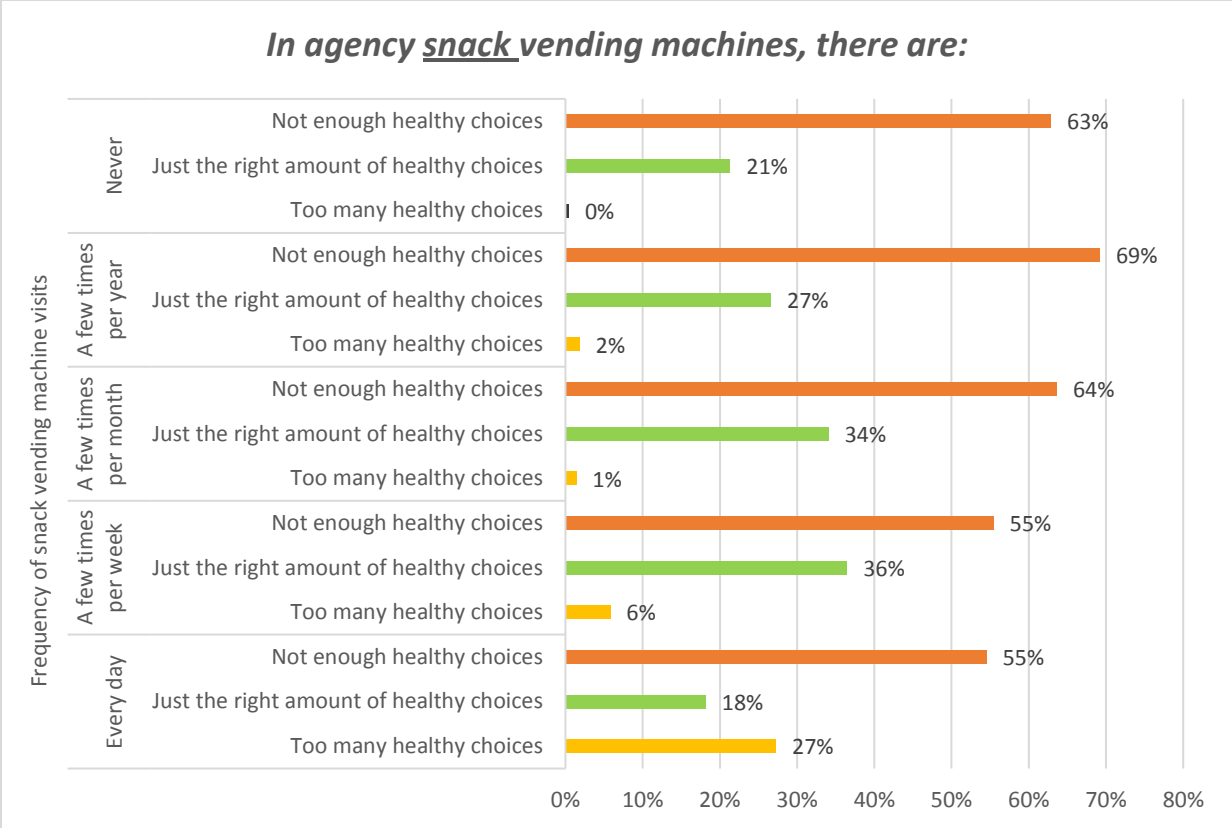


Figure 20

Figure 20 shows that, on average, >50% of respondents, regardless of the frequency of their visits, feel that there are not enough healthy choices in their building’s **snack** vending machines. A greater proportion of the respondents who reported visiting **snack** vending machines less frequently (a few times per month, year, or never) feel as if there are not enough healthy choices available when compared to the proportion of respondents who reported visiting **snack** vending machines more frequently (a few times per week or every day).

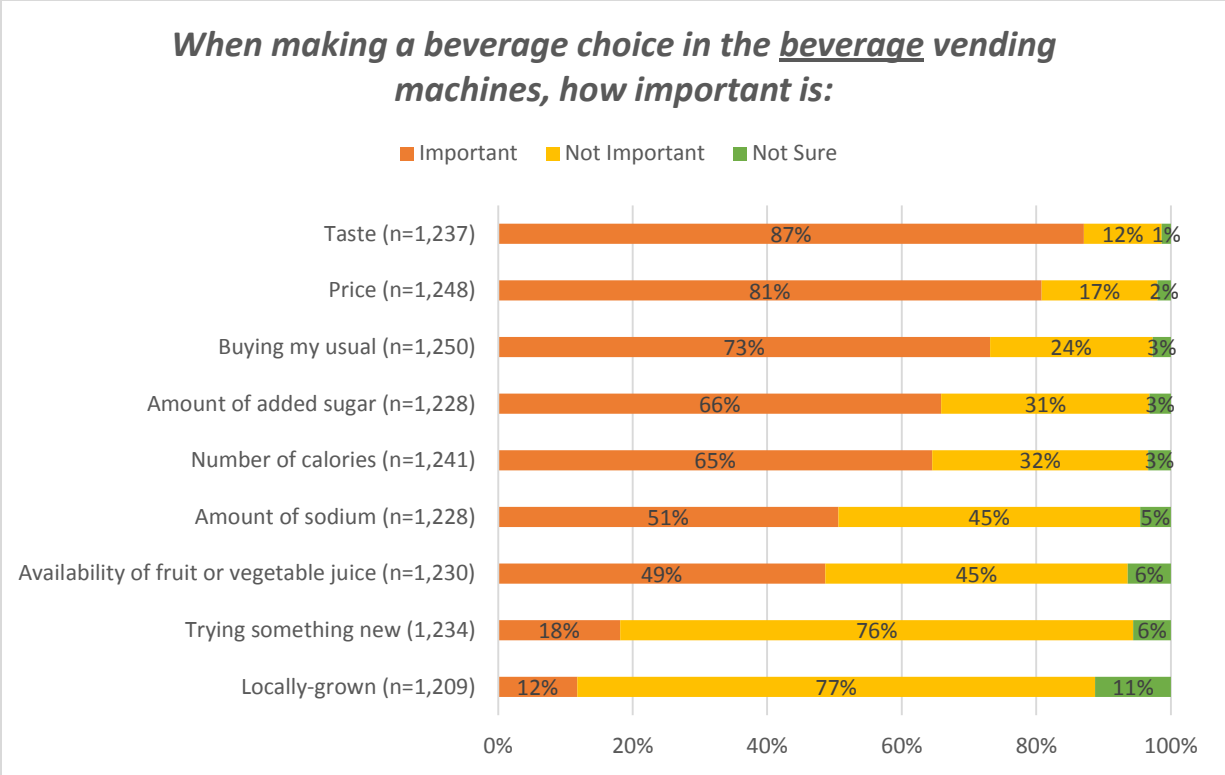


Figure 21

Figure 21 shows that the top three most important factors to respondents when making a beverage choice at beverage vending machines are taste, price, and buying their usual choice. The three least important factors to respondents when making a beverage choice at beverage vending machines are the availability of locally grown beverages, trying something new, and the availability of fruit or vegetable juice.

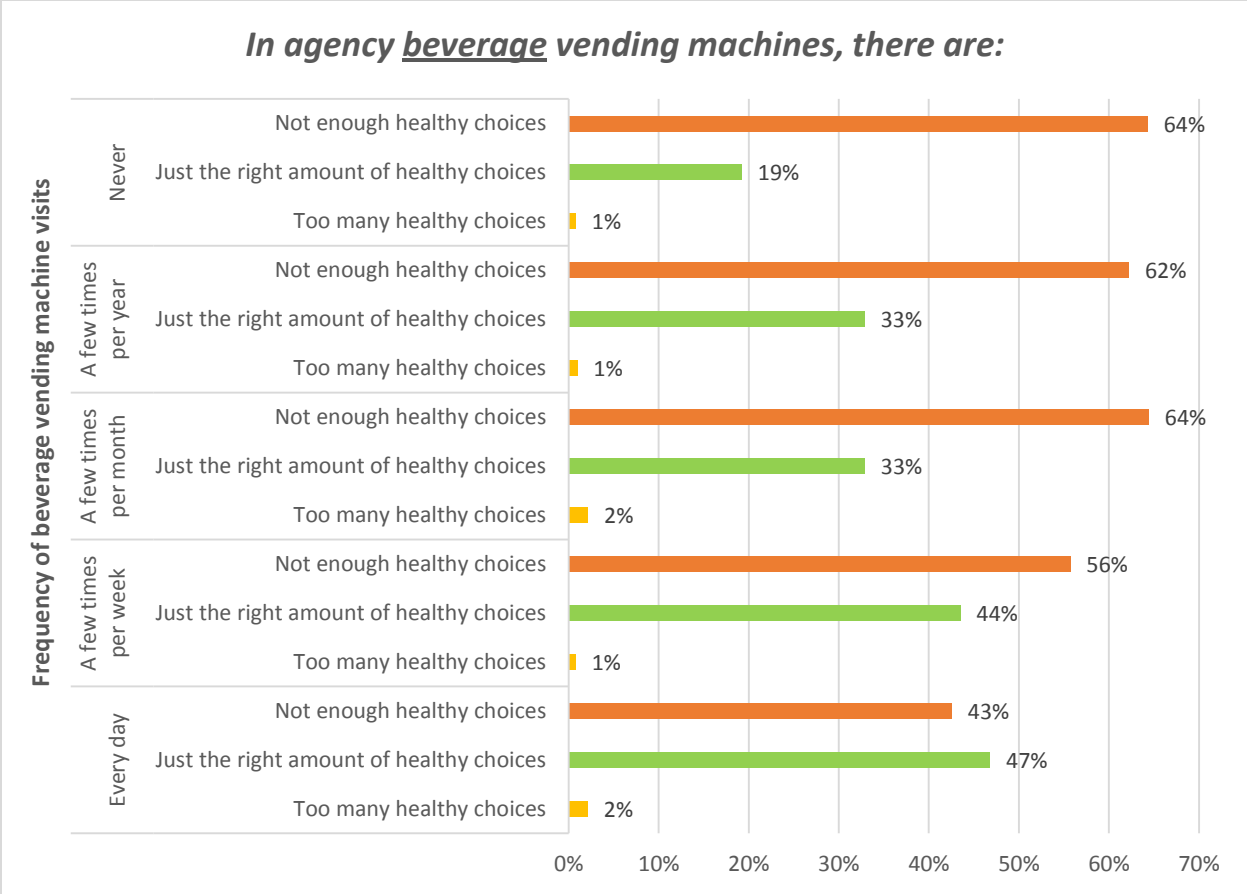


Figure 22

Figure 22 shows that, on average, a greater proportion of the respondents who reported visiting **beverage** vending machines less frequently (a few times per month, year, or never) feel as if there are not enough healthy choices available compared to respondents who reported visiting **beverage** vending machines more frequently (a few times per week or every day). Moreover, a greater proportion of the respondents who reported visiting **beverage** vending machines more frequently feel as if there are just the right amount of healthy choices compared to respondents who reported visiting **beverage** vending machines less frequently.

Micro-Markets

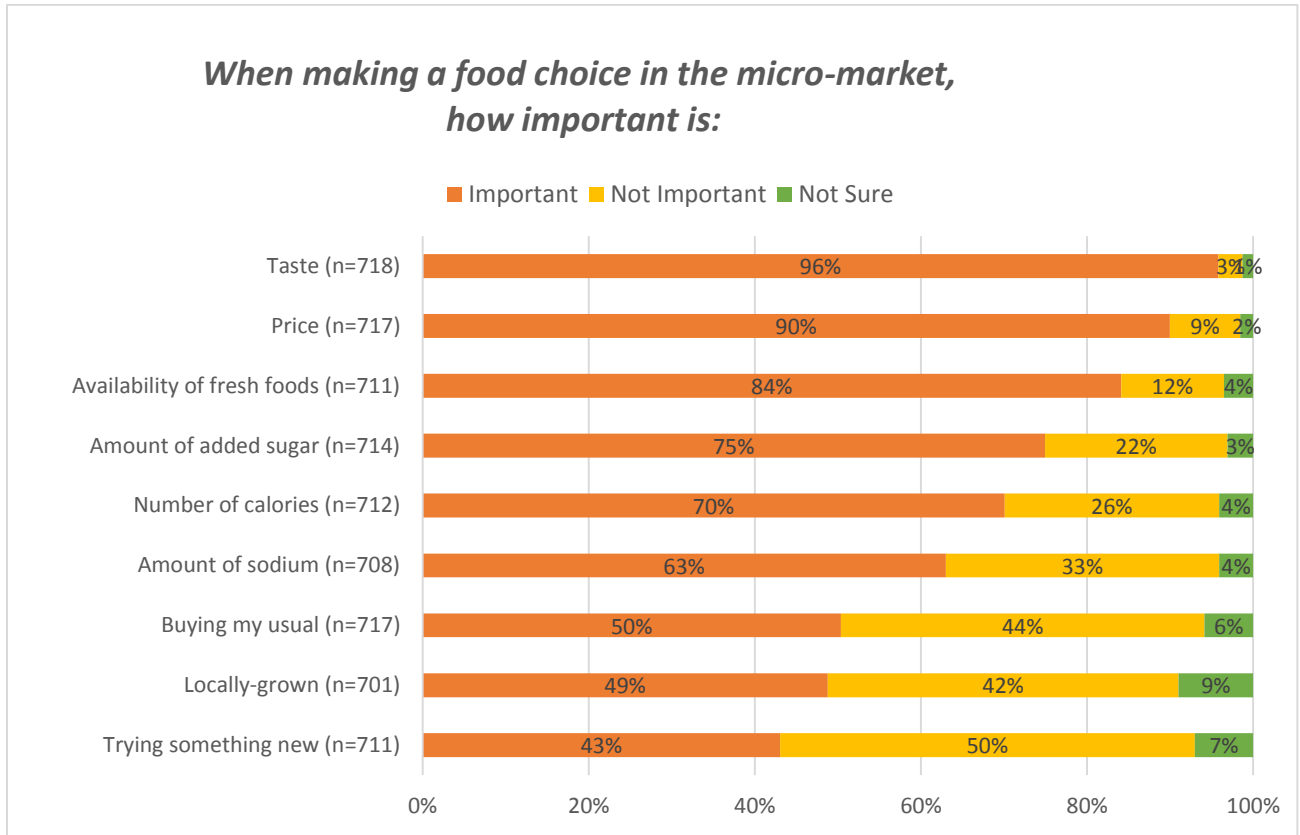


Figure 23

Figure 23 shows that the top three important factors to respondents when making a food choice in the micro-market are taste, price, and the availability of fresh foods. The three least important factors to respondents when making a food choice in the micro-market are trying something new, the availability of locally-grown products, and buying their usual choice.

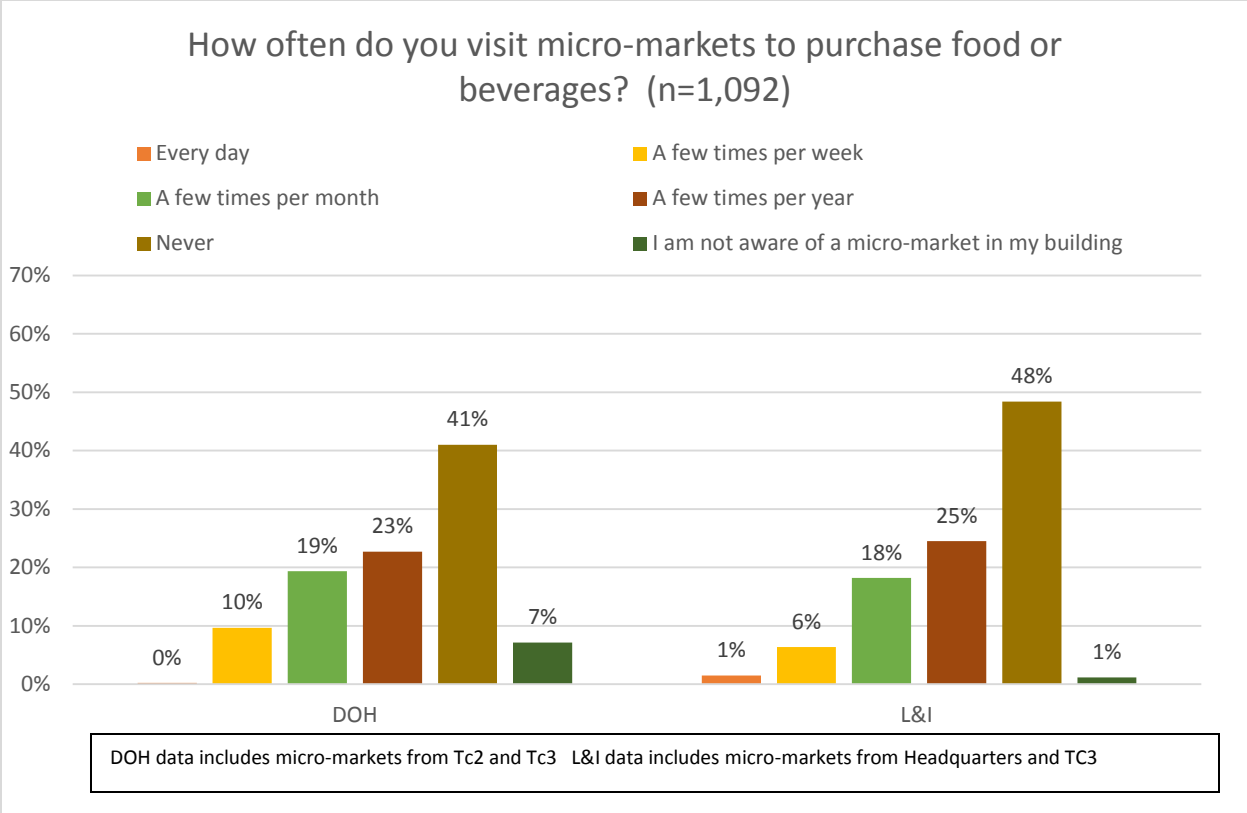


Figure 24

Figure 24 shows that, on average, a greater proportion of respondents with micro-markets in their building/agency reported visiting micro-markets a *few times per month, year, or never* (87%) compared to respondents who reported visiting micro-markets *every day or a few times per week* to purchase food or beverages.

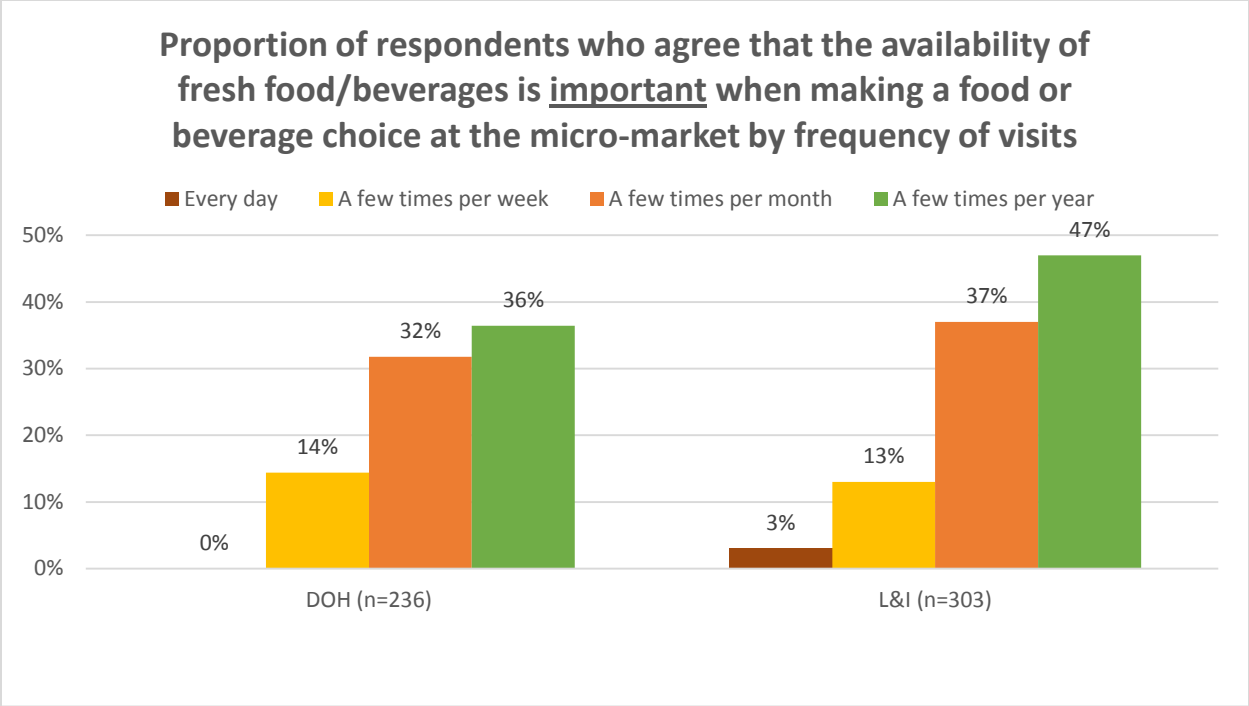


Figure 25

Figure 25 shows that the majority of respondents who agree that the availability of fresh food/beverages **is important** when making a choice at the micro-market, visit micro-markets **least frequently** (a few times per month or year).

Institutional Survey

Responses from 10 Department of Corrections (DOC) foodservice institutions and 13 Department of Social and Health Services Institutions (DSHS) foodservice representatives are summarized in the following figures by category: Beverages; Fruit; Vegetables; Grains; Protein; Trans Fat; Cooking Methods; Use of Lower Sodium Products; Use of Washington Grown Foods; Client Interest in Healthier Foods; Barriers to Serving Healthy Foods; and Staff Training Interests. Additional comments made by respondents are included as quotes.

Institutional Survey Responses

DSHS (n=13) DOC (n=10)

BEVERAGES

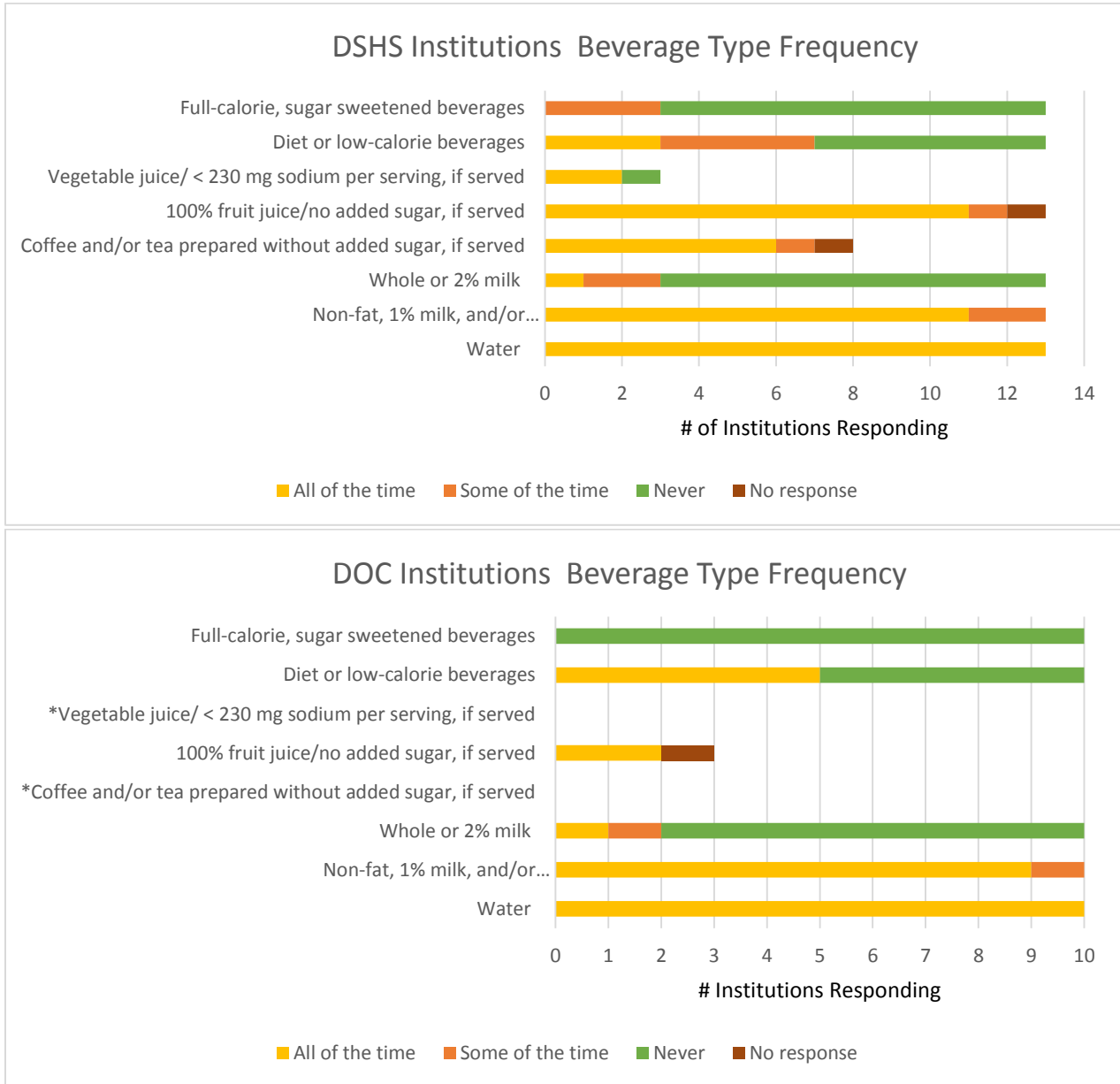


Figure 26 *not served in DOC Institutions

All institutions provide water during meals and snack times and rarely, if ever, serve full calorie, sugar sweetened beverages. When fruit juice is served, 13 out of 15 respondents always serve 100% fruit juice.

DSHS

“Sometimes I serve root beer floats for snacks”

“Full sugar beverages are available for purchase in the Campus Café. They have a choice of sugared or un-sugared beverages. Patient serving areas only have 100% juice or unsweetened beverages”

DOC

“The only beverages served is CI powdered juice packets”

“We serve a vitamin D powdered beverage at every meal. Traditional facilities serve 1% milk, CI Food Service provides non-fat powdered milk packets for breakfast. Makes 8 oz.”

FRUIT

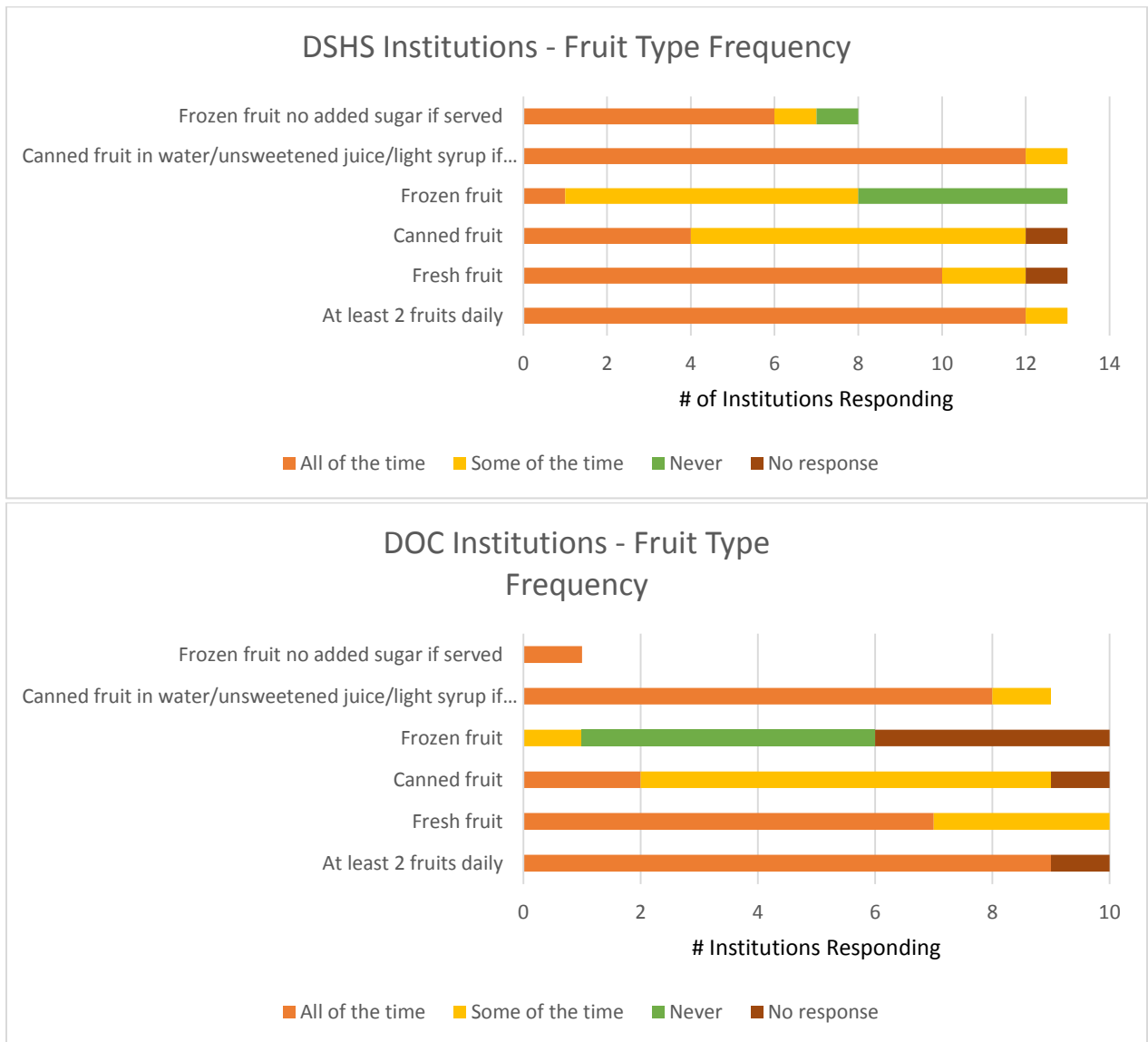


Figure 27

All institutions offer at least 2 cups of fruit daily, with 17 out of 22 respondents offering fresh fruit all of the time. When canned fruit is served, all respondents offer fruit in water, unsweetened juice or light syrup.

DSHS

“Two frozen fruits, Mango (NSA) and once a 28 day cycle strawberry (Sugar Added) waffles”

DOC

“Could serve a better variety but the cost for a lot of fruit is outrageous”

VEGETABLES

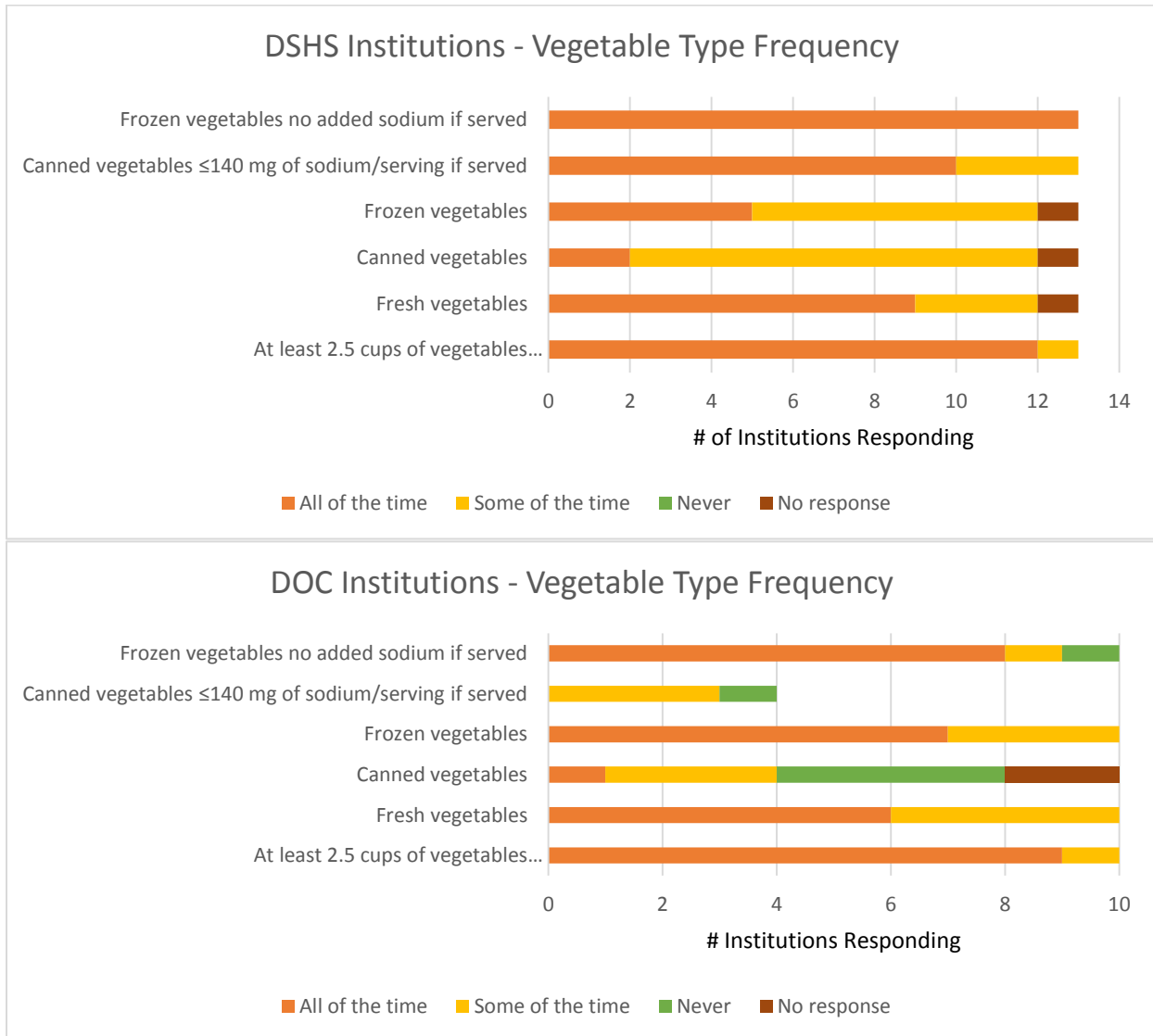


Figure 28

Twenty one of 23 respondents offer at least 2.5 cups of vegetables every day. Canned vegetables are less frequently served than frozen or fresh and when they are served, 10 out of 17 respondents offer lower sodium varieties of canned vegetables.

DOC

"We serve fresh vegetables at lunch, frozen vegetables at dinner"

GRAINS

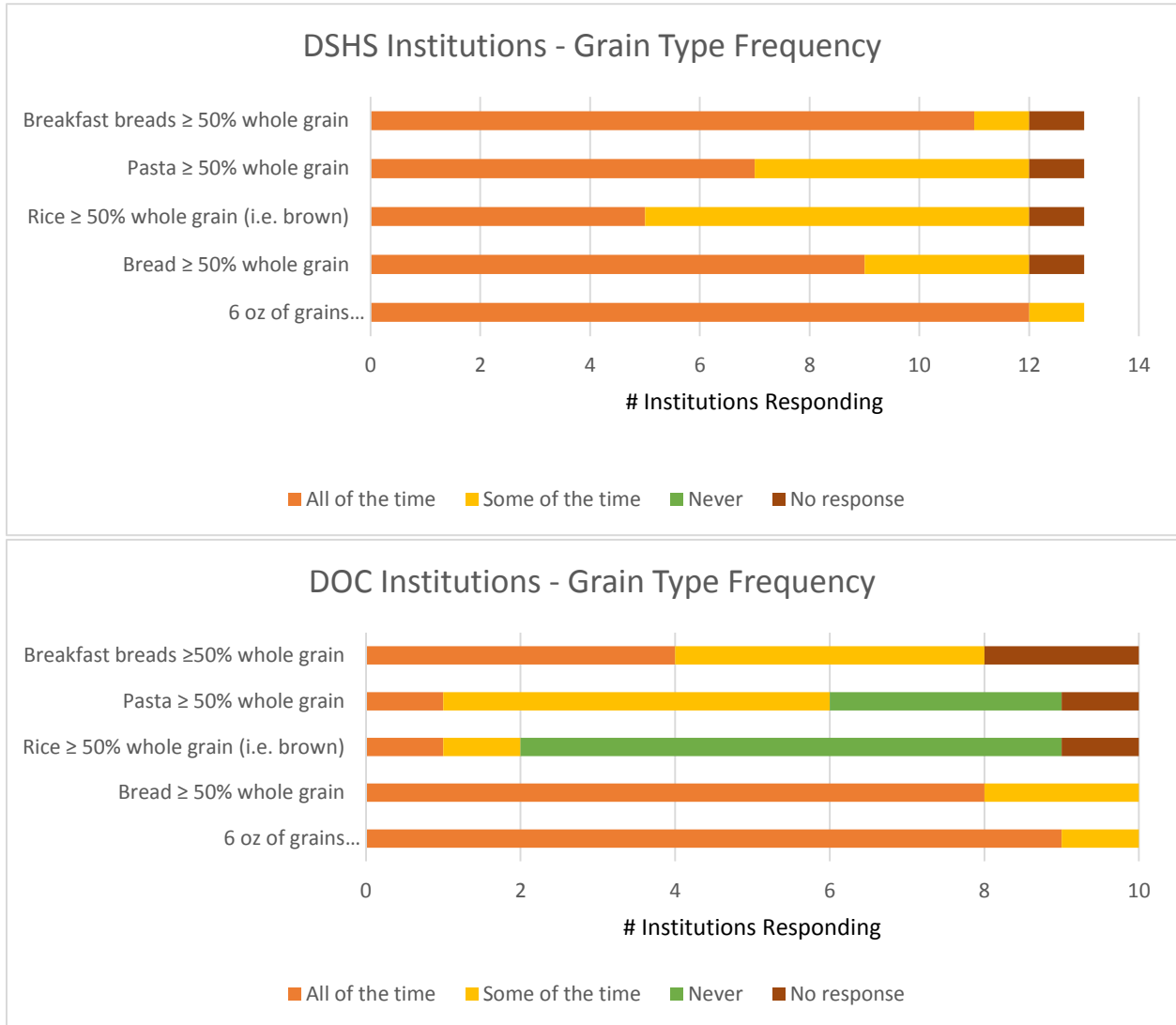


Figure 29

Twenty one of 23 respondents offer approximately 6 oz. of grains daily. Seventeen of 21 responding offer breads that are ≥ 50% whole grain all of the time. Fewer offer ≥ 50% whole grain rice or pasta all of the time.

DSHS

“we serve brown rice for lunch and white rice for dinner”

DOC

“All the grain are what is available In CI products.”

“All bakery products served are 100% whole white wheat”

PROTEIN

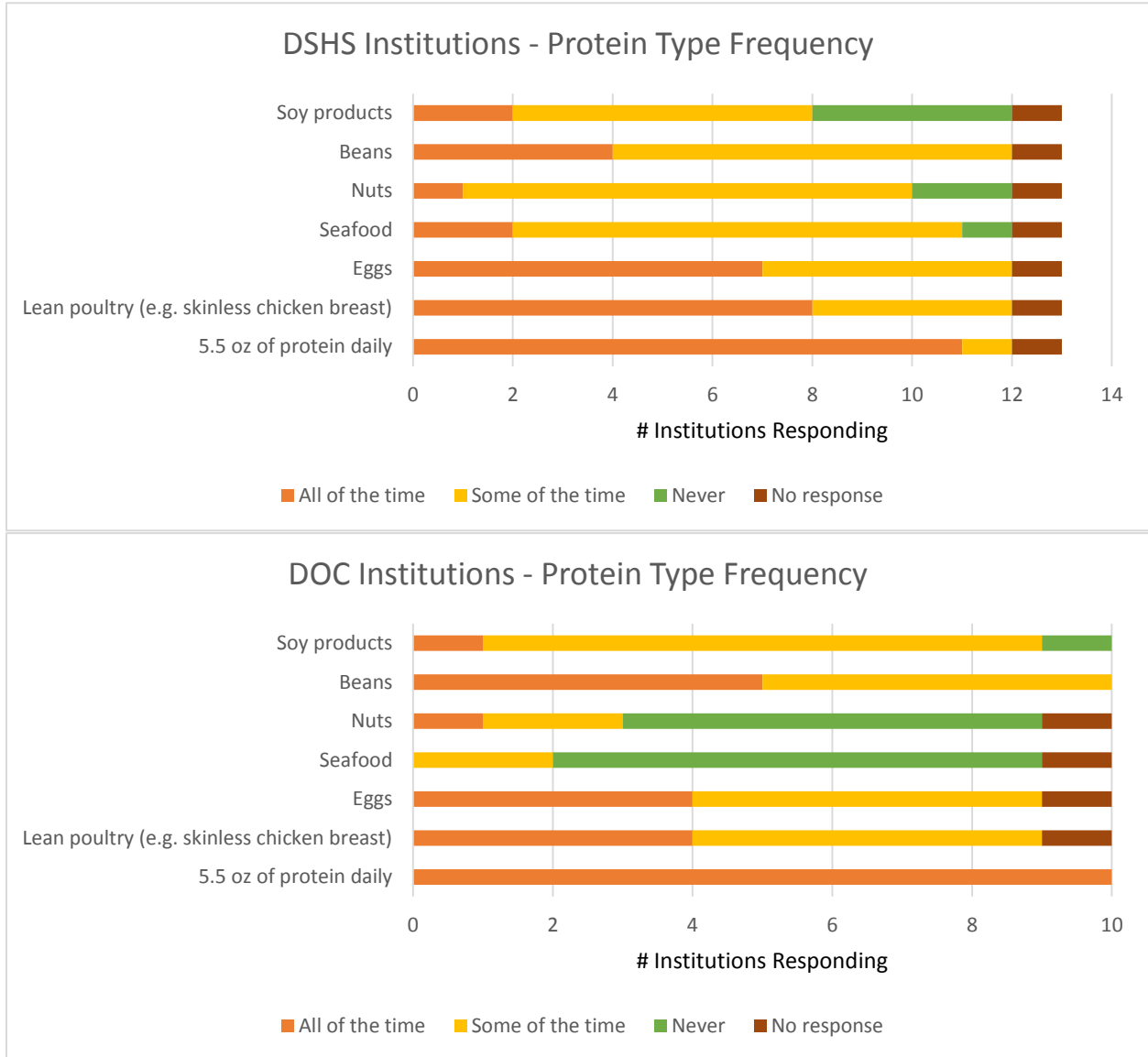


Figure 30

Twenty one of 22 respondents offer 5.5 oz. of protein daily. Nine respondents serve beans all of the time; 12 serve lean poultry all of the time.

DOC

“Most all the proteins come from poultry which is a healthy protein source turkey-very little beef, quite a lot of beans.”

FAT

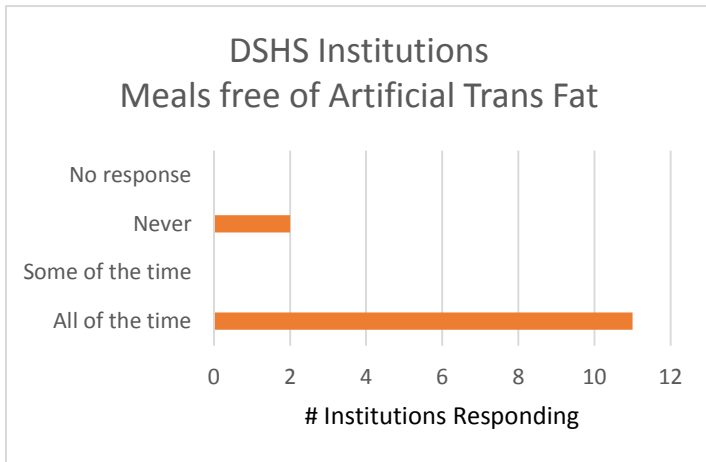


Figure 31

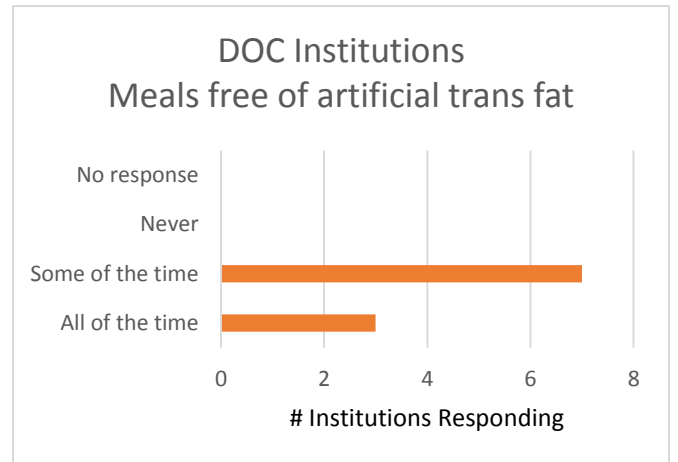


Figure 32

Fourteen of 23 respondents always serve meals that are free of artificial trans-fat.

DOC

“The way food service operates for the most part now days CI controls the fat in the facility meals, with premade products.”

COOKING METHODS

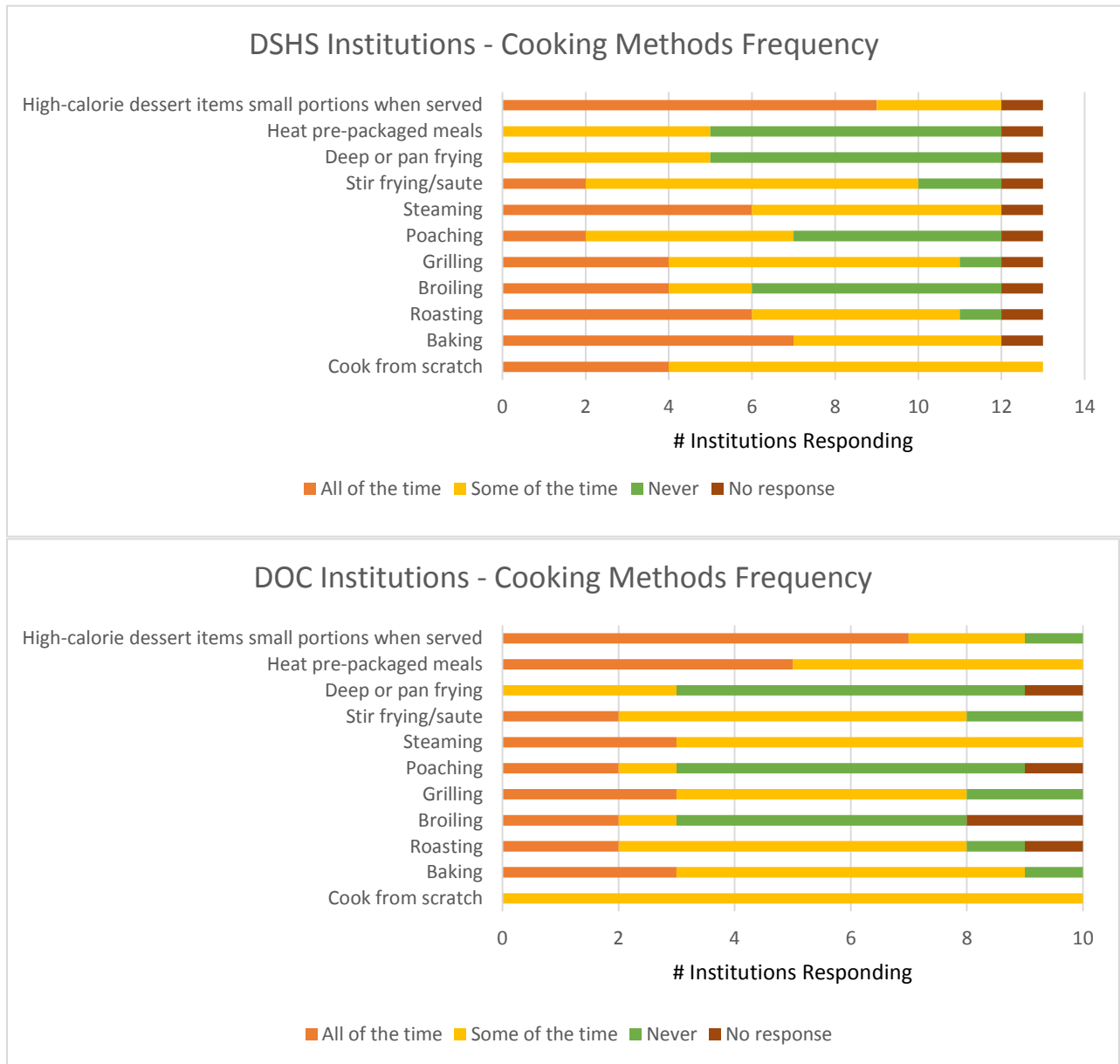


Figure 33

Four of 23 respondents (all from DSHS institutions) indicate that they cook from scratch all of the time. Five of 10 DOC respondents report that they heat pre-packaged meals all of the time.

DSHS

“No broiling... No broiler We sometimes are more generous with desserts especially for celebrations.”

“I deep fry once a month for cod.”

“I try to cook from scratch as much as possible. I do not have a broiler to be able to broil foods.”

DOC

“The cooking methods have become healthier over the years I have worked at OCC. All we do is boil, steam, and bake.”

SODIUM

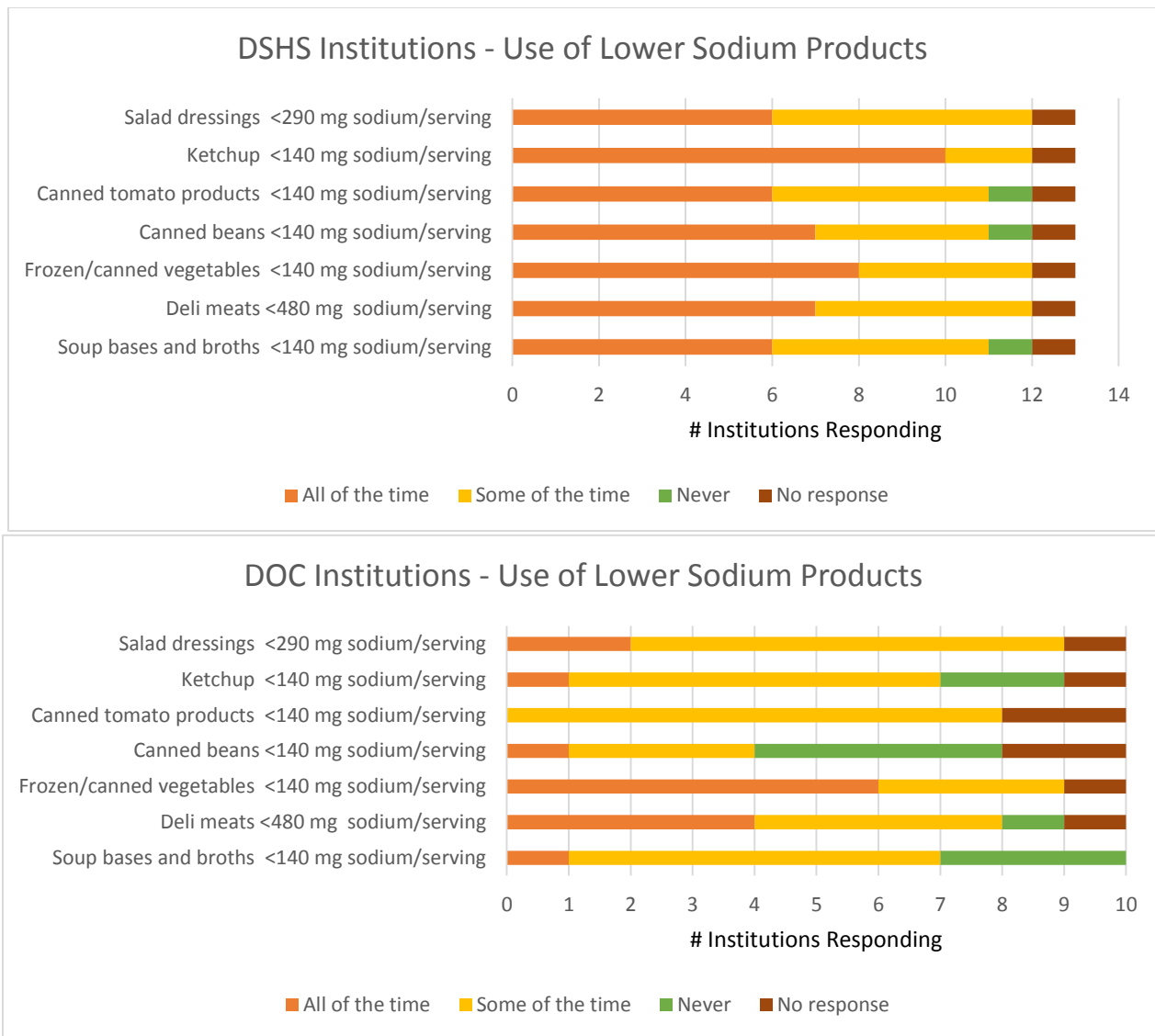


Figure 34

At least half of the DSHS institutions reporting use lower sodium condiments, canned vegetables, deli meats and soup bases all of the time. More than half of DOC institutions report using lower sodium canned/frozen vegetables all of the time.

DSHS

“Need product availability from contracted vendors”

DOC

“We try to limit the sodium we put in our foods and put salt on the tables so that they control it.”

WASHINGTON GROWN

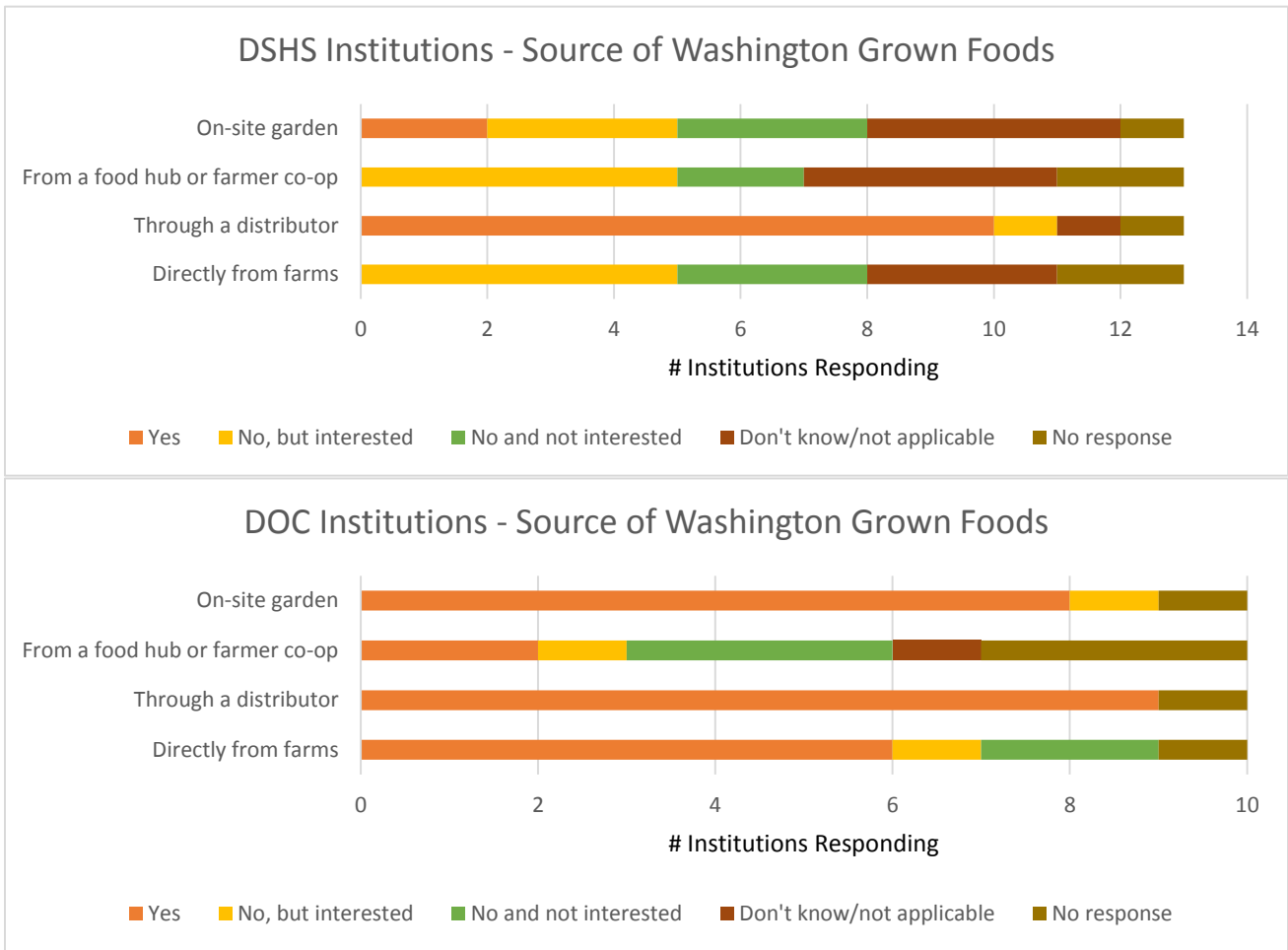


Figure 35

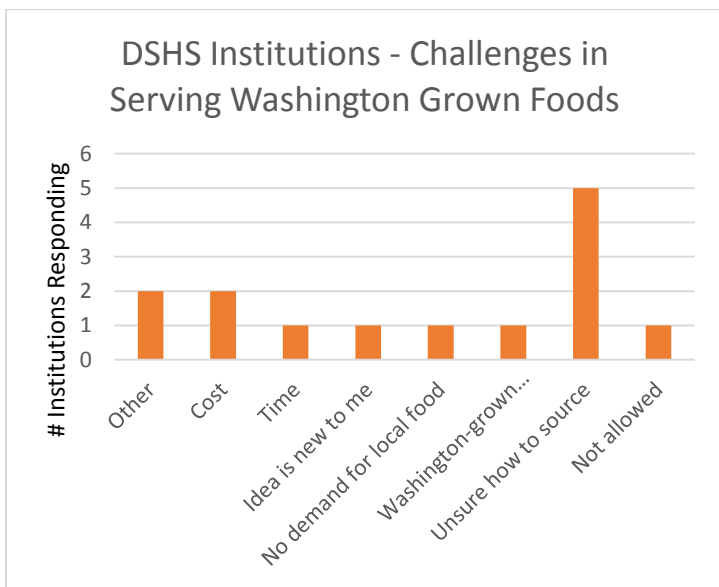


Figure 36

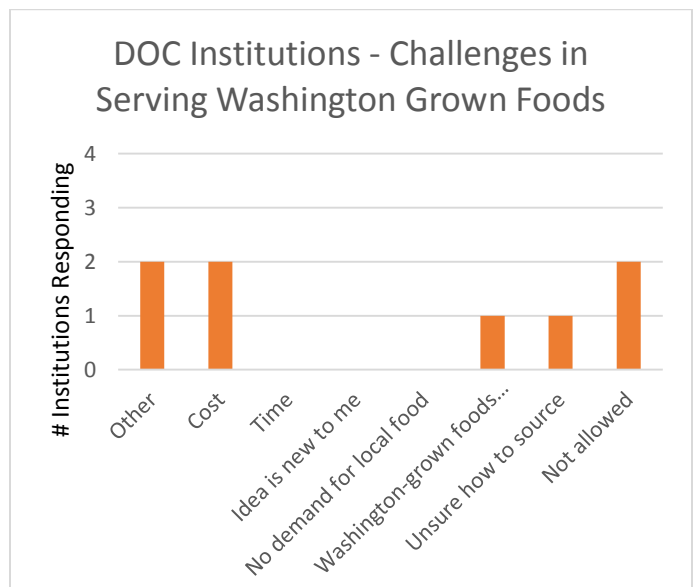


Figure 37

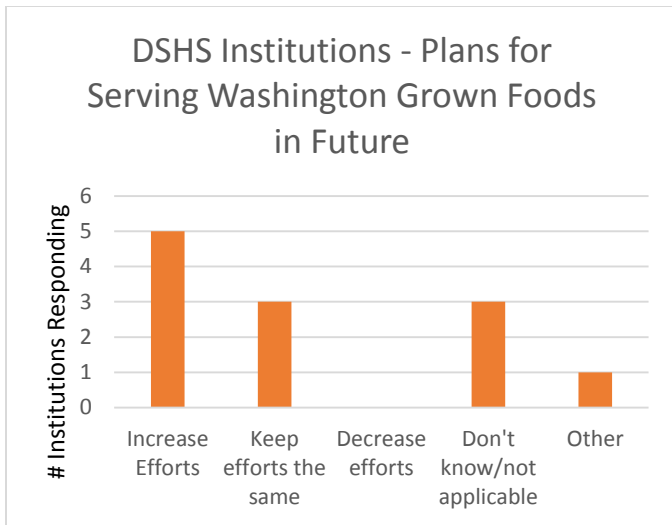


Figure 38

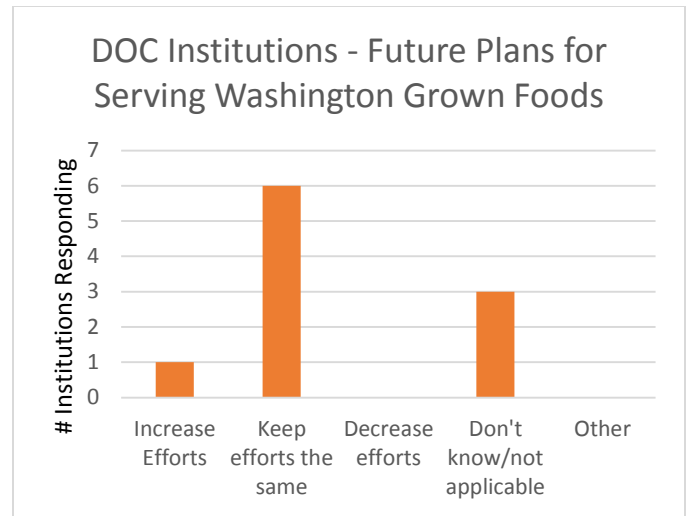


Figure 39

There are differences between sources of Washington grown foods in DSHS and DOC institutions. The majority of these foods are sourced through distributors for DSHS institutions, and only two report having an on-site garden. There is interest in learning more about sourcing through food hubs, farmer co-ops and directly from farms. Eight of 9 DOC institutions responding have on-site gardens and more than half purchase directly from farms. All of the DOC sites responding also purchase Washington grown foods through a distributor.

DSHS

“The way the Farm to table program is set up it really does not work. Cost is too high, Two weeks lead time is too far out and quality is not always acceptable.”

“Nice idea but with many nice ideas they lack funding and support.”

“We buy what we can but we are at the vendors mercy.”

“We get fresh produce from a local company.”

“It’s hard with a smaller facility to buy a lot of local. They have such large quantities. If the cases could be broken in half I would make sure to buy more from local farmers.”

DOC

“I would like to serve more Washington grown foods but have had quality problems in the past.”

“Program has been being used for several years to include gardens at most facilities.”

CLIENTS INTEREST IN HEALTHIER FOODS

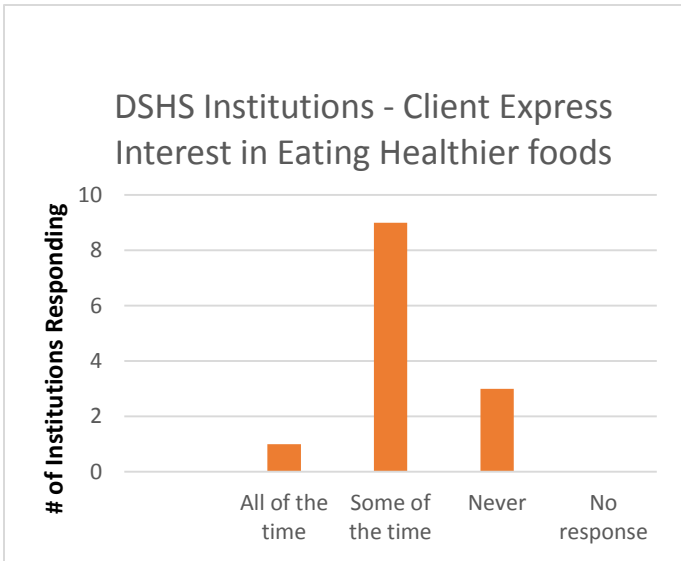


Figure 40

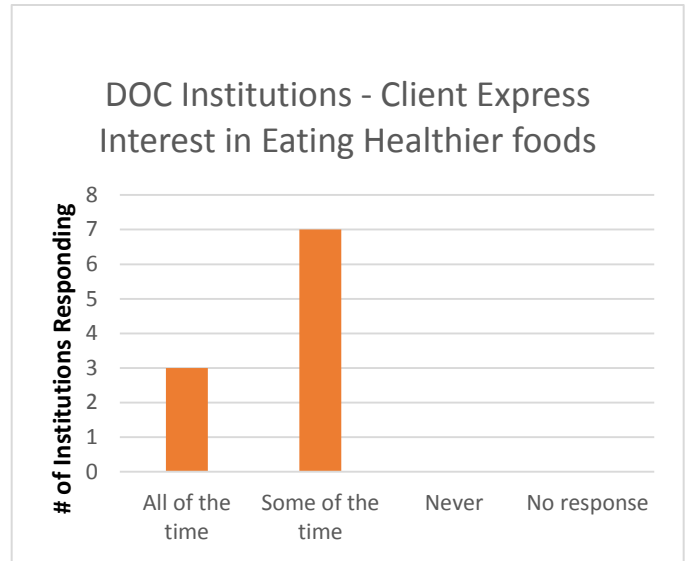


Figure 41

DSHS

"I was able to attend the "Cut the salt and boost the flavor" seminar with Chef Garrett. That was a big help and I learned a lot from him."

"Facility administrators need more information on this topic so they can have a better understanding of the kind of funding and support is required. Too often food service is an afterthought when considering budget and training."

DOC

"I have worked in food service for fifteen plus years for DOC. I think the food service has made steps toward healthier diets and cost savings - we aim to please a rough crowd."

BARRIERS TO SERVING HEALTHY FOODS

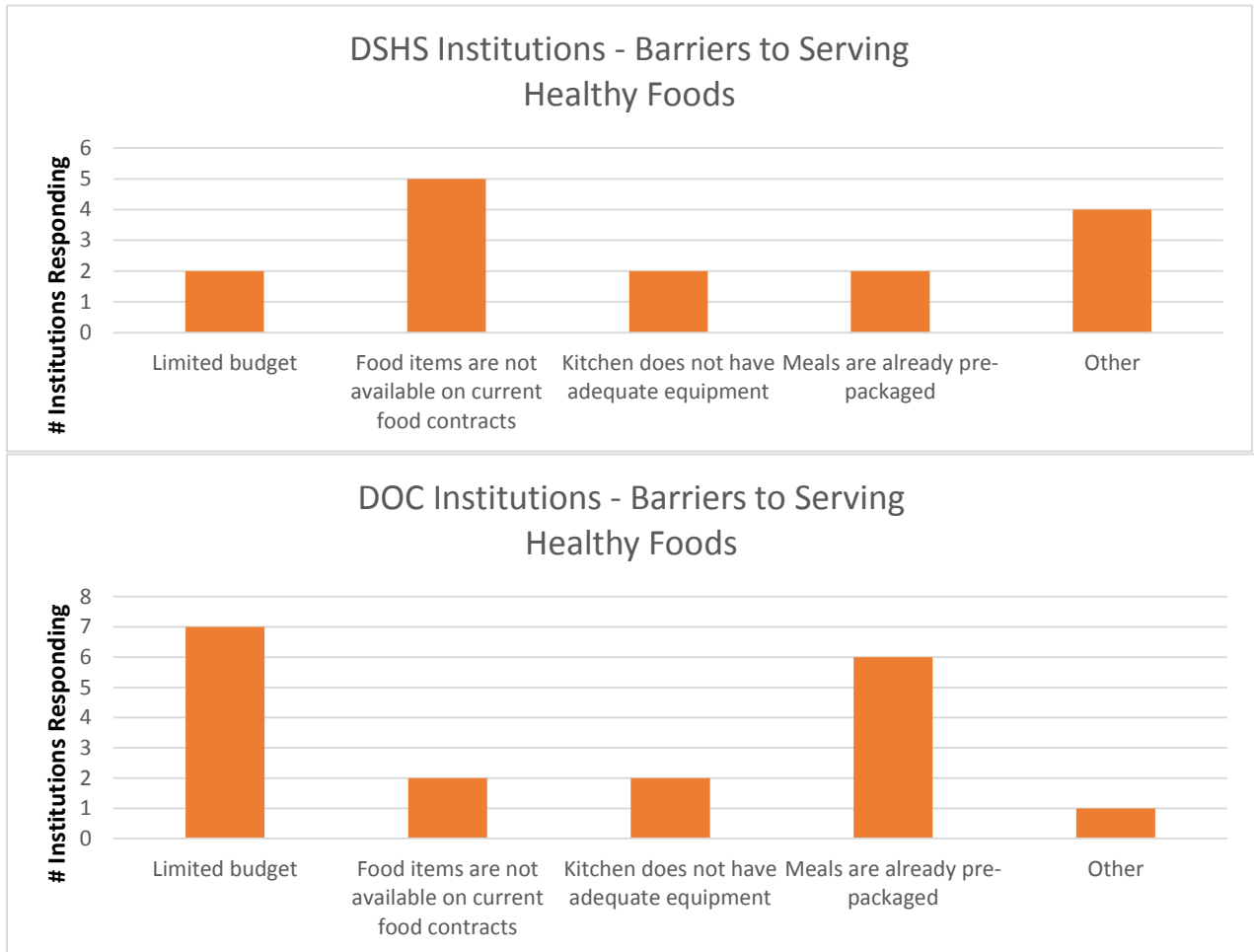


Figure 42

The leading barrier to serving healthy foods for DSHS institutions is that food items are not available on current food contracts. For DOC, major barriers most frequently cited are limited budget and the fact that meals are already pre-packaged.

Institutions were asked to describe what would be needed for their facility to serve healthier food. They responded as follows:

DSHS

“Cooking and baking with whole grains”

“More prep time”

“More training on how to make substitutions for taste with removing the salt. Better communication to share with staff on the purpose of healthier nutrition”

"Kids that want to eat it and would eat it."

"Rotisserie oven"

"Alto Sham Oven"

"A broiler would be a nice addition and a wok stove"

"MORE THAN ONE COOK"

"More healthy options, vegetarian and gluten free items through vendor."

DOC

"I think we do a great job serving healthy food. Some things could be fresher."

"They have the skills, but need the resources"

"larger budget"

"fresh healthy scratch cooking"

"The majority of the meals served are pre-made, pre-packaged as required."

"My facility would need a higher budget and more freedom in ordering."

"DOC strives to provide healthy low sodium meals, whole grain product, and provide fresh fruit and vegetables for our population."

STAFF TRAINING INTERESTS

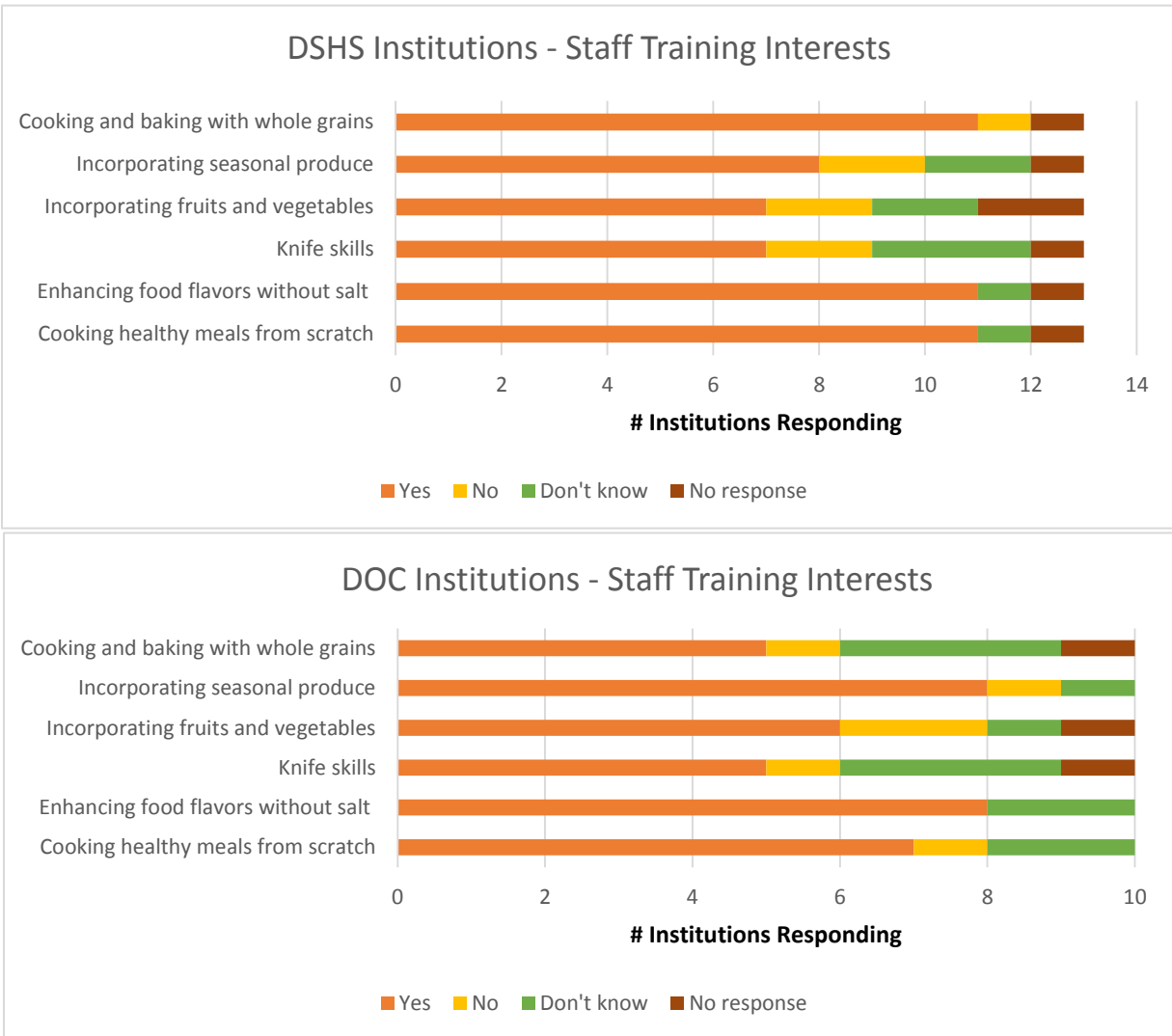


Figure 43

More than half of all respondents express interest in staff training addressing cooking techniques and incorporating healthy foods into meals.

DSHS

"I would like more scratch cooking for healthy meals."

"Nutri kids"

"ServSafe"

"We are guided by recipes that work with the Nationals School Breakfast and Lunch Programs."

DOC

"Serve safe training on lean practices."

Discussion

The objectives of this evaluation were to determine the impacts of the EO on the food environments of affected food service venues; to summarize employees' and institutional sites' purchasing behaviors and preferences for healthy food and beverage items in Washington State food service venues covered under the EO; to assess the impact on food service venue purchases and sales; to identify perceived facilitators, benefits and barriers of implementation; to compare progress since baseline and mid-implementation when possible; and when possible, to propose recommendations for continued implementation. Cafeterias, vending machines, and micro-markets are not yet in full compliance with the HNG. Although progress towards meeting the guidelines is evident in some areas, opportunities exist for improvement.

Cafeterias

Although none of the cafeterias assessed were fully compliant with HNG basic criteria, a greater number of cafeterias observed *some* of the basic criteria during the 2016 evaluation when compared to the baseline and mid-implementation evaluations. Since baseline, there has been a notable improvement in the promotion and availability of free water. This may be attributed to the low-cost and ease of promoting free water, as all cafeterias that observed this criteria indicated the availability of water by placing a sign directly on their fountain machine. There was also a large increase in the number of cafeterias offering whole grain products. Although all cafeterias observed this criteria during mid-implementation, three cafeterias received credit for offering whole grains by offering whole grain chips, bars, or popcorn. During the 2016 evaluation, all cafeterias received credit for this criteria by offering whole grain bread. However, whole grain bread was the default option in only two of the cafeterias assessed, and only one cafeteria offered whole grain options as part of their main entrée(s).

Despite progress in some of the basic criteria, there was also a reduction in the number of cafeterias that observed other basic criteria. During the 2016 evaluation, fewer cafeterias offered at least one non-fat milk product, and a greater number of cafeterias used trans-fat or partially hydrogenated oils in the preparation of some of their meal items. During the mid-implementation evaluation, all cafeteria managers reported serving meal items free of artificial trans-fat or partially hydrogenated oils. During the 2016 evaluation, six cafeteria managers reported serving meal items that contained artificial trans-fat or partially hydrogenated oils such as margarine and pre-made baked goods. A likely explanation for the decrease in compliance is that during this evaluation, evaluators first asked cafeteria managers if any meal items contained artificial trans-fats or partially hydrogenated oils. If the cafeteria manager was not confident in his/her response, evaluators provided examples of some foods that typically contain artificial trans-fats or partially hydrogenated oils. As such, evaluators may have prompted cafeteria managers to share more information during this evaluation as compared to the mid-implementation evaluation. A decrease in the number of cafeterias offering at least one non-fat milk product was likely due to a decrease in the availability of low-fat yogurt products during the 2016 evaluation phase as compared to mid-implementation. In addition, cafeterias were only assessed once during each phase and it could be that some items were not stocked at the time of this assessment.

Similar to baseline and mid-implementation, no cafeteria promoted lower sodium snacks or individual food items. While two cafeterias did promote low-sodium entrées, they received technical assistance from DOH to help them meet this criteria. With technical assistance, other cafeterias are likely to be successful in promoting low sodium entrées.

Assessment of the additional criteria indicated that none of the cafeterias were compliant with the majority of the guidelines. This may be partially explained by confusion with the specific criteria. For instance, many cafeteria operators made a point to inform the researchers that they no longer served cups that were 32 ounces. However, a majority of the cafeterias still provided cups for their fountain station that were larger than 16 ounces, suggesting that cafeteria operators may be under the impression that compliance is met by offering cups less than 32 ounces. Cafeteria operators also noted that they no longer offered whole milk nor used it as the default milk for their coffee drinks, but 2% fluid milk products were still available. When asked if they use low-fat or non-fat cheese as the default for their sandwiches, operators did not seem to have considered this as an option, or worried whether it would impact the taste of their products. Moreover, only one cafeteria received credit for providing milk, rather than cream or half and half, as the default option at their coffee service bar. While some cafeterias did try to make this transition, it was met with customer complaints. Rather than waste the milk that their customers were not using, cafeteria operators felt it was in their best interest to offer cream or half-and-half. Clearer guidance on these criteria may be required, as well as suggestions on how to meet the criteria while still meeting the demands of their customers.

Similar to mid-implementation, cafeterias may need additional support with the criteria that specifies that cafeterias must “serve one meal per day that provides one serving of at least three of the following: fruit, vegetables, beans or whole grains.” Although all nine cafeterias received points, none offered an entire meal that would have met this criteria by default. For example, points were awarded if a customer had the option to request a sandwich to be made on whole-grain bread with lettuce and tomato or if a salad bar offered fruit and beans. While these items technically meet the criteria, they may not address its actual intent.

All cafeteria operators were cognizant of ways to reduce sodium, and most cafeteria managers emphasized that they try to prepare all items from scratch, using fresh ingredients with little to no added salt. Canned or frozen vegetables were rarely used and the most commonly utilized low-sodium product was fresh vegetables, followed by low-sodium soup bases. One cafeteria received credit for low-sodium grain products by offering lower salt, home-made bread on a daily basis. Many cafeteria operators said they did not know that low-sodium grain products existed. Cost was also a barrier, as many cafeteria operators noted that the increased cost of low-sodium deli meats over regular deli meats prohibited them from changing the product currently in use. However, towards the end of the evaluation period, cafeteria operators informed evaluators that they had a testing scheduled for a new low-sodium deli meat, indicating that cafeteria operators are willing to try lower-sodium products, but may require additional time to implement this change.

Pricing for healthy products versus their unhealthy alternative were comparable and, in some cases, the healthy option cost less. However, the proportion of healthy snacks offered for sale in cafeterias has decreased and, during this 2016 evaluation, more than half of the cafeterias either did not offer chips, cereal, or yogurt, or sold no healthy equivalents. Similarly, although there was an increase in the proportion of low-fat milk available since mid-implementation, there was a decrease in the proportion of diet soda and 100% juice available. Barriers and facilitators to offering healthy alternatives should be investigated and additional guidance on compliant products may be necessary for cafeteria compliance.

The 2016 evaluation of behavioral economics indicates that there are opportunities for improvement. Although a majority of the cafeterias utilized signage to promote healthier choices, only one cafeteria engaged employees to prompt customers to choose healthier options when ordering, and only two listed healthier items first on the menu. The assessment of placement and promotion criteria also indicated the lack of customer prompts to make healthier choices, with fewer than half of the cafeterias making nutrition information available, either online, in the cafeteria, or through the indication of healthy items on their menus. Varying views on cafeteria responsibility were expressed by operators during assessment visits. Whereas some cafeteria operators supported the promotion of a healthy environment and felt it was what their customers wanted, others felt that they were not responsible for changing customer behaviors. Despite the various views on cafeteria responsibility, there was little to no resistance to making changes to promote healthier choices. However, in order to do so, cafeteria operators expressed the need for clearer guidance and specific examples, and emphasized that the decisions of whether or not to make changes ultimately depended on customer choices and the “bottom line.”

Vending

The 2016 evaluation suggests that the proportion of compliant beverage and snack vending machines is increasing in Washington State agencies covered under the EO. The availability of healthy beverages was slightly greater at every agency than the availability of healthy snacks. Despite this discrepancy, the availability of healthier items in snack machines does appear to be improving. Although only two of the 29 assessed snack machine were compliant, the percentage of machines that were within 15% of target compliance standards in 2016 increased from 2% in 2015. *Healthy* additions included 100% fruit bars and raisins with no added sugar. *Healthier* additions included cereal bars, fruit snacks, and Pop Chips®. As vending contracts are updated to include the HNG standards, it is expected that compliance will further improve for snack and beverage machines.

Micro-Markets

The demand for micro-markets is expected to increase because they are popular options for customers, vendors, and the DSB, who holds contracts for most of the vending in Washington State building covered under the EO. Since mid-implementation, two additional micro-markets opened in agency buildings; one micro-market opened in DOH-TC3 on March 28, 2016, and another opened in HCA on April 19, 2016. More are scheduled to open in the coming months.

Of the five micro-markets assessed, three were also assessed in the mid-implementation evaluations. When comparing *the three matched micro-markets* assessed, the range of beverage section compliance widened (44%-55% during mid-implementation, and 30%-61% during 2016 evaluation). The range of beverage section compliance *at all five micro-markets* was also 30%-61% during 2016. Similar to mid-implementation, the proportion of compliant beverages present and sold in micro-markets was higher than that of healthy snacks and grab-n-go entrées. This trend suggests that it may be easier for vendors to stock healthy beverages than snacks and entrées that comply with the HNG, and/or customer demand for healthy beverages is higher than their demand for healthy snacks and entrées. This trend may also be due to the fact that healthy beverages, such as diet soda, water, and unsweetened ice tea, are all popular drink options.

Healthy entrées were the least sold items in micro-markets. Between mid-implementation and 2016, entrée compliance increased at two of the three micro-markets, and decreased at one of the micro-markets. The decrease in entrée compliance at the micro-market is likely due to a decrease in the number of entrée salads available for purchase. During this 2016 evaluation, no healthy salads, and only one healthy entrée (Vegetarian Hummus Wrap), was available for sale.-Unlike cafeterias, pre-made micro-market entrée selections do not allow customers the flexibility to make their own healthy entrées, such as sandwiches or salads. Customers also cannot request sauces on the side or add fruit and vegetables side options.

At two of the five micro-markets assessed, the proportion of compliant entrées available was *lower* than the proportion of compliant entrées sold and may suggest that micro-markets either sold out of healthy entrées due to demand and/or the healthy entrées had not yet been restocked. During this evaluation, researchers noticed that some micro-markets were low in stock of healthy and popular entrée items such as Caesar Salad with Grilled Chicken, and P3 Protein Pack Turkey Colby. Researchers learned that the frequency that micro-markets are restocked varies between buildings/agencies. For example, some micro-markets are restocked multiple times per week, while others are restocked a few times per month. The frequency depends on the season, the number of food/beverage items sold, and the delivery routes. This is important to consider when analyzing micro-market compliance because researchers may have visited micro-markets during a time when they had not yet been restocked, especially with fresher and healthier foods of shorter shelf life.

Our evaluation of micro-markets suggests that there is potential for these new environments to offer customers healthy beverage and snacks that are not feasible in vending machines (due to refrigeration requirements). While micro-market entrée compliance and sales are lower than micro-market snacks and beverages compliance and sales, the data suggests that consumer demand for healthy entrées has increased since mid-implementation.

Employee Survey

Customer interest and demand for healthy food and beverage items is an important consideration for cafeteria operators and vendors in Washington State when making the decision to offer healthy entrée, snack, and beverage items in agency food environments. The results of the employee survey suggest that the majority of respondents agree that it is important to be able to purchase healthy foods at work. Moreover, half of respondents agree that there are healthier food and beverage choices available in their buildings in the last two years, which may suggest that the implementation of EO 13-06 was successful in increasing access to and availability of healthy options. Two of the four agencies with the greatest proportion of respondents who feel that healthier options are available in the last two years have micro-markets in their buildings, which further supports that micro-markets may offer customers healthy beverage and snack options that are not feasible in vending machines.

Cafeterias

More than half of respondents, regardless of how often they visit cafeterias/cafes, agree that there are not enough healthy choices in their building. Additionally, more than half of respondents reported visiting a cafeteria/café frequently (*a few times per month, week, or every day.*) These results suggest that despite a lack of healthy options, respondents are still frequently purchasing food at their building cafeterias/cafes. A short qualitative analysis of respondent write-in responses suggests that the availability of fresh, organic, gluten-free, low-carb, vegetarian, and less-processed foods are important when making a food choice in the cafeteria. Respondents also expressed the desire for access to a list of the ingredients used to prepare foods, both for nutritional and potential allergen content.

Vending

More than half of respondents reported never visiting beverage vending machines, and less than half reported never visiting snack machines. More than half of respondents agreed that beverage and snack vending machines do not offer enough healthy options. Additionally, a smaller proportion of respondents reported visiting beverage and snack machines *frequently* compared to those who reported visiting cafeterias/cafes *frequently*. This may suggest that respondents are visiting cafeterias/cafes more than beverage and snack machines due to a greater availability of healthy options in cafeterias/cafes.

A greater proportion of respondents who visit beverage vending machines *less frequently (a few times per year or never)* agree that there are not enough healthy options available for sale when compared to respondents who visit beverage vending machines *frequently*. Moreover, a much greater proportion of respondents who visit beverage vending machines every day feel there are just the right amount of healthy options compared to respondents who never visit beverage vending machines. This suggests that if beverage vendors offer more healthy options, they may be able to increase the frequency of beverage vending machines visits and purchases.

Regardless of whether respondents were making a choice at a snack or beverage vending machine, two of the three *least important* factors were *trying something new* and *purchasing locally-grown products*. However, while *buying their usual* was least important to employees visiting snack vending machines, it

was *most important* to employees visiting beverage vending machines. These results suggest that customer demand for specific snack items may be less than the demand for specific beverages items, and that customers may be more receptive to trying new snacks items.

A greater proportion of respondents who visit snack vending machines *less frequently* agree that there are not enough healthy options available for sale when compared to respondents who visit snack vending machines *frequently*. Moreover, a much greater proportion of respondents who visit snack vending machines every day feel there are *too many healthy options* compared to respondents who never visit snack vending machines. These results suggest that vendors may be able to increase snack purchases if they offer more healthy choices.

Micro-markets

Of the respondents who work in a building/agency with a micro-market, more than half reported never visiting micro-markets. Respondents reported that one of the most important factors when making a food or beverage choice at the micro-market was the *availability of fresh food*. Moreover, respondents who reported that the *availability of fresh fruits, vegetables, and/or whole (unprocessed) foods/beverages* is important when making a choice reported visiting micro-markets *less frequently*. These results suggest that increasing the availability of healthy and fresh food options may encourage more employees to shop and purchase items from micro-markets.

Institutional Survey

The institutional survey results provide a baseline for the state of implementation of the HNG among DSHS and DOC institutions, and also shed light on some differences in institutional foodservice approaches between the two which impact (both positively and negatively) their ability to offer healthier foods. Differences in kitchen resources, food source guidelines and requirements, resident tastes, staff knowledge and presence of on-site gardens are some examples of differences which impact the types of foods provided. Many opportunities exist for providing technical assistance and resources to both educate institutional staff about the HNG and how to meet them, as well as identifying and helping institutions procure healthy foods- including more Washington grown products.

Limitations

There were a few limitations to this evaluation. First, all data were collected one day at each location (cafeterias, vending machines, and micro-markets), so information captured is a snapshot in time and may not accurately represent each environment between the baseline, mid-implementation, and the 2016 implementation phase evaluations. Moreover, data was collected by three separate sets of researchers in the baseline, mid-implementation, and 2016. While standardization and well-defined criteria for assessing the food service environments was always emphasized, the need for additional clarification emerged between all three evaluation periods and adjustments were made to data collection techniques, food environment assessment criteria, and/or interpretation of the HNG.

Additionally, discrepancies in the classification of food and beverage items between mid-implementation and 2016 skewed the comparison of results between these two evaluation periods. The nutrition database was updated when product ingredients changed or new items were made available for sale in vending machines and/or micro-markets. For example, between the mid-implementation and 2016 implementation evaluation periods, certain food and beverage items that were close to meeting the HNG were exempted and re-classified as compliant. These items were re-classified as a form of compromise with the vendor, who expressed an obligation to continue stocking items that met customer demand, as well as the HNG. Some items were also miss-classified as compliant during the mid-implementation evaluation. For example, during the mid-implementation evaluation, several varieties of Naked Juices that are made with 100% fruit juice were classified as compliant. However, the Naked Juices were sold in packages greater than eight ounces, and were therefore non-compliant with the HNG. This reflects the dynamic and complex conversations on what is healthy, and highlights the importance of considering multiple stakeholder perspectives (i.e. vendors, cafeteria operators, customers) when classifying food and beverage items. From the perspective of customers, vendors, and researchers, it may be confusing that a 16oz drink with 100% juice is non-compliant, but a 12oz diet soda is compliant.

While this assessment provides an accurate depiction of micro-markets, there were a few limitations of data collection. First, photographs of micro-markets were captured on one day only, so if items were not fully stocked the photos may not accurately reflect what is available on most days

Finally, assessment of some criteria depended on self-reporting from cafeteria operators, without the opportunity for verification.

Recommendations

Cafeterias:

- 1) Continue to clarify HNG criteria. This can include clearer definitions for operators, assuring consistency in definitions throughout, and/or re-wording of criteria. For example, confusion still exists regarding which products contain trans-fat and compliant cup sizes.
- 2) Continue to address the HNG criteria that were not met in any of the assessments, and either modify them, identify ways to help operators comply with them or eliminate them. Some of the criteria may not be realistic for cafeterias to implement, or may not help achieve the goals as intended by the Executive Order.
- 3) Continue to identify ways to incentivize cafeteria operators to try new foods/menu items.
- 4) Encourage vendors and cafeteria operators to include taste tests and other vendor-sponsored activities to support vendors and operators in making changes. Identify resources needed by cafeterias to offer taste tests.

Micro-Markets and Vending:

- 5) Continue to explore opportunities to increase the breadth of data collected about micro-markets and vending machines to capture additional information regarding product availability, stock dates, sales trends, and consumer purchasing behavior.
- 6) Continue working with food suppliers to communicate demand for healthier products.

Collaboration/Communication:

- 7) Consider collaborating with School Nutrition advocates who are working with industry to address concerns about “copy-cat” snack foods and to develop new foods that comply with school nutrition Smart Snacks guidelines.
- 8) Continue offering technical assistance and resources to cafeteria operators, including lists of items that meet the nutrition guidelines and sources for purchase, and guidance around promotion of “healthy” foods.
- 9) Increase efforts to share best-practices and success stories between agencies.
- 10) Improve or continue to expand opportunities to build relationships between key stakeholders (i.e. WWCs to WWCs, WWCs to vendors, WWCs to CO’s and CO’s to vendors).
- 11) Continue to identify opportunities to widely celebrate and communicate successes of implementation of healthy nutrition guidelines across agencies.

Employees

- 12) Communicate results of employee survey with employees.
- 13) Further explore customer decision-making around use of micro markets vs. vending vs. cafeterias.
- 14) Explore influence of surrounding food environment (i.e. availability of fast food restaurants, convenience or grocery stores, other options) on employee food purchasing behaviors.

Institutions

- 15) Continue working with institutions to provide technical assistance around HNG and how to comply with them.
- 16) Address barriers cited by institutions to offering healthier foods.
- 17) Address training needs and interests expressed by institutions..

Works Cited

References

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Appendices

Please contact UW Center for Public Health Nutrition for Appendices.