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

2017 EVALUATION

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Three prior reports on the 2014, 2015, and 2016 evaluations can be found here:
http://www.doh.wa.gov/CommunityandEnvironment/
WorksiteWellness/HealthyNutritionGuidelines

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Executive Summary

Overview

In 2013, Washington State 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 potentially affects 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 EO 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 cafés, 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 was 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 the implementation of the HNG. This 2017 implementation evaluation is a follow-up to the baseline and annual evaluations, conducted by CPHN during the summers of 2014, 2015, and 2016.

Evaluation Purpose

The purpose of this 2017 evaluation is to assess the current food environments within state agencies' cafés, micro-markets, and vending machines 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. This evaluation represents the first post-implementation period evaluation.

Methods

CPHN conducted a mixed-method evaluation that included on-site assessments of cafés and micro-markets, analysis of micro-market sales data, and a photographic analysis of vending machines. Data collection and analysis took place from July through September 2017.

Evaluation Data Sources

- Environmental on-site assessment of 9 cafés
- Photographs of 9 micro-markets
- Photographs of 72 vending machines (n=13 beverage machines and 59 snack machines)
- 2017 micro-market sales data from assessment month for 9 micro markets
- 2016 full-year sales data from 20 micro-markets

Results

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

Café Assessments

Basic Criteria

- While no cafés met all nine HNG "basic criteria," all cafés offered whole grains, raw salad-type vegetables, whole fruits, and at least one lean protein option, while eliminating use of trans fat and partially hydrogenated oils.
- Compared to 2016, more cafés offered less than one deep-fried entrée, and more cafés offered low-fat and non-fat milk products
- All cafés received points necessary to comply with the HNG's "additional criteria" requirements.
- All cafés offered at least one non-fried fish option, offered healthy alternatives to butter with bread, offered condiments, sauces, and dressings on the side, and did not market deep-fried specials.
- No cafés made at least half of their grains whole grains.
- No cafés offered only low-fat (1%) or non-fat fluid milk products, or limited their cup sizes to 16 ounces or less.

Proportion of Healthy vs. Unhealthy Foods

- Cafés offered greater proportions (≥51%) of healthy cereal, 100% juice, diet soda, and low-fat milk compared to 2016.
- Most of these healthier products were sold at a price equal to their unhealthy counterparts.

Placement and Promotion

- All cafés offered fruit and vegetables that were well lit and appealing in appearance.
- While more cafés now offer these fruit and vegetables near the point-of-purchase, as compared to in 2016, all cafés continue to offer unhealthy snacks near the point-of-purchase.
- Over half of cafés displayed signs to promote healthy eating habits or choices, but an increased number of cafés display signs promoting unhealthy eating choices, compared to 2016.
- One café displayed nutrition information as "healthy" or "light" without identifying standards for these labels, and no cafés offered nutrition information online.

Vending

- The proportion of compliant vending machines and compliant food items sold in vending machines have increased since the 2016 evaluation.
- While no snack machines were compliant, 32% of snack items were compliant.
- Seven beverage machines (54%) were compliant, 45% of beverages sold were compliant.

Micro Markets

- In micro-markets no snack sections, beverage sections, or entrée sections were compliant with the current 2017 HNG.

- Across all micro-markets, the percent of healthy items sold in 2016 ranged from 24-33% for snack sections, 24-49% for beverage sections, and 12-26% for entrée sections. The average item compliance across micro-market snack, beverage and entree sections was 27%, 39% and 16%, respectively.
- When applying the updated 2017 HNG criteria, 26% of items sold in micro-markets are healthy items and 74% are limited.
- The top-selling foods and beverages in micro-markets in 2016 were cheese squares and string cheese, hard-boiled eggs, and half pints of 2% white milk.

Recommendations

Cafés

1. Determine what support or assistance cafés need to comply with basic criteria.
2. Better define requirement for complete meals (bean/vegetables/fruit/grain) with café managers, or eliminate it if too difficult to communicate.
3. Set up protocol for communicating with cafés during ownership/management transition to ensure information is getting to the right people and new café operators have what they need to meet guidelines.
4. Continue to provide information and resources about beverages so that the number of healthy options in cafés continues to improve.
5. Emphasize the importance of healthy eating promotion/signage to improve customer knowledge and help cafés improve HNG compliance.
6. Encourage vendors to use signage to promote healthy options. Ex. Low-sodium stickers, mark healthy items on menu, mark free water. These are small, cheap, easy changes that would result in higher compliance.

Vending Machines and Micro-Markets

7. Continue working with food suppliers to communicate demand for healthier products.
8. Share information with café operators about top ten most-sold items that are healthy to encourage inclusion and prominent display in micro-markets and vending.
9. Share data with café operators comparing the presence of healthy snack items present vs sold, and encourage regular stocking of greater proportion of healthy items to meet guidelines and promote sales of those items.
10. Continue working with suppliers to acquire sales data so that ongoing analyses can be conducted.

Collaboration/Communication

11. Previous evaluations recommended the provision of technical assistance and resources to café operators, including lists of items that meet the nutrition guidelines and sources for purchase, and guidance around promotion of “healthy” foods. We recommend follow-up interviews to determine the extent these have been carried out and what worked well.

12. Increase efforts to share best practices and success stories between agencies, and recognize cafés successes.
13. Continue to identify opportunities to widely celebrate and communicate successes of implementation of healthy nutrition guidelines across agencies.

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 has the potential to 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 EO 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), based on the 2010 Dietary Guidelines for Americans.[2, 3] These guidelines include criteria to ensure that healthy options are available in cafés, on-site retail venues, vending machines, at meetings and events, and in institutional food service sites.

Implementation of the HNG began on July 1, 2014 with full implementation to have been achieved by December 31, 2016. The State Employee Health and Wellness Steering Committee, staffed in part by WA DOH, is responsible for EO compliance oversight. WA DOH convened a Food Procurement Workgroup to develop a guide for use by agencies and café 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:
https://www.doh.wa.gov/CommunityandEnvironment/WorksiteWellness/HealthyNutritionGuidelines

Due to the far-reaching effects and unique needs of individual agencies and venues, WA DOH allocates staff time to support successful adoption and implementation of the EO. WA DOH was also awarded a 3-year Sodium Reduction in Communities Program (SRCP) grant by the Centers for Disease Control and Prevention (CDC) in 2013, which aimed 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. Although the SRCP ended in 2016, the overlap of these two initiatives provided 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 EO. This evaluation, designed to capture progress in the 2017 implementation year, is the fourth year in a series of evaluations that include baseline and annual evaluations, conducted in 2014, 2015, and

2016. It represents the first evaluation since the December 31, 2016 policy implementation goal stated in the EO.

Evaluation Purpose

The purpose of this implementation evaluation is to assess the current food environments of institutions and venues affected by the EO, six months after the deadline for their full implementation. WA DOH will use these results to inform continuing implementation and future evaluation efforts, assess change in observance of guidelines from baseline, and make recommendations for ongoing implementation of the guidelines.

Key evaluation questions include:

1. How does the EO affect the food environments of affected food service venues, such as worksite cafés, micro markets, and vending machines?
2. How have the food environments changed since the HNG were implemented?
3. To what extent are the HNG being observed across the various food service venues?
4. What impact do the changes at affected food service venues have on micro market sales?

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 cafés, photographic analyses of vending machines and micro-markets, and analysis of micro-market sales data. Data collection took place from July through September 2017. The University of Washington Institutional Review Board determined that this evaluation was exempt from review. Table 1 lists the data sources included in this evaluation.

Table 1. Evaluation data sources

Data Sources	
On-site café assessments	9 cafés
Photographs of micro-market contents	9 micro-markets
Photographs of vending machine contents	72 vending machines
Micro-market 2016 full-year sales data	20 micro-markets
Micro-market 2017 sales data for August	9 micro-markets

Café Assessments

Café 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-CaféteriasImplementationGuide.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.

The assessment tool developed for the baseline evaluation has been updated over time to clarify criteria, and help assure consistency in data collection. CPHN developed a detailed café assessment guide to accompany the tool. See Appendix C for the café assessment tool and Appendix D for the assessment guide.

Nine cafés were sampled for assessment based on (1) location within a large state building in the greater-Olympia area (buildings in which state employees work), and/or (2) their involvement in the Department of Services for the Blind’s Business Enterprise Program (BEP). Olympia is the state capitol, and most agencies’ administrative offices are located in Olympia and surrounding areas. Eight of the cafes are operated by BEP vendors, and one café (Ecology Café) is operated by a food service management company (non-BEP vendor). The Ecology Café was selected for assessment based on location within a large state building in the greater Olympia-area.

Once WA DOH staff informed café operators that CPHN researchers would be contacting them, researchers scheduled on-site assessment visits. One café was remodeled after the 2015 mid-implementation evaluation and was reclassified as a large food service venue for following assessments. Additionally, several cafés changed ownership from baseline to 2017; these changes are marked in Table 2.

Two researchers visited café sites during the months of July and August 2017. Assessments took place between peak breakfast and lunch hours to help ensure consistency and product availability. Each researcher independently completed a predetermined portion of the tool. After each visit, data were compiled and visually inspected for errors. If a researcher was uncertain of the appropriate response, they first spoke with the café operator or café manager (if present) and then discussed the response with the research team. Researchers documented the final decision in the assessment tool comments.

Researchers used REDCap, an electronic database tool hosted at the Institute for Translational Health Sciences, to enter and store all data. REDCap is a secure, web-based application designed to support data capture for research studies.

The primary focus areas of this analysis were:

(1) Café adherence to the HNG basic criteria at the time of the 2017 assessment,
(2) Trends in café observance of the EO from year to year, and
(3) Café observance of additional HNG criteria, including the proportion and pricing of healthy items, and the placement and promotion of healthy items as compared to unhealthy items. When possible, observance of these criteria was also compared between all four evaluation phases.

Table 2. Cafés assessed throughout implementation, by year

Agency	**Food Service Venue**	**Size**	**Surveyed Baseline, 2014 (n=9)**	**Surveyed 2015 (n=10)**	**Surveyed 2016 (n=9)**	**Surveyed 2017 (n=9)**	***Affected by EO 13-06***
Agencies within the Natural Resources Building (NRB)	**City Picnics**	Lrg	Yes	Yes	Yes	Yes	*Yes*
Labor and Industries (LNI)	**Bienvenue Café**	Lrg	Yes	Yes	Yes	Yes	*Yes*
Department of Licensing / Highway Licensing (DOL)	**Taylor Ray's Café**[1]	Med	Yes	Yes	Yes	Yes	*Yes*

Goodrich Building (includes Department of Corrections (DOC) and Department of Transportation (DOT))	**Fresh Taste Café** [2]	Lrg	Yes	Yes	Yes [3]	Yes	*Yes*
Department of Enterprise Services (DES)	**Megabites Deli**	Med	Yes	Yes	No[6]	No[6]	*Yes*
Department of Social and Health Services (DSHS)	**Oasis Café**	Med	Yes	Yes	Yes	Yes	*Yes*
Legislative building	**Dome Deli**	Med	Yes	Yes	Yes	Yes	*No* [4]
Department of Ecology (ECY)	**The Ecology Café!**	Lrg	Yes	Yes	Yes	Yes	*Yes*
Department of Social and Health Services (DSHS)	**Bobby Jayz**	Lrg	Yes	Yes	Yes	Yes	*Yes*
Department of Transportation (DOT)	**Johnny B's Café** [7]	Med	No [5]	Yes	Yes	Yes	*Yes*

[1] Formerly named Hot Little Bistro, changed ownership between the 2016 and 2017 evaluations
[2] Formerly named Courtyard Café, changed ownership between the 2016 and 2017 evaluations
[3] Formerly classified as a medium-sized café
[4] Although technically not covered under EO 13-06, this café is one of two managed by an operator who applies the guidelines to both operations
[5] The café was not in operation during Year 1 evaluations
[6] 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.
[7] Formerly named R-café, changed ownership between the 2016 and 2017 evaluations

HNG Criteria for Vending and Micro-Markets

Between the 2016 and 2017 HNG evaluations, WA DOH updated the criteria for snacks and beverages provided in both vending machines and micro markets to align with Smart Snacks in School standards. These new criteria are often more stringent than the previous HNG despite being was seen as more feasible to implement by vending companies due to them already using Smart Snacks for their school customers. These changes affected both vending machine and micro-market food products. For example, calories allowed in snacks decreased from 250 calories to 200 calories per package, while sodium decreased from 360 mg to 200 mg per package. Grab-n-go entrée calories increased from 500 calories to 700 calories per package; sodium for entrées decreased from 900 mg to 800 mg per package. Fat and sugar guidelines remained unchanged.

Requirement for overall micro-market compliance also changed in 2017. Starting in 2017, 50% of micro-market grab-n-go entrées had to be healthy for a micro-market to be considered compliant (compared to 25% in 2016).

Table 3. HNG requirements before and after 2017 evaluations. (Bolded items changed from 2016 - 2017)

	HNG Before 2017	HNG 2017
Snack Items		
Calories	• **≤250 calories/package**	• **≤200 calories/package**
Fat	• ≤35% of calories from fat • ≤10% calories from saturated fat • 0g trans-fat	• ≤35% of calories from fat • ≤10% calories from saturated fat • 0g trans-fat
Sugar	• ≤35% of weight from total sugar	• ≤35% of weight from total sugar
Sodium	• **≤360 mg/package**	• **≤200 mg/package**
Beverages		
Beverages	• Water • Unsweetened tea or coffee • **Low- and No- calorie beverages: ≤25 calories/8 ounces** • **Non-caloric, artificially sweetened beverages** • **100% vegetable juice: ≤ 230 mg sodium/serving** • **100% fruit juice – no added sugar ≤8 ounces** • **Unflavored fat-free and 1% milk and milk products: < 100 calories/8 ounces** • **Fat-free or 1% flavored milk: ≤22g sugar/8 ounces**	• Water • **Low-calorie beverages: ≤40 calories/8 ounces or ≤60 calories/12 ounces** • **No-calorie beverages: ≤5 calories/ 8 ounces or ≤10 calories/20 ounces** • 100% fruit juice with no added sweeteners • **≤12 ounces unflavored 1% milk** • **≤12 ounces unflavored or flavored non-fat milk**
Entrée Items		
Calories	• **≤500 calories/package**	• **≤700 calories/package**
Fat	• ≤35% of calories from fat • ≤10% of calories from saturated fat • 0g trans fat	• ≤35% of calories from fat • ≤10% of calories from saturated fat • 0g trans fat
Sugar	• ≤35% of weight from total sugar	• ≤35% of weight from total sugar
Sodium	• **≤900 mg/package**	• **≤ 800 mg/package**

Vending

The HNG for vending machines includes two categories of foods and beverages: healthy or unhealthy (criteria available at http://www.doh.wa.gov/Portals/1/Documents/Pubs/140-168-HealthyNutritionGuidelinesVending.pdf).

To meet HNG compliance, 50% of vending machine products must be healthy items. Researchers gathered and analyzed vending machine data via a photo-evidence protocol. CPHN and WA DOH researchers worked with Evergreen Vending to establish a protocol where Evergreen Vending staff photographed the contents of each vending machine, as it was serviced and restocked (see Appendix E for vending machine photograph protocol). Evergreen Vending staff photographed vending machines in the buildings they service; WA DOH staff photographed the beverage machines in the WA DOH building complex. Photographs documenting the contents of 72 machines were taken in 64 buildings; representing 38 different agencies (see Table 4 for agencies included in vending machine assessments). Of the machines assessed, 59 were snack machines and 13 were beverage machines. It is important to note that the total number of snack and beverage machines is unknown, so we are unable to report the proportion of machines assessed for this evaluation.

Table 4. Number of beverage and snack vending machines assessed, by agency

Agency	# of Beverage Machines	# of Snack Machines
Department of Health (4 buildings)	7	2
Department of Retirement Systems (2 buildings)		2
Department of Services for the Blind (1 building)		1
Department of Social and Health Services (6 buildings)		6
Labor & Industries (1 building)	3	0[1]
Licensing Department (4 buildings)		4
Department of Natural Resources (2 buildings)		2
Department of Enterprise (6 buildings)		6
Department of Forest & Wildlife (2 buildings)		2
Department of Transportation (4 buildings)		4
Department of Corrections (2 buildings)		2
Department of Revenue (1 building)	1	0[1]
Capitol Leg (1 building)	2	1
Administration for the Courts (1 building)		1
Administration Office – Courts (1 building)		1
Department of Agriculture (1 building)		1
Department of Commerce (1 building)		1
Department of Early Learning (1 building)		1
Department of Ecology (1 building)		1
Industrial Insurance (1 building)		1
Insurance /Building (1 building)		1
Insurance Commission (1 building)		1
Irv Newhouse Building (1 building)		1
John A Cherberg Building (1 building)		1
Legislative Service Center (1 building)		1
Legislative Support Services (1 building)		1
Office of Administration (1 building)		1
Office of Financial Recovery (1 building)		1
Pritchard Building (1 building)		1
State Library (1 building)		1

State Office Building #2 (1 building)		1
Department of Veterans Affairs (1 building)		1
Dolliver Building (1 building)		1
Employment Security (1 building)		1
Utilities/Transportation (1 building)		1
Washington State Investment Board (1 building)		1
Washington Student Achievement Council (1 building)		1
Washington State Parks (1 building)		1
Washington State Patrol (1 building)		1
WATECH (1 building)		1
TOTAL	**13**	**59**

[1]Labor & Industries and Revenue do not have snack machines

Research staff analyzed images of each vending machine by recording the total number of slots stocked with an identifiable food or beverage product. If an item was not identifiable in a submitted photograph, it was excluded from the analysis. Researchers matched identifiable food and beverage products to a nutrition database that categorized each item as approved (healthy) or not approved (limited) based on the HNG criteria. Researchers then calculated the proportion of healthy versus limited items available in each vending machine as the primary outcome measure.

Micro-Markets

In the 2015, 2016, and 2017 evaluations, researchers assessed (1) micro-market compliance with the HNG (see Appendix F for micro-market guidelines), and (2) the percent of micro-market items sold that were either healthy or limited. The top ten snack, beverage and entrée items sold were also reported. There were no micro-markets included in the baseline evaluation (2014), because they did not yet exist.

HNG Compliance Site Audits

As with vending machines, micro-market snack and beverage items were compliant if at least 50% of the items available for sale were healthy, according to the HNG. In addition to snacks and beverages, micro-markets sell "grab-n-go entrées" which are also classified as healthy or limited under the HNG. At least 50% of entrees available for sale at must be healthy for the micro-market to be considered compliant with the EO. This compliance requirement is an increase from 2016, which required only 25% of entrées to be healthy for micro-market compliance.

From July to August 2017, researchers assessed nine micro-markets from five state agencies. To assess compliance with the HNG, researchers used a standard protocol to photograph micro-markets (see Appendix G for micro-market photography protocol). Research staff analyzed the images from each of the micro-markets and coded all food and beverage items that were available for sale. Researchers matched snack and beverage items, as well as grab-n-go entrées, to the nutrition database in order to determine their healthy/limited status. Researchers calculated the proportion of healthy versus limited snack, beverage, and entrée items as the primary micro-market outcome measure. Items with missing nutrient data were excluded from analyses.

Full-Year 2016 Sales Data Analysis

A micro-market operator shared their 2016 micro-market sales data with WA DOH and CPHN researchers. These 2016 sales data included the product name, product category, quantity sold of each product, dollar amount sold of each product, sales month, and agency where the micro-market is located. The micro-market operator shared data for all 20 of their micro-markets. While the micro-market operator shared sales data from all of 2016, not all micro-markets were operating for the entire year; several agency micro-markets only had data for the latter half of 2016.

To analyze the micro-market sales data, CPHN researchers first matched the food and beverage products sold in 2016 to a nutrition database containing the ingredients and nutrition information for each product. This nutrition database contained (approved) healthy/ (not approved) limited status, under the previous HNG guidelines, for all products sold in previous evaluation years. For products that were not in this earlier nutrition database, CPHN researchers worked with the micro-market operator and WA DOH to retrieve the nutritional information for each product present in this year's evaluation, and add these items to the nutrition database. WA DOH created an "approved/not approved" list for items without nutrition information, using 2017 nutrition guidelines. Thus, these items added to the nutrition database in 2017 did not have the previously determined 2016 HNG status. We did not recalculate this status for these new items per the outdated HNG, and in analyses including the variable 2016 HNG status, these items (n=139) are categorized as "status not calculated."

To determine healthy/limited status, researchers categorized all items (n=524) as healthy/limited based on their nutritional content and the updated 2017 HNG standards. After multiple attempts to locate nutrition information, there were a small number (n=16) of remaining products that could not be located. We included these items in the sales data analysis categorized as "missing nutrition information" rather than healthy/limited. Researchers used Stata (version 14.2) for all analyses.

The primary outcome measures in this sales data analysis are: (1) top food/beverage items sold quarterly, (2) total quantity sold of "healthy" and "limited" products as categorized by the 2016 *and* the 2017 HNG standards, (3) total quantity sold by beverage type.

August 2017 Sales Data Analysis

August sales data were analyzed so that sales data could be compared with actual food items available during the site audits, which took place during this month. To determine healthy/limited status, researchers used Stata (version 14.2) to categorize all items as healthy/limited based on their nutritional content and the updated 2017 HNG standards.

The primary outcome measures in the sales data analyses are: (1) top food/beverage items sold during the month, and (2) total quantity sold of "healthy" and "limited" products as categorized by the updated 2017 HNG standards

Results

Café Assessments

Researchers assessed nine cafés– four medium and five large. Among these were eight cafés researchers had assessed at baseline (2014). This year, 2017, researchers assessed the same nine cafés assessed in both 2015 and 2016 (Table 5).

Basic Criteria

While no cafés satisfied all nine basic criteria, all cafés demonstrated partial observance by meeting some of the basic criteria:

All nine cafés assessed offered:

- At least one whole grain
- At least one raw, salad-type vegetable
- At least one lean protein option
- No meal items containing artificial trans-fat or partially hydrogenated oils

More than half of cafés offered:

- At least one low-fat free milk product
- No more than one deep-fried option daily
- Promoted free water

Fewer than half of cafés offered:

- At least three whole or sliced fruits
- Offered and promoted a low-sodium entrée or meal

Baseline to 2017 Implementation Phase Comparison

Table 5 compares compliance with the HNG basic criteria at baseline (2014), 2015, 2016, and 2017. In 2017, all cafés continued to offer sufficient numbers of whole grain and lean protein options, and more cafés offered fat-free milk products. However, since the 2016 evaluation, fewer cafés were observed offering at least three whole or sliced fruit varieties. Less than one-fourth of cafés assessed received points for offering AND promoting low-sodium meals. While many cafés offered low sodium options, they did not promote them. Table 6 shows total basic criteria points earned by each café across evaluation years.

Table 5. Numbers of cafés meeting basic criteria, by year.

Criteria (Required for all food service venues)	**# Cafés**			
	Baseline (n=9)	2015 (n=10)	2016 (n=9)	2017 (n=9)
Whole Grain *Large: Do you offer two whole grain rich options daily?* *Medium: Do you offer at least one whole grain rich option daily?*	0	10[1]	9[1]	9[1]
Vegetable *Large: Do you offer at least one raw, salad-type and at least one steamed, baked or grilled vegetable daily?* *Medium: Do you offer at least one raw, salad-type vegetable daily?*	not assessed	10[1]	9[1]	6
Fruit *Large/Medium: Do you offer at least three whole or sliced fruits daily?*	7	7	9[1]	3
Lean Protein *All: Do you offer at least one lean meat option such as poultry, fish, or a low-fat vegetarian option?*	9[1]	10[1]	9[1]	9[1]
Low Sodium Entrée *All: Do you offer and promote at least one low sodium entrée?*	0	0	2	2
Deep-Fried *All: Do you offer no more than one deep-fried entrée option daily?*	8	7	5	8
Oils (trans-fat, partially hydrogenated oils) *All: Are all meal items free of artificial trans-fat or partially hydrogenated oils?*	not assessed	10[1]	6	9[1]
Low-Fat and Non- Fat Milk Products *All: Do you offer at least one low-fat and one non-fat milk product?*	5	7	4	7
Water *All: Do you offer free water and advertise its availability?*	1	5	8	5

[1]All cafés in assessment year met criteria

Table 6. Basic criteria café scores (full compliance = 25 pts)

Café Code	2015 Score	2016 Score	2017 Score	Change from 2016 to 2017
Medium Size Café				
C[1]	22	20	15	-5
E	15	17	19	2
G[2]	15	*n/a*	*n/a*	*n/a*
I	20	15	15	0
J[1]	14	23	17	-6
Large Size Café				
A	22	19	16	-3
B	17	19	19	0
D	22	20	17	-3
F	22	19	22	3
H	17	19	22	3

[1] Change of management occurred in summer of 2017, shortly before assessment visits

[2] Café not assessed 2016-2017

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

As in previous years, all cafés met requirements for compliance with the HNG's additional criteria. To be compliant, large and medium food service venues had to earn an additional 25 or 10 points, respectively, by implementing their choice of beverage, food component, and behavioral economic approaches. However, despite overall compliance, just over half of the cafés assessed received fewer points in 2017 than in 2016. Four cafés earned an equivalent or greater number of points than their 2016 assessment score. Table 7 shows the total number of additional criteria points earned by each café.

Table 7. Additional criteria café scores

Café Code	2015 Score	2016 Score	2017 Score	Change from 2016 to 2017
Medium Size Café (≥10 pts = compliance)				
C[1]	24	27	23	-4
E	16	34	27	-7
G	19	-	-	-
I	24	24	21	-3
J[1]	28	47	34	-13
Large Size Café (≥25 pts = compliance)				
A	26	33	37	4
B	30	22	38	16
D	32	27	35	8
F	40	45	36	-9
H	25	31	31	0

[1]Change of management occurred in summer of 2017, shortly before assessment visits

Beverage and Food Component Assessment

All nine cafés assessed offered at least one non-fried fish option, a healthy option with bread in place of butter, and condiments, sauces, and dressings on the side of a meal. Compared to 2016, more cafés offered smaller portion sizes of desserts, at least one Washington grown food product, zero and low-calorie beverages, low-fat or non-fat milk or cheese products as the default, and low sugar/high fiber cereals. However, fewer cafés offered half-sized portions and whole grain items as the default option. There was also an increase from 2016 in the number of cafés offering free refills of sugar-sweetened beverages. Table 8 lists the results from the food and beverage component assessment.

Table 8. Proportion of cafés observing additional criteria for food and beverages

	2015	2016	2017
Full Observance in 2017 compared with previous years			
Offer condiments, sauces, and dressings on the side	10/10	9/9	9/9
Offer at least one non-fried fish or seafood option *per week*	10/10[1]	9/9[1]	9/9[1]
Offer healthy option with bread in place of butter	1/5[2]	8/9	9/9
Observed by more than half of cafés in 2017 compared with previous years			
Offer at least one oil and vinegar based salad dressing that is also low in sodium	7/9[2]	9/9	8/9
Desserts are offered in smaller portion sizes (2 oz)	9/10	6/9	7/9
Fruit is located in close proximity to dessert options	5/10	7/9	7/9

No free refills of sugar-sweetened beverages	9/9[2]	8/8[2]	6/8[2]
Offer low-sugar, high fiber cereals (≤6g sugar and ≥3g fiber)	2/4[2]	0/4[2]	3/4[2]
Al least one Washington grown food product is available at all times	7/10	3/9	6/9
Non-fried vegetables or fruit are the default side dish with meals	0/3[2]	6/8[2]	6/9
Allow substitution of non-fried vegetable side dish for no extra charge *and* this item is promoted	5/7[2]	5/7[2]	5/8[2]
Half sized portions are available for at least half of all entrée items *and* this item is promoted	4/10	7/9	5/9
Offer a salad bar	6/10	6/9	5/9
Observed by less than half of cafés in 2017 compared with previous years			
If SSBs are offered, an equal number of zero and low calorie beverages must also be offered	1/10	1/9	4/9
Offer only 100% fruit juices with no added sugar	0/10	1/9	2/9
For breakfast foods, offer small portions of muffins, quick breads, and bagels (3-3.5 oz)	3/10	3/9	2/9
Low-fat (1%) or non-fat milk are default milk option (ex. In coffee drinks)	1/8[2]	1/9	2/8[2]
Vegetable juices offered contain 230 mg or less sodium per serving	1/8[2]	1/7[2]	1/6[2]
Serve one meal *per day* that provides at least three of the following: one serving of fruits, vegetables, beans, or whole grains[3]	7/10	9/9	1/9
Coffee service has milk option as a default rather than cream or half and half *and* no containers of cream or half and half are available/must be requested	0/10	1/9	1/9
For cheese, yogurt and other milk products, offer low-fat and non-fat products as the default options	0/10	0/9	1/9
Only offer yogurt with no added caloric sweeteners or labeled as reduced/less	0/9[2]	1/9	1/8[2]
No Observance			
When grains are offered, whole grain is the default option for half of meals	0/10	2/8[2]	0/9
Offer only low-fat (1%) and non-fat fluid milk products	0/9[2]	0/9	0/9
Cup sizes no larger than 16 oz	1/8[2]	0/9	0/9

[1] Includes tuna salad sandwiches

[2] The denominator for some criteria is less than 9 because not all criteria were relevant to each café. For example, a café may not have offered a default side or may not have coffee service.

[3] Variation occurred between years when assessing if meals offered at least 3 servings of either whole grain, beans, fruit, or vegetable making it difficult to compare (e.g., year-to-year researchers did not consistently count salad bars offering beans and fruit or whole grain sandwiches with lettuce and tomato as complete servings)

Behavioral Economics

Over half of the cafés were compliant with each of the Behavioral Economics criteria, and no cafés marketed deep-fried options. Compared to previous years, the number cafés that sold healthier options of chips, cereal, yogurt, milk, soda, **and** juice at equal or lower price than equivalent regular items increased. However, fewer cafés displayed promotional signs and fewer cafés promoted healthier items with these signs compared to 2016. In addition, fewer cafés trained employees to prompt healthy food choices, or café employees did not serve these items. Table 9 shows the results of the behavioral economics assessment.

Table 9. Proportion of cafés applying behavioral economics strategies for food and beverages

Behavioral Economics Criteria	2015	2016	2017
No marketing of deep-fried options as the special or feature of the day	8/10	7/9	9/9
At least 75% of promotion signage is for healthier items	5/10	7/9	4/6[1]
Healthier options of chips, cereal, yogurt, milk, soda, and juice are sold at equal or lower price than equivalent regular items.	9/10	1/9	5/9
Zero and low-calorie beverages are listed before sugar-sweetened beverages on the menu	0/9[1]	1/3[1]	2/4[1]
Healthier items placed more prominently – closer to customers and at eye level	6/10	4/9	4/9
Employees are trained to prompt customers to choose non-fried vegetables when ordering	1/10	1/7[1]	1/3[1]
Healthier options are listed first for each category of the menu	0/10	2/9	2/7[1]
Employees are trained to prompt customers to choose zero- and low-calorie beverages when ordering	0/10	1/3[1*]	*n/a*[*]

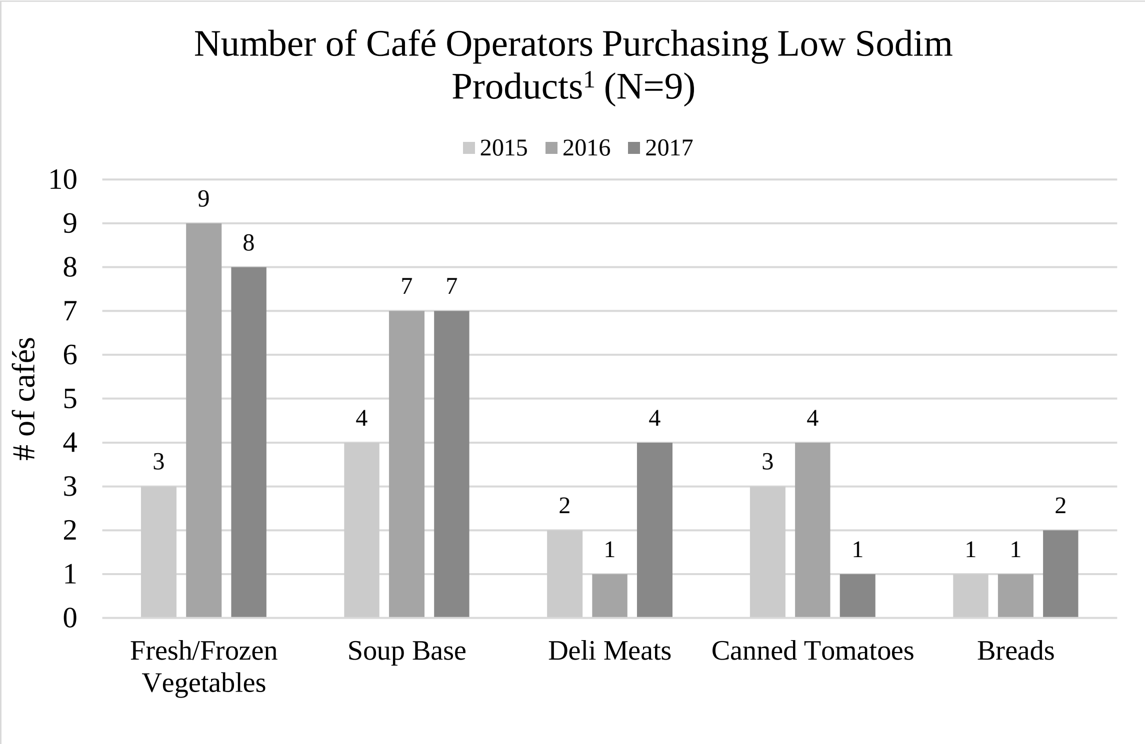
[1] The denominator for some criteria is less than total sample size because not all criteria were relevant to each café. For example, a café may not have offered a default side or may not have coffee service.

*In 2016 the majority, and in 2017 all café beverages were self-serve or grab-n-go. This category does not include coffee service.

Low Sodium Products Offered

During each café visit, researchers asked the café manager or operator if they purchased low sodium soup bases, deli meats, canned tomatoes, fresh/frozen vegetables, or grain products. Figure 1 shows the most frequently purchased low sodium products. Cafés reported increased use of low-sodium deli meats (n=4) compared to previous years. In addition, most café operators reported using fresh over frozen vegetables (n=8). Four cafés reported that they do not purchase canned tomatoes, focusing on use of fresh produce. Most cafés also reported using homemade soup bases to control the amount of sodium added (n=7). Many café operators expressed that cost is a barrier to purchasing low sodium products, such as deli meats.

Figure 1. Total number of café operators purchasing specific low sodium products



[1] Data were self-reported by café operators

Healthy vs. Unhealthy

Researchers assessed and compared the proportion and price of healthy and unhealthy food and beverage products offered in each café. While these criteria *are not included* in the HNG, they are helpful to describe the current food environment. Figure 2 shows the number of cafés that met each criteria. Table 9 compares the prices of regular snack and beverage items to their healthier equivalent.

All cafés allowed substitution of a side for a salad or fresh vegetables at no additional cost. Of the cafés that offered a salad bar, all offered a low-fat dressing. In addition, no café automatically included chips as a side and most did not automatically include fries as a side. Compared to past years, more cafés offered a whole grain starch side without added sauce and the same number of cafés offered a non-cream based soup. However, compared to 2016, fewer cafés offered healthy tea or fruit juice options in the fountain machine, and no café offered at least 50% of sodas as diet.

Figure 2. Number of cafés meeting healthy criteria (blue) vs. unhealthy criteria (red), by year.

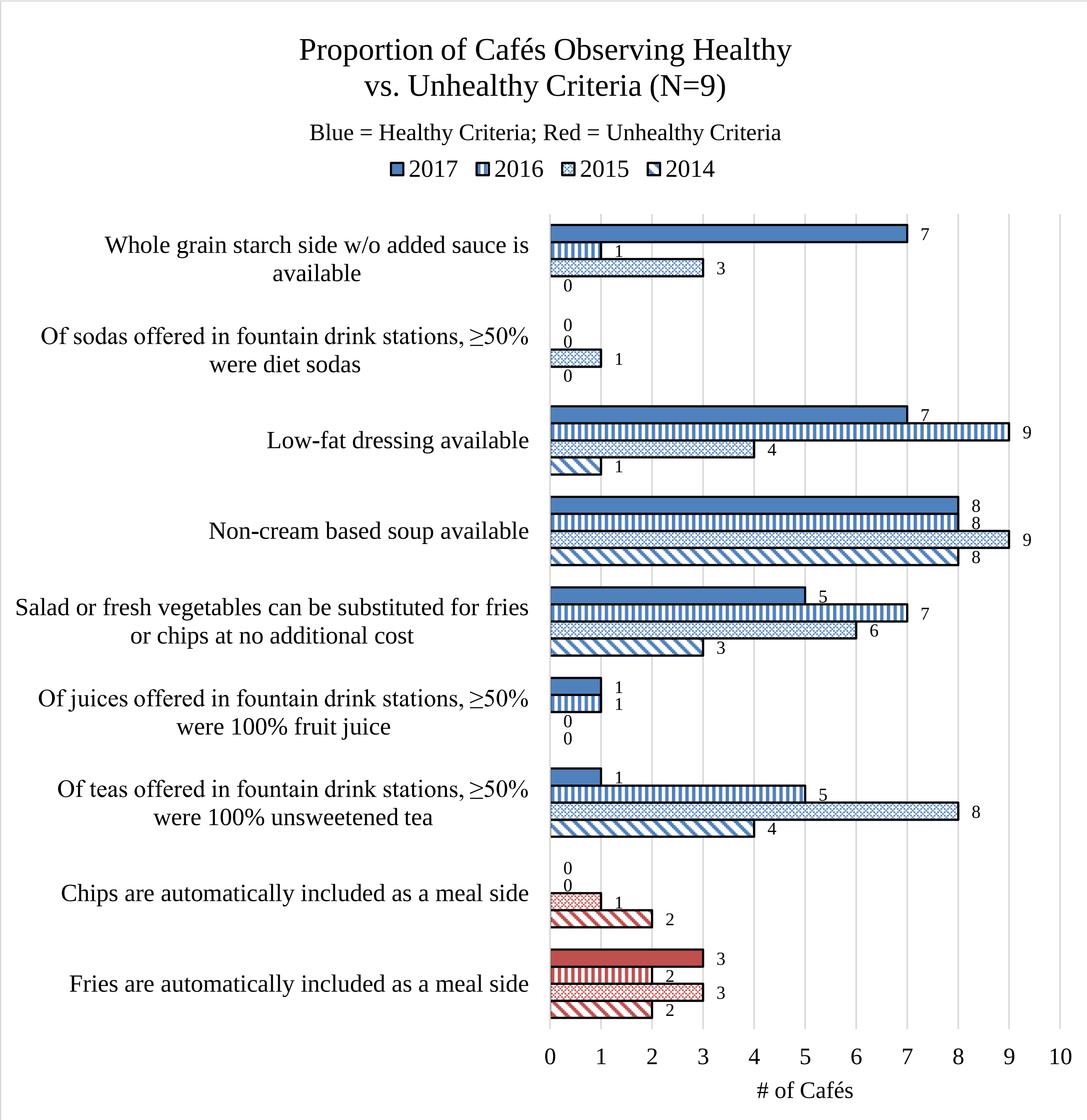


Table 10 compares the price of healthy products to their unhealthy equivalents by year. Most healthy products were priced the same as their unhealthy equivalent across all years. Few cafés sold healthy products at a higher price than unhealthy products. In 2017, cafés that offered healthy and unhealthy yogurt, milk, and soda priced these products equally. Healthy teas and juices were sold at either the same or a lower price than unhealthy products. In addition, nine cafés offered both healthy and unhealthy chips options compared to only four cafés in 2016.

Table 10 Series. Number of cafés offering healthy products at more, less, and equal pricing compared to unhealthy products, by product and year.

Chips Pricing	**# of Cafés**			
	2014	2015	2016	2017
$ healthy < $ unhealthy	1	0	0	1
$ healthy = **$** unhealthy	5	6	4	7
$ healthy > **$** unhealthy	0	0	0	1
Total # of cafés offering healthy & unhealthy options	**6**[1]	**6**[1]	**4**[1]	**9**

Yogurt Pricing	**# of Cafés**			
	2014	2015	2016	2017
$ healthy < $ unhealthy	0	3	2	0
$ healthy = **$** unhealthy	4	2	2	3
$ healthy > **$** unhealthy	1	0	0	0
Total # of cafés offering healthy & unhealthy options	**5**[1]	**5**[1]	**4**[1]	**3**[1]

Milk Pricing	**# of Cafés**			
	2014	2015	2016	2017
$ healthy < $ unhealthy	0	2	0	0
$ healthy = **$** unhealthy	4	1	9	7
$ healthy > **$** unhealthy	0	0	0	0
Total # of cafés offering healthy & unhealthy options	**4**[1]	**3**[1]	**9**	**7**[1]

Soda Pricing	**# of Cafés**			
	2014	2015	2016	2017
$ healthy < $ unhealthy	1	0	0	0
$ healthy = **$** unhealthy	6	10	7	8
$ healthy > **$** unhealthy	0	0	0	0
Total # of cafés offering healthy & unhealthy options	**7**[1]	**10**	**7**[1]	**8**[1]

Juice Pricing	**# of Cafés**			
	2014	2015	2016	2017
$ healthy < $ unhealthy	1	4	1	3
$ healthy = **$** unhealthy	7	6	7	4
$ healthy > **$** unhealthy	1	0	0	0
Total # of cafés offering healthy & unhealthy options	**9**	**10**	**8**[1]	**7**[1]

Tea Pricing	**# of Cafés**			
	2014	2015	2016	2017
$ healthy < $ unhealthy	0	1	1	3
$ healthy = **$** unhealthy	5	6	6	6
$ healthy > **$** unhealthy	0	1	0	0
Total # of cafés offering healthy & unhealthy options	**5**[1]	**8**[1]	**7**[1]	**9**

[1] The denominator for some items is less than the total number of cafés assessed because not all cafés offered each item, and were therefore not included in this analysis.

Table 11 lists the proportion of cafés that offered a greater percentage of healthy food (cereal, chips, and yogurt) and beverage (milk, soda, and juice) choices at baseline (2014), 2015, 2016, and 2017 evaluation phases. In 2017, more cafés offered a greater proportion of healthy cereal, milk, soda, and juice compared to 2016. In seven cafés, ≥51% of juices offered were 100% juice or low-sodium juice. Similarly, more cafés also offered a higher proportion of low-sugar/high fiber cereal. Compared to past evaluation years, in 2017 all cafés offered yogurt, and one café offered over 50% of their yogurts as low or reduced-fat options. There was no change in the number of cafés that offered low-fat chips or skim/1% milk, or the proportion that offered at least 50% as healthy options.

Table 11. Proportion of cafés offering at ≥ 51% healthy options by food category, by year

Category	2014, Baseline[1]	2015[1]	2016[1]	2017[1]
Low-sugar/High Fiber Cereal	1/5	0/4	0/4	1/4
Low-fat Chips	0/9	0/10	0/9	0/9
Low or Reduced-fat Yogurt	1/7	7/8	1/7	1/9
Skim or 1% Milk	0/9	0/8	2/9	2/9
Diet Soda	0/7	1/9	1/7	1/8
100%/Low-sodium Juice	2/9	5/9	4/9	7/9

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

Placement and Promotion

The final section of the café assessment evaluated the placement and promotion of healthier items in the café. Although these are not part of the scored HNG criteria, the results help to further describe the café food environment. Table 12 lists the number of cafés that observed each criteria. All cafés provided fruit and vegetables that were well lit and appealing in appearance. In addition, most cafés offered Washington grown products and displayed signs that encouraged healthy eating habits over unhealthy eating habits. While eight cafés offered fruit and five cafés offered vegetables near the point of purchase, all cafés also placed unhealthy items near the point of purchase. No cafés offered nutrition information on the internet, listed standards to identify “healthy” and “light” when terms used, or displayed signs that promoted overeating. These findings have remained constant throughout all assessments years.

Table 12. Café placement and promotion criteria, by year.

Criteria	# Cafés			
	2014, Baseline	2015	2016	2017
Positive Indicators				
Café has signs or other displays that encourage general healthy eating or healthy food choices (posters on wall, signs, table tents, etc.)	2/9	8/10	8/9	7/9
Feature of the day or special combination meal is promoted	8/9	10/10	9/9	8/9
Café has other information about promotions or pricing strategies (farmers markets, discounts on healthy items, locally grown, etc.)	0/9	0/10	2/9	2/9
Brochure/nutrition information is on the intranet/internet	4/9	1/10	0/9	0/9
Healthier options are indicated on salad bar (Go, Slow, Whoa icons or other systems)	0/9	0/10	2/9	2/9
Café identifies menu items as “healthy” or “light”	2/9	1/10	3/9	0/9
When terms “healthy” or “light” are used, standards are listed for these items	1/9	0/10	0/9	0/9
Nutrition information is posted on menu boards, brochures, or in other display areas	1/9	1/10	3/9	1/9
Fruit is well lit	9/9	7/10	9/9	9/9
Fruit is appealing in appearance (looks fresh, not bruised, etc.)	6/9	9/10	7/9	9/9
Some fruit is located near the register/point of purchase	7/9	4/10	5/9	8/9
Vegetables are well lit	7/9	8/10	8/9	9/9
Vegetables are appealing in appearance (looks fresh, not discolored, etc.)	8/9	10/10	9/9	9/9
Some vegetables are located near the register/point of purchase	2/9	2/10	2/9	5/9
Washington-grown products are available	1/9	7/10	4/9	6/9
Washington-grown products are promoted/marketed	0/9	0/10	2/9	1/9
Negative Indicators				
Café has signs or displays that encourage less healthy eating or less healthy food choices	3/9	4/10	2/9	5/9
Café has signs or displays that encourage overeating (supersizing, all you can eat, etc.)	1/9	0/10	0/9	0/9
Unhealthy items are located near cash register/point of purchase	9/9	10/10	9/9	9/9

Vending

Researchers assessed 59 snack machines and 13 beverage machines for compliance with the HNG. Researchers categorized products as healthy or limited based on calories, sugar, fat, whole grain, and sodium criteria. At least 50% of vending products must be healthy in order for the machine to be considered compliant.

Vending Compliance, By Machine

Sampling methods for vending machines varied from year to year. Table 13 compares the proportion of compliant machines within agencies during the years since the baseline evaluation. Specific machines within agencies were not matched to one another, and the total machines assessed vary across years. Table 13 shows vending machine data for agency buildings where any machines were evaluated in all years (2015, 2016, and 2017).

Table 13. Snack and beverage vending machine compliance by agency and year

Agency, 2017 Assessment	**# Machines Compliant / # Total Machines (%)**	
	Snack Vending	**Beverage Vending**
Department of Health	0/2	4/7
Department of Services for the Blind	0/1	*n/a*
Department of Social & Health Services	0/6	*n/a*
Department of Licensing	0/4	*n/a*
Natural Resource Building	0/2	*n/a*
Department of Retirement Systems	0/2	*n/a*
Department of Veteran Affairs	0/1	*n/a*
Legislative Building	0/1	1/2
Health Care Authority	*n/a*	*n/a*
Labor & Industries	*n/a*	1/3
WA State Lottery	*n/a*	*n/a*
Department of Revenue	*n/a*	1/1
Total	**0/19 (0%)**	**7/13 (54%)**

Agency, 2016 Assessment	**# Machines Compliant / # Total Machines (%)**	
	Snack Vending	**Beverage Vending**
Department of Health	2/5	5/10
Department of Services for the Blind	0/1	0/1
Department of Social & Health Services	0/5	5/10
Department of Licensing	0/13	4/16
Natural Resource Building	0/3	4/7
Department of Retirement Systems	0/1	1/1

Department of Veteran Affairs	0/2	*n/a*
Legislative Building	*n/a*	*n/a*
Health Care Authority	0/1	3/3
Labor & Industries	*n/a*	1/3
WA State Lottery	*n/a*	*n/a*
Total	**2/31 (6%)**	**23/51 (45%)**

Agency, 2015 Assessment	# Machines Compliant / # Total Machines (%)	
	Snack Vending	**Beverage Vending**
Department of Health	0/6	4/10
Department of Services for the Blind	0/1	0/1
Department of Social & Health Services	0/28	5/20
Department of Licensing	0/1	3/5
Natural Resource Building	0/1	3/5
Department of Retirement Systems	0/	1/1
Department of Veteran Affairs	0/2	2/4
Legislative Building	*n/a*	*n/a*
Health Care Authority	0/2	2/2
Labor & Industries	0/1	0/3
WA State Lottery	0/2	0/1
Department of Revenue	*n/a*	2/4
Total	**0/45 (0%)**	**22/56 (39%)**

It is important to note that while agencies were matched year-to-year for analysis, individual vending machines were not necessarily the same across assessment years. It is also important to note that the 2017 HNG, which now align with Smart Snacks in Schools standards, are often more stringent compared to past years, meaning fewer products are considered compliant.

Of the beverage machines assessed across all agencies, over half were compliant, and every agency had at least one compliant beverage machine. Of the two agencies examined in 2015, 2016, and 2017 (DOH and L&I), beverage machine compliance increased for both agencies. From 2014 to 2017, the proportion of compliant machines increased each year. In 2017, all beverage machines were within 15% compliance of the HNG guidelines (Figure 3). This was an improvement from past years, where, in 2016, only 73% of machines were within 15% compliance. Although no snack machines were compliant, Figure 4 shows the proportion of snack machines that were within 15% compliance. This snack machine compliance is an increase from 21% of machines within 15% compliance in 2016.

Figure 3. Proportion of compliant **beverage vending machines**, by agency.

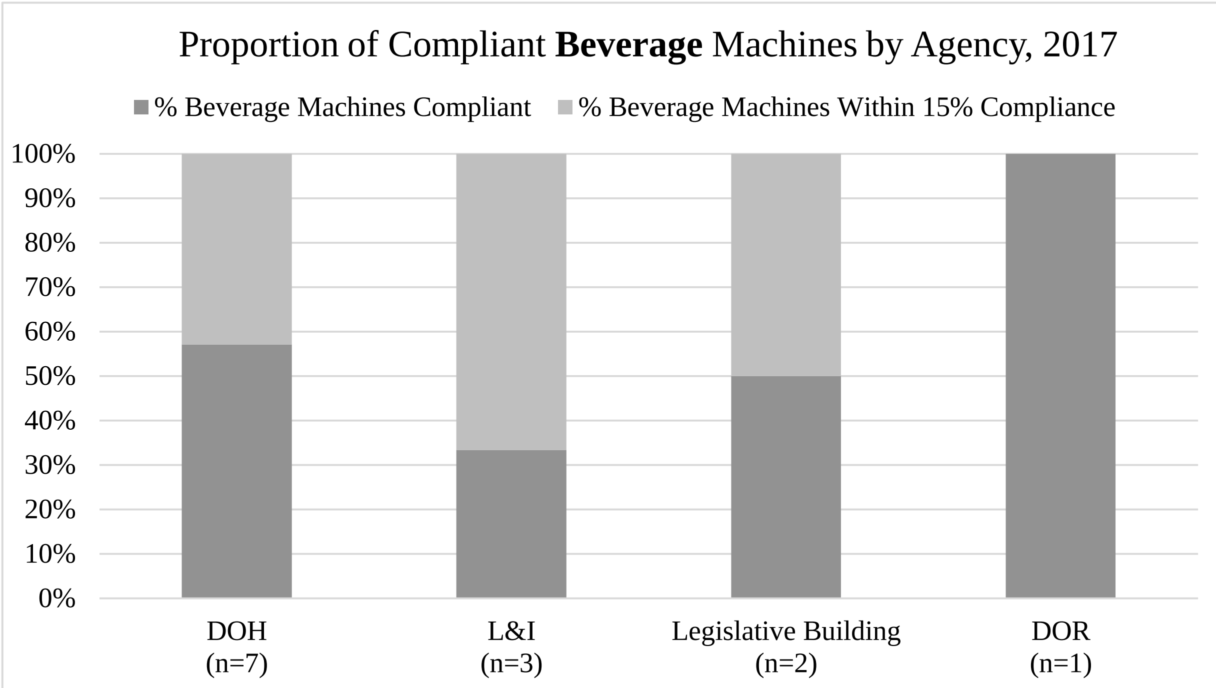
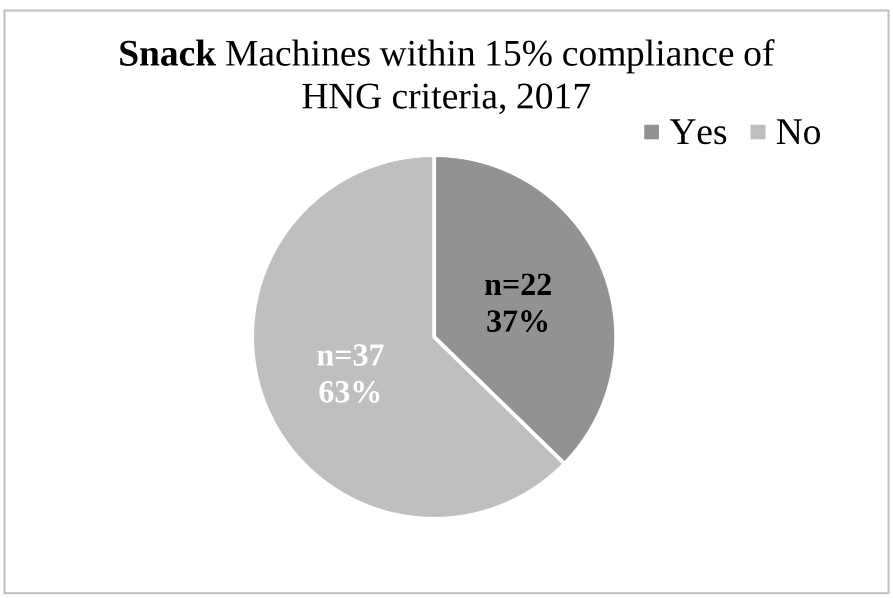


Figure 4. Total proportion of all **snack vending machines** within 15% compliance



Vending Compliance, By Individual Food and Beverage Item

While no snack vending machines were HNG compliant in 2017, an average of 32% of all *items* within each snack vending machines were healthy. Snack item approval within each machine ranged from 23-41% across all 59 machines. This was an increase from 6% average healthy snack items in 2015, and 15% average healthy snack items in 2016. These data demonstrate an upward trend towards improved snack compliance.

For beverage machines, while beverage vending *machine* compliance ranged from 33-100% with an average of 54% compliance, the proportion of healthy beverage *items* within each machine ranged from 39-50% with an average of 45% healthy beverage items. Beverage machine compliance improved from 38% in 2015, to 45% in 2016, to 54% in 2017.

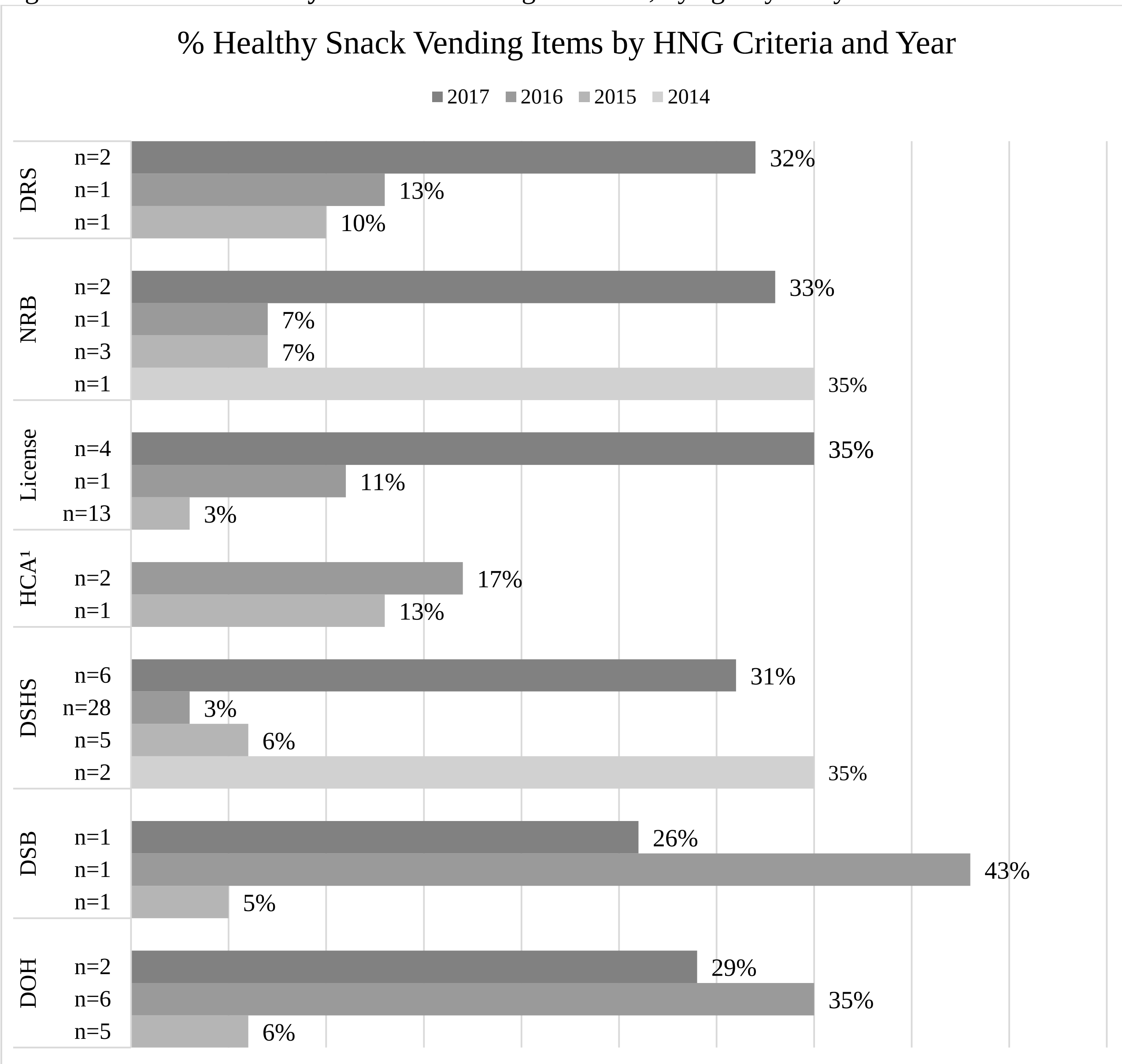
Similar to snack vending machines, the number of healthy beverages within machines has improved year over year, from 39% in 2015, to 43% in 2016, and 45% in 2017. Table 14 shows all healthy snack and beverage vending machine items according to HNG guidelines included in the 2017 assessment. Figures 5 and 6 show the proportion of healthy snack and beverage vending machine items in agencies that were assessed at 2014 (baseline), 2015, 2016, and 2017. Data from 2014 were included when applicable.

Table 14. Percent of Healthy snack and beverage items by building, 2017.

Building	# of Machines	# of Items	% **Items** Healthy by HNG Criteria
Snacks			
Admin of Courts	2	60	33%
Capitol Leg Building	1	37	32%
Dept. Natural Resources	2	58	33%
Dept. of Agriculture	1	27	37%
Dept. of Commerce	1	30	27%
Dept. of Correction	2	43	23%
Dept. of Early Learning	1	30	37%
Dept. of Ecology - Lacey	1	36	33%
Dept. of Enterprise	6	201	33%
Dept. of Forest &Wildlife	2	69	33%
Dept. of Health	2	69	29%
Dept. of Licensing	4	128	35%
Dept. of Retirement Services	2	76	32%
Dept. of Transportation	4	116	33%
Dept. of Veterans Affairs	1	31	39%
Dolliver Building	1	39	31%
Department of Social & Health Services	6	209	31%
Employment Security 4450	1	37	30%
Industrial Insurance (Board of Industrial Insurance Appeals)	1	39	28%

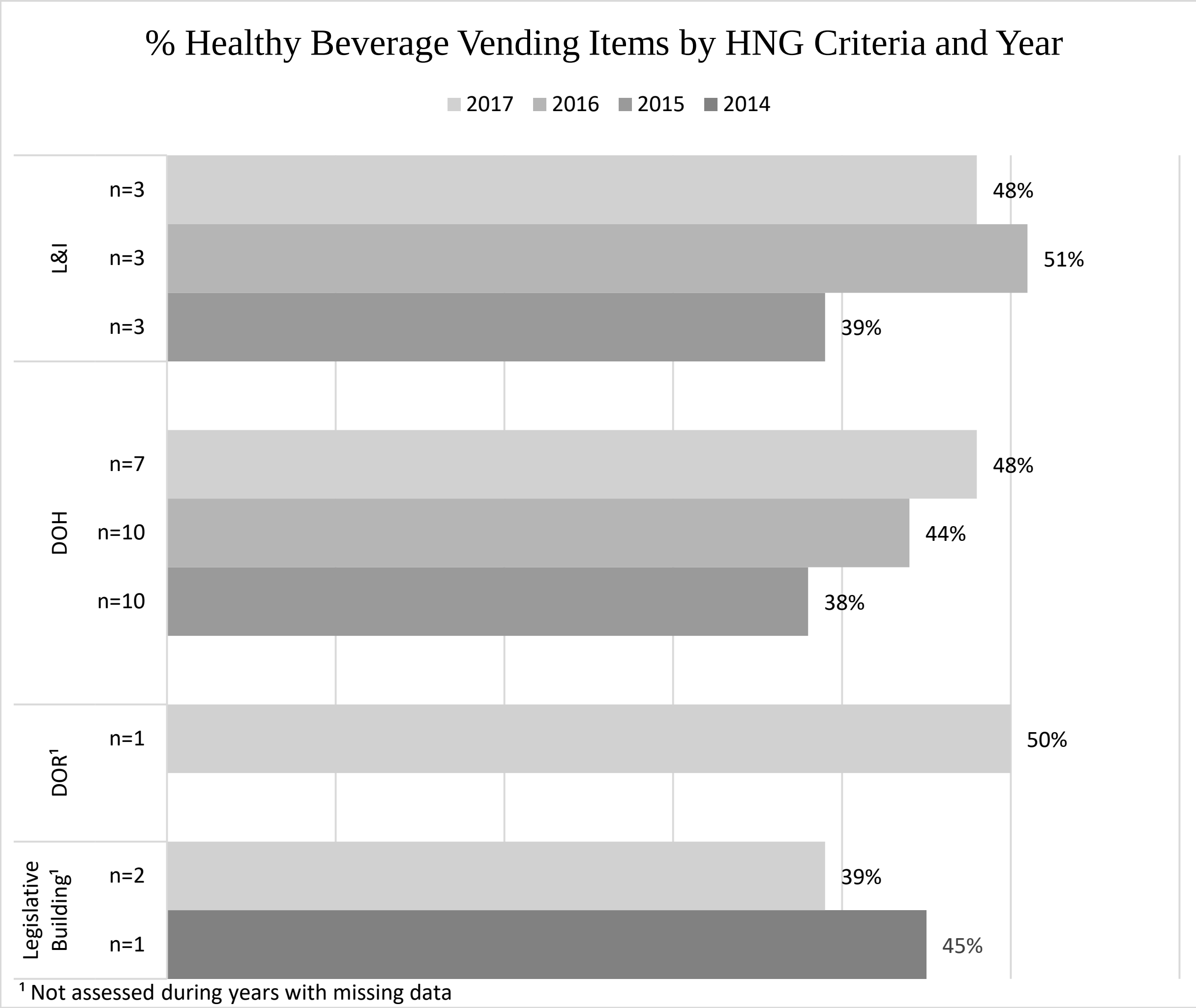
Insurance Building 302 (Office of Financial Mgmt.)	1	31	39%
Insurance Commission 5000 (Office of the Insurance Commissioner)	1	37	32%
Irv Newhouse	1	39	31%
John A Cherberg Building	1	22	41%
Legislative Services Center	1	37	32%
Legislative Support Services	1	22	36%
Office of Administration (Office of Admin. Hearings)	1	28	29%
Office of Financial Recovery(Traffic Safety Commission)	1	30	33%
Pritchard Building	1	39	31%
Services for the Blind	1	38	26%
State Library	1	39	31%
State Office Building #2	1	37	32%
Utilities/Transportation	1	31	35%
WA State Investment Board	1	29	41%
WA State Parks	1	31	35%
WA State Patrol	1	27	30%
WA Student Achievement Council	1	31	39%
WATECH	1	32	31%
Total Snacks	**59**		**32%**
Beverages			
Department of Health	7	99	48%
Department of Resources	1	6	50%
Labor & Industries	3	58	48%
Legislative Building	2	67	39%
Total Beverages	**13**		**45%**

Figure 5. Percent of **healthy snacks** in vending machines, by agency and year.



[1]Not assessed in 2017

Figure 6. Percent of **healthy beverages** in vending machines, by agency and year.



Micro-Markets

Researchers assessed nine micro-markets for HNG compliance. The HNG require that 50% of all grab-n-go entrées, snacks, and beverages must meet healthy HNG criteria to be compliant. This is more stringent than 2016 HNG guidelines, which required only 25% of grab-n-go entrée items to be healthy products in order to be compliant. The micro-market nutrition criteria for snacks and beverages are the same criteria used for vending machine compliance. Items were categorized as healthy or limited based on calorie, sugar, fat, whole grain, and sodium criteria. Grab-n-go entrées were also categorized as healthy or limited based on nutrient content.

Micro-Market Store Audits

Nine micro-markets were assessed in 2017 compared to five in 2016. No micro-markets were compliant with the updated 2017 HNG, Table 15 and Figure 7 show the proportion of healthy items in each micro-market – all were below 50%. The overall proportion of healthy items for snacks, beverages and entrées was 27%, 39% and 17%, respectively. Beverages guidelines are complied with more often than snacks or entrées, while grab-n-go entrée items are frequently the least compliant foods. Two micro-markets were ≤5% away from meeting beverage compliance criteria and all nine micro-markets were ≤20% away from meeting beverage compliance criteria. Two micro-markets were ≤20% away from snack section compliance. Seven micro-market snack sections and all micro-market entrée sections were ≥20% away from meeting HNG compliance criteria.

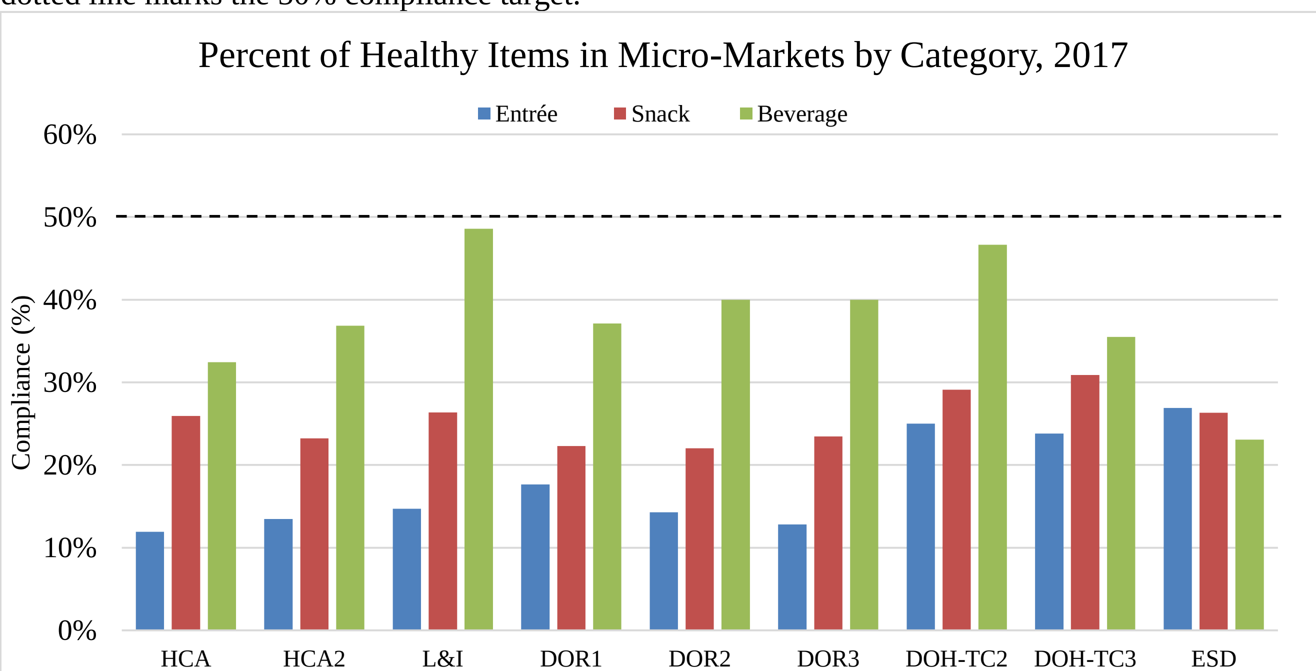
Table 15. Percent of healthy food items available for sale at agency micro-markets, by year. (At least 50% of items in each category must be healthy to be compliant.)

Agency Buildings	% Items Healthy (2016)	Compliant in 2016 Y/N	% Items Healthy (2017)	Compliant in 2017 Y/N	Change from 2016 to 2017
Entrées					
Employment Security Authority (ESA)	10%	N	26%	N	↑
Dept. of Labor & Industry (L&I)	13%	N	15%	N	↑
Dept. of Health - Town Center 2 (DOH-TC2)	3%	N	24%	N	↑
Dept. of Health – Town Center 3 (DOH-TC3)	23%	N	23%	N	
Health Care Authority – 626 Building (HCA)	8%	N	12%	N	↑
Health Care Authority – 621 Building[1] (HCA2)	*n/a*	*n/a*	13%	N	*n/a*
Dept. of Revenue – 6300 Building[1] (DOR1)	*n/a*	*n/a*	17%	N	*n/a*
Dept. of Revenue – 6400 Building[1] (DOR2)	*n/a*	*n/a*	14%	N	*n/a*
Dept. of Revenue – 6500 Building[1] (DOR3)	*n/a*	*n/a*	13%	N	*n/a*
Overall Percent Healthy Entrees	***11%***		***17%***		
Snacks					
ESA	29%	N	28%	N	↓
L&I	34%	N	28%	N	↓
DOH-TC2	49%	N	31%	N	↓
DOH-TC3	31%	N	33%	N	↑
HCA	33%	N	27%	N	↓

HCA2[1]	*n/a*	*n/a*	25%	N	*n/a*
DOR1[1]	*n/a*	*n/a*	24%	N	*n/a*
DOR2[1]	*n/a*	*n/a*	24%	N	*n/a*
DOR3[1]	*n/a*	*n/a*	24%	N	*n/a*
Overall Percent Healthy Snacks	***35%***		***27%***		
Beverages					
ESA	58%	Y	24%	N	↓
L&I	61%	Y	49%	N	↓
DOH-TC2	50%	Y	48%	N	↓
DOH-TC3	30%	N	37%	N	↑
HCA	30%	N	33%	N	↑
HCA2[1]	*n/a*	*n/a*	38%	N	*n/a*
DOR1[1]	*n/a*	*n/a*	38%	N	*n/a*
DOR2[1]	*n/a*	*n/a*	40%	N	*n/a*
DOR3[1]	*n/a*	*n/a*	41%	N	*n/a*
Overall Percent Healthy Beverages	***46%***		***39%***		

[1] Micro-markets were not assessed in 2016

Figure 7. Percent of healthy food and beverage items available in micro-markets in 2017. The dotted line marks the 50% compliance target.



Micro-Market Healthy Items Present vs. Sold

Figures 8-10 show the presence of healthy items at each micro-market versus the percent of healthy items sold during the assessment month. Sales of snack and beverage items appear to somewhat track the proportion of these items present in micro-markets. Table 16 shows the top 10 items sold in each micro-market during the 2017 assessment month.

Figure 8. Comparison of percent healthy beverage items present vs sold.

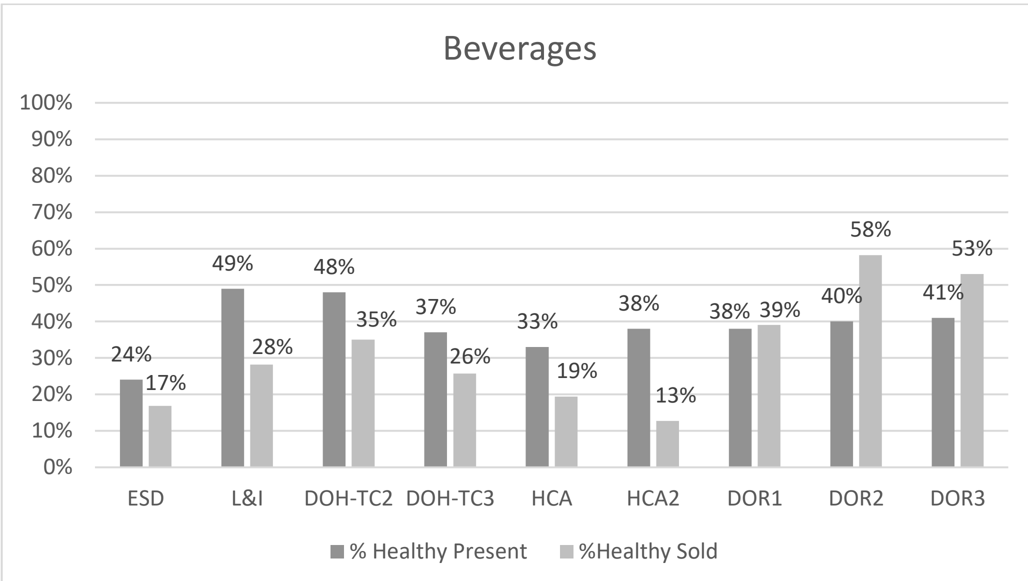


Figure 9. Comparison of percent healthy snack items present vs sold.

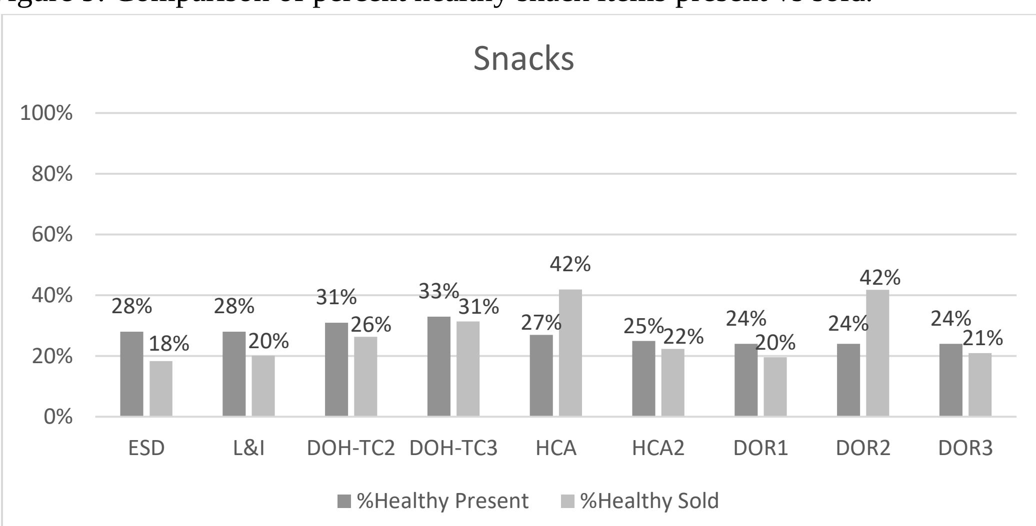


Figure 10. Comparison of percent healthy snack items present vs sold.

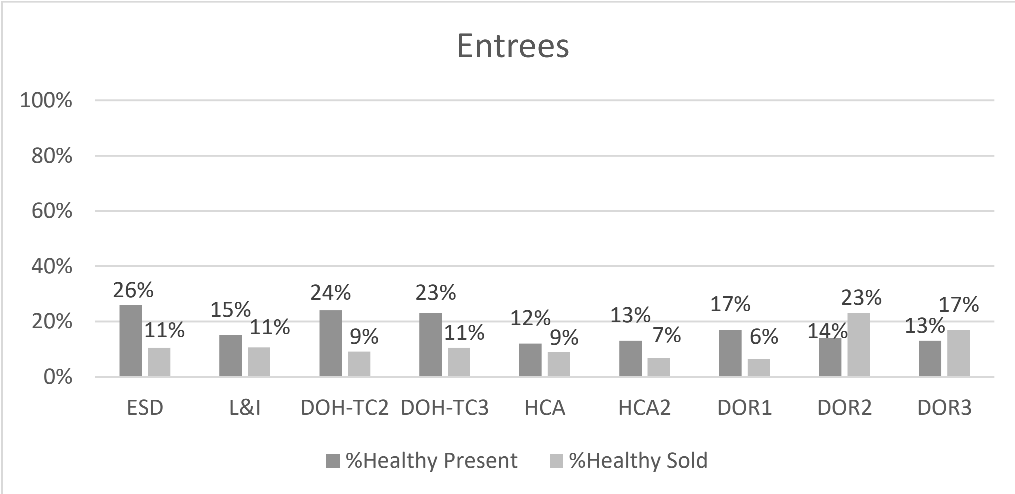


Table 16. Top 10 items sold in each micro-market during the 2017 assessment month. (Healthy items are bolded)

Product	**# Sold**
DOH TC2	
Cheddar Cheese Squares	163
Peanut Chocolate Candies 1.74 oz	82
String Cheese Mozzarella	77
20 oz Diet Soda	68
Chips Cheddar & Sour Cream 1.5oz	61
20 oz **Soda**	58
16.9 oz Sugar-free Flavored Sparkling Water	53
20 oz Diet Soda	52
Cookies	46
Cheese Puffs 2oz	43
DOR 1	
20 oz Soda	48
String Cheese Mozzarella	37
20 oz Soda	28
20 oz Diet Soda	28
16.9 oz Sugar-free Flavored Sparkling Water	23
Granola Bar 1.5oz	23
16 oz Diet Energy Drink	22
Hard Boiled Eggs	21
13.7 oz Flavored Coffee Drink	19
15.2 oz Juice	18
DOR 2	

20 oz Sugar-free Flavored Sparkling Water	61
20 oz **Sugar-free Flavored Sparkling Water**	21
Candy Bar King Size	21
Snacks Turkey & Cheddar	18
Peanut Chocolate Candies King Size	17
Chocolate Candies King Size	17
Hard Boiled Eggs	16
20 oz Flavored Water	15
Cheddar Cheese Squares	14
20 oz Soda	13
DOR 3	
12 oz Sugar-free Sparkling Flavored Water	64
Cheddar Cheese Squares	52
Hard Boiled Eggs	37
String Cheese Mozzarella	35
20 oz Soda	31
20 oz Diet Soda	30
Snacks Ham & Swiss	29
1 ltr Water	25
Snacks Turkey & Cheddar	24
20 oz Diet Soda	23
HCA 2	
20 oz Diet Soda	81
Cheddar Cheese Squares	51
20 oz Diet Soda	44
Pretzels 2oz	32
20 oz Diet Soda	30
Chips Baked .80 oz	29
Snacks Ham & Swiss	28
Yogurt Apple Nut Mix 1.5 oz	27
String Cheese Mozzarella	26
Chips Chili Cheese 2 oz	25
HCA	
Cheddar Cheese Squares	161
20 oz Diet Soda	138
String Cheese Mozzarella	91
Peanut Chocolate Candies 1.74 oz	78
12 oz Sugar-free Sparkling Flavored Water	68
Cheese Puffs 2oz	59
Chocolate Candies 1.69oz	55
Chips Cheddar & Sour Cream 1.5oz	54
20 oz Diet Soda	50
2% Half Pint White Milk	50
L&I	
String Cheese Mozzarella	141

Cheddar Cheese Squares	119
Hard Boiled Eggs	63
12 oz Strawberry Lemonade	60
Organic Hard Boiled Eggs 3 oz	57
12 oz Soda	56
2% Half Pint White Milk	53
18.5 oz Unsweetened Black Tea	48
8.4 oz Sugar-free Energy Drink	48
16 oz Sugar-free Energy Drink	43
ESD	
20 oz Soda	60
20 oz Diet Soda	52
String Cheese Mozzarella	41
Cheddar Cheese Squares	40
Cheddar Crackers 1.5oz	32
Chips Original 1.5 oz	32
20 oz Soda	27
Cheese Puffs 2oz	26
20 oz Soda	25
20 oz Water	25
DOH TC3	
20 oz Water	33
Cheddar Cheese Squares	32
20 oz Diet Soda	30
Peanut Chocolate Candies 1.74 oz	30
20 oz Diet Soda	22
Cheese Puffs 2oz	22
Hard Boiled Eggs	21
Cottage Cheese	20
Chips	20
12 oz Soda	19

Micro-Market 2016 Sales Data

Researchers analyzed the 2016 annual sales data from 20 micro-markets. Only partial-year data were provided in previous years.

Table 17 shows the top 10 food and beverage items sold by quarter across all micro-markets during the full year of 2016. The highest selling item each quarter, Cheddar Cheese Squares, sold over 2500 packages, nearly 1000 more packages per quarter than the second most sold item, String Cheese Mozzarella. Eggs and cheese are consistently among the top 10 snacks sold with nearly 50% of total sales volume coming from these products. Diet Soda and 2% Half Pint White Milk were the most commonly sold beverages. No grab-n-go entrées were among the most sold products.

Table 17. Top 10 food and beverage items sold each quarter in 2016. (HNG Healthy Category Items in **bold**).

Quarter	Product	# Sold
Q1 **(January – March)**	Cheddar Cheese Squares	2,580
	String Cheese Mozzarella	1,622
	20 oz Diet Soda	1,164
	2% Half Pint White Milk	1,056
	Hard Boiled Eggs	1,006
	Cheese Puffs 2oz	880
	Chips Cheddar & Sour Cream 1.5oz	803
	Organic Hard Boiled Eggs 3 oz	791
	12 oz Soda	780
	Potato Chips Regular 1.5oz	744
Q1 Total		***71,423***
Q2 **(April – June)**	Cheddar Cheese Squares	2,387
	String Cheese Mozzarella	1,246
	Hard Boiled Eggs	902
	Smith Brothers 2% Half Pint White Milk	782
	Cheese Puffs 2oz	731
	Organic Hard Boiled Eggs 3 oz	659
	Chips Cheddar & Sour Cream 1.5oz	646
	Cottage Cheese	628
	Chips Chili Cheese 2 oz	625
	Potato Chips Regular 1.5oz	552
Q2 Total		***60,372***
Q3 **(July – September)**	Cheddar Cheese Squares	2,667
	String Cheese Mozzarella	1,609
	Hard Boiled Eggs	906
	2% Half Pint White Milk	885
	Cheese Puffs 2oz	789
	Organic Hard Boiled Eggs 3 oz	738
	20 oz Diet Soda	726
	Chips Cheddar & Sour Cream 1.5oz	691
	Chips Regular 2 oz	626
	Cottage Cheese	581
Q3 Total		***63,261***
Q4	Cheddar Cheese Squares	2,608
	String Cheese Mozzarella	1,854
	20 oz Diet Soda	1,643
	20 oz Soda	1,079
	Chips Cheddar & Sour Cream 1.5oz	946
	Cheese Puffs 2oz	903

(October-December)	**Hard Boiled Eggs**	882
	2% Half Pint White Milk	866
	Chips Regular 2 oz	838
	20 oz Water	754
Q4 Total		***69,671***
Grand Total		**264,727**

Healthy vs. Limited Micro-Market Sales

Tables 18 and 19 compare the total product sales and number of items sold, categorized by 2016 versus 2017 HNG criteria. The updated 2017 HNG were more stringent than the 2016 HNG. Total healthy product sales and the total number of healthy items were lower when applying the updated 2017 HNG.

Table 18. Total 2016 micro-market sales from healthy/limited food and beverages, comparing 2016 and 2017 HNG standards

	% of Total Sales	
	2016 HNG Criteria	2017 HNG Criteria
Healthy	25%	21%
Limited	60%	79%
Status not calculated[1]	*15%*	-
Missing Nutrition Data[2]	-	*0%*

[1]In 2017 DOH provided healthy/limited status per 2017 HNG criteria for 139 items which had not shown up in previous assessments, without the accompanying nutrition information. We were therefore unable to determine 2016 criteria, given no nutrition information.

[2]After multiple attempts to locate nutrition information, there were a small number (n=16) of remaining products that could not be located. We included these items in the sales data analysis categorized as "missing nutrition information"

Table 19. Total 2016 number of items sold in micro-markets from healthy/limited food and beverages, comparing 2016 and 2017 HNG standards

2016 HNG Status	**# Sold**	**% of Items Sold**
Healthy	75,361	28%
Limited	164,068	62%
Status not calculated[1]	*25,298*	*10%*
Grand Total	**#264,727**	
2017 HNG Status	# Sold	% of Items Sold
Healthy	69,053	26%
Limited	195,548	74%
Missing Nutrition Data[2]	*126*	*0%*
Grand Total	**# 264,727**	

[1]In 2017 DOH provided healthy/limited status per 2017 HNG criteria for 139 items which had not shown up in previous assessments, without the accompanying nutrition information. We were therefore unable to determine 2016 criteria, given no nutrition information.

[2]After multiple attempts to locate nutrition information, there were a small number (n=16) of remaining products that could not be located. We included these items in the sales data analysis categorized as "missing nutrition information"

Beverages Sold in Micro-Markets

Table 20 and Figure 8 show micro-market beverage sales data. Over 65,000 beverage products were sold in micro-markets in 2016. Sugar-sweetened beverages were the most sold products, accounting for over 40% of items sold and 50% of sales. Diet, zero, and no calorie-sodas were the second most sold beverage accounting for 22% of items sold. Water accounted for 20% of items sold, and limited milk (e.g., high fat, flavored milk) accounted for 11% of items sold. Healthy juice and milk were the least sold beverage items, accounting for 5% of sales. Together, healthy beverages accounted for 48% of items sold and 42% of sales.

Table 20. Total 2016 micro-market beverage sales.

Beverage Category	# Sold	*% of Items Sold*	*% of Total Sales*
Healthy Juice and Milk	4,128	*6%*	*5%*
Diet/Zero/No calorie	14,580	*22%*	*23%*
Limited Category Milk	6,903	*11%*	*7%*
SSB	26,521	*41%*	*50%*
Water	13,133	*20%*	*14%*
Grand Total	**65,265**		

Discussion

As mentioned previously, it is important to note that the 2017 HNG were more stringent than the 2016 HNG, which affects the interpretation of the 2017 vending and micro-market findings. Guidelines that are more stringent means that fewer food items were classified as healthy under the 2017 HNG as compared to prior years. The most notable changes were reductions in calories and sodium allowed per item package. Guidelines that are more stringent may partially explain the decreased compliance observed in 2017. As a result, it is difficult to compare the proportion of healthy items in 2017 to healthy items in 2016, or draw conclusions about yearly compliance trends.

Cafés

While cafés are not yet in compliance in with the HNG, they have made progress for each year of evaluation. There were several basic criteria in the HNG that proved particularly difficult for cafés to meet. However, it is important to note two things: first, two of the nine cafés we assessed underwent manager and operator changes shortly before our assessments and they were unfamiliar with the HNG. Second, most assessments were done on either a Tuesday or a Friday, which in many cafés were Taco Tuesday and Fried Fish Friday. Several café managers mentioned during the assessments that these days generally contain less healthful meal items than on Mondays, Wednesdays, or Thursdays.

Roughly half of the cafés assessed increased in compliance, while roughly half decreased in compliance. Often this was based on just one basic criteria measure. While no cafés were fully compliant with the HNG basic criteria, two cafés only missed one basic criteria item. All cafés met some HNG criteria for *additional* criteria compliance but no café met the majority of these criteria. This challenge for cafés to meet the HNG's basic and additional criteria may be due to either a lack of knowledge or understanding of the criteria, or insufficient support in implementation (from both clients and/or management). For example, several café operators mentioned that they no longer offered whole milk, but 2% fluid milk products were still available in all cafés, and half–and-half cream was available in almost all cafés with coffee service. Many operators considered this a "healthful" change, even though the HNG criteria classify only 1% or non-fat milk as healthful. In addition, no operators applied these fat-content criteria to cheese products. Furthermore, some operators discussed removing large soda cups, such as 32 ounces cups, from their cafés, but no café met criteria for providing cups no larger than 16 ounces. Café operators reported receiving complaints from customers after removing the 32 ounce cups, which may partially explain their hesitation to make changes in order to comply with the HNG. Finally, HNG criteria specify that cafés "serve one meal per day that provides one serving of at least three of the following: fruit, vegetables, beans or whole grains." In past evaluations, all cafés received points for this criterion, despite no cafés offering an entire meal that met these criteria by default; past evaluators considered sandwiches that offered whole grain bread with lettuce and tomatoes or salad bars with fruit and beans as compliant. This year, these options were not considered to provide one serving of each food group. This change in point assignment was a result of consultation between the evaluation team and WA DOH and more closely reflects the intent of this criterion. Therefore, only one café received points for these criteria. Differences in interpretation between evaluators likely mean that cafés also struggle with interpreting the criteria.

Despite these challenges in implementing the HNG, all cafés successfully eliminated the use of trans-fats or partially hydrogenated oils in preparation of their meal items. We found additional successes in the reduction of sodium in foods, and the equitable pricing of healthy vs. unhealthy items. Most café operators prepared food from scratch, when possible, to reduce the sodium content of their products. Most cafés used homemade soup bases and emphasized fresh or frozen produce over canned and fresh produce over frozen. One café made their own bread products specifically to reduce sodium. Four cafés, three more than observed in 2016, purchased low sodium deli meats for their sandwiches. Although fewer cafés purchased low sodium canned tomatoes, four cafés no longer purchased canned tomatoes, because they preferred to use fresh or frozen tomatoes in their recipes.

Signage and the availability of fresh fruit and vegetables are two other area where cafés consistently struggled to meet HNG criteria. Since 2016, the amount of signage promoting healthy food choices has decreased. Signage promoting free water, low-sodium options, and whole grains are simple ways to increase café compliance and encourage selection of healthful food options. The availability of fruit and vegetable options has similarly decreased. However, this may be attributed to our visiting many of cafés on a Friday, when operators said that they do not restock produce so that it does not spoil over the weekend. Of the three cafés that were non-compliant for vegetables, all three were large cafés that lacked a cooked vegetable option.

Another positive finding was that cafés comparably priced their healthy and unhealthy items. Almost all healthy products were sold at an equal price compared to equivalent unhealthy products. This has remained consistent over all evaluation years and products. This can help incentivize customers to choose healthy products over unhealthy products, because the price is the same. Over half of cafés offered healthy options for chips, soda, juice, and milk. This is higher than past years; the proportion of healthy snacks in cafés is increasing. In addition, the number of cafés offering a higher proportion of healthy snacks has increased. Eight of the nine cafés offered at least 50% of milk options as 1% or fat-free milk. Only one café did not offer a healthy milk option. Similarly, eight of the nine cafés assessed offered a healthy chip option, and three of the four cafés selling cereal offered a healthy cereal option. These are both increases over the 2016 findings, and may be a result of implementation of the HNG or in response to increased customer demand for healthy options.

While increased compliance of behavioral economics criteria was observed, there is room for further improvement. Over half of cafés offer healthier options of chips, cereal, yogurt, milk, soda, **and** juice at equal or lower price than equivalent regular items. This is an increase from previous years, reflecting an increase in access to healthy foods. While no café was observed marketing deep-fried food options, overall fewer cafés displayed signs to promote healthier items or specials. Fewer cafés managers are training staff to prompt customers to choose non-fried vegetables or low-calorie beverages. All café beverages (except coffee drinks) were self-serve or grab-n-go items; therefore, employees do not have an opportunity to affect customer beverage choices. Placement and promotion of food items can enhance customers' ability to make healthy choices. One café displays nutrition information on site, but no cafés offer nutrition information online or indicate on menus. Some cafés have websites advertising weekly specials and menu items. Expansion of these website and increased use of signage to provide nutrition information may enhance the ability of customers to make healthy food choices.

Importantly, the two cafés with the largest reduction in compliance had both undergone management changes shortly before the 2017 evaluation visits. While this change in management makes it difficult to assess change over time, these data provide both baseline data for these new managers, as well as illuminate the importance of working with new café managers throughout the transition process. Several café operators expressed an interest in receiving recommendations or tips on how to improve their café to meet the healthy nutrition guidelines. Operators also were interested in both reading the report and knowing how their café scored in the assessment. They also wanted to know how the report was going to be used and who had access to it. Café operators seemed genuinely concerned with improving their cafés and providing healthy options for customers.

Vending

The 2017 evaluation suggests that the proportion of EO compliant snack and beverage vending machines is increasing in Washington State agencies, even with more stringent guidelines to follow. A higher proportion of compliant beverage machines are available compared to snack machines. It is important to note that 59 snack machines were examined and only 13 beverage machines, so comparability between snack and beverage vending machines is limited. Although two snack machines were compliant in 2016 and zero snack vending machines (out of 59 snack machines) were compliant in 2017, the proportion of compliant *items* increased in snack vending machines. We also observed an increase in compliant beverage items in vending machines. This suggests that vending companies are paying greater attention to stocking compliant items, and that the availability of healthy products may be increasing. In addition, the increase in availability of healthy products is reflected in the increase in the number of machines within 15% of compliance (40% snack machines, 100% beverage machines). More healthy snacks are being offered in vending machines, even if the machines are not yet fully compliant; there is an upward trend of healthfulness of products in vending machines. This is likely a result of both increased availability of healthful products, such as whole grain or reduced fat chips and dried fruit, as well as vendor willingness to stock them. These products were available in nearly every machine.

Micro-Markets

The Department of Health reports that micro-markets are popular among customers, vendors, and the DSB, who holds contracts for most of the vending in Washington State buildings covered under the EO. As a result, we expect to see the number of micro-markets in Washington increase. Since the 2016 evaluation, four more micro-markets have been placed in state agencies – three in the Department of Revenue and one in Health Care Authority. If demand in high volume state agencies continues, more markets will likely be added.

Of the nine micro-markets assessed in 2017, five were also assessed in 2016 and three in 2015. Of the five micro-markets assessed in both 2016 and 2017, four increased the proportion of healthy entrée items available for purchase, and one neither increased nor decreased their proportion of healthy entrée items. While the availability of healthy entrées increased from 2016 to 2017, the sales data show that limited status items are still top-sellers in the micro-markets, and no entrées were among the top ten purchased items during 2016. Availability of healthy snack items decreased in four micro-markets and increased in one micro-market, while healthy beverage items decreased in three micro-markets and increased in two micro-markets. Compared to snack and beverage vending machines, the proportion of healthy items were similar to micro-markets. While no snack machines or micro-market snack sections were compliant, 32% of vending machines snack items were healthy, compared to 27% of micro-market snacks items. Similarly, one beverage vending machine was compliant and 45% of beverages items were healthy, while 39% of micro-market beverages were healthy and no section was complaint. This suggests that healthy beverages that comply with the HNG are either easier to stock or customer demand for healthy beverages is higher than the demand for healthy snacks and entrées. Diet soda and water were the most frequently sold healthy beverage items.

Healthy entrées were the least compliant micro-market food category, but the number of healthy items for sale is increasing. The proportion of healthy items available in both snack and beverage sections decreased in 2017 as compared to 2016. This is likely in some part attributable to the more stringent 2017 HNG criteria. For example, based on HNG criteria prior to 2017, 25% of entrée items needed to be healthy to be considered compliant. In 2017 two micro-markets met this old criteria; based on 2016 HNG, these micro-markets would have been compliant in the entrée section, but in 2017 they are not considered compliant because at least 50% of items needed to be healthy during the 2017 evaluation. Similarly, reduced sodium and calorie criteria mean that fewer snack options are healthy.

Four of the top ten most sold items were healthy. This provides evidence that customers are purchasing healthy options. Snacks and beverages are the most frequently sold items. Therefore, it is important that healthy snack and beverage options are readily available for purchase in micro-markets. However, snack and beverage micro-market compliance decreased from 2016 to 2017. In addition, no entrées were frequently purchased, and the only healthy entrées were frozen, microwaveable options. None of the fresh sandwiches or salads that were offered are healthy options. This can be misleading for customers or make it difficult to choose healthy alternatives. It is unclear whether increased availability of healthy entrées will increase sales, or if more healthy entrées will not be stocked until they are more frequently purchased.

Our evaluation of micro-markets suggests that there is potential for customers to access healthy beverage and snack options that are not available in vending machines. While compliance is low, data suggest that there is potential to increase healthy options available in micro-markets, especially for beverages and snacks, which are the most frequently sold items.

Limitations

The vending machine, micro-market and café assessments sample included here may or may not be representative of other vending machine, micro-market and café compliance with the HNG. Vending machines assessed in 2017 are only representative of one vending machine operator and within a given geographic region (greater Olympia-area). Moreover, the vending machine operator took photos for assessment in 2017 after stocking the machines. It is possible the vending machine operator could intentionally fill the machine with healthier foods prior to taking photos used for assessment. Micro-markets sampled for assessment in 2017 were based on those most easily accessible to researchers within a given geographic region (greater Olympia-area) and operated by one company, and may not be representative of micro-markets operated by other companies in different regions. Finally, WA DOH and CPHN researchers do not have a comprehensive list of cafes located in state agencies, therefore we are unable to determine if this sample size is representative of state agency cafés more broadly. Additionally, cafés were contacted by WA DOH and UW prior to assessment, and cafés may have altered their daily offerings knowing that UW researchers would be assessing for the HNG.

Additionally, all data for each location (cafés, vending machines, and micro-markets) were collected at one time point. Therefore, this is a snapshot in time and may not be representative of each environment. It is possible that on that day items were not fully stocked, or that healthier items could have sold out. In addition, data were collected by different researchers in the baseline (2014), 2015, 2016, and 2017 evaluations. While standardization and well-defined criteria for assessing food environments were emphasized, need for additional clarification emerged between evaluation periods. This resulted in slight variation in data collection and interpretation of the HNG between years. This is especially true for café assessments. For example, in 2017, researchers visited all cafés on either Tuesday or Friday when daily specials were potentially less healthy, and produce was allowed to sell out prior to the weekend. Additionally, some HNG criteria have been re-defined and clarified with each evaluation year. Researchers interpreted criteria differently each year regarding the criteria if cafés "serve one meal per day that provides one serving of at least three of the following: fruit, vegetables, beans or whole grains." Some years tomatoes and lettuce were counted as a fruit and vegetable serving and other years they were not. Finally, assessment of some criteria depended on self-reporting from café operators, without the opportunity for verification.

Finally, changes in the HNG between evaluation years makes it difficult to compare compliance results between years when the metrics for compliance vary. For example, the number of calories and sodium allowed in food items in vending machines and micro-markets was reduced for the 2017 evaluation causing fewer products to be classified as healthy. These changes may cause it to look like fewer food environments are compliant and sell fewer healthy food items when instead, it is the criteria that have changed. Furthermore, in 2017 we collected data for more snack vending machines and fewer beverage vending machines than in previous years, making it difficult to draw definitive conclusions between years.

Recommendations

Cafés

1. Determine what support or assistance cafés need to comply with basic criteria.
2. Better define requirement for complete meals (bean/vegetables/fruit/grain) with café managers, or eliminate it if too difficult to communicate.
3. Set up protocol for communicating with cafés during ownership/management transition to ensure information is getting to the right people and new café operators have what they need to meet guidelines.
4. Continue to provide information and resources about beverages so that the number of healthy options in cafés continues to improve.
5. Emphasize the importance of healthy eating promotion/signage to improve customer knowledge and help cafés improve HNG compliance.
6. Encourage vendors to use signage to promote healthy options. Examples include low-sodium stickers, mark healthy items on menu, mark free water. These are small, cheap, easy changes that would result in higher compliance.

Vending Machines and Micro-Markets

7. Continue working with food suppliers to communicate demand for healthier products.
8. Share information about top ten most-sold items that are healthy to encourage inclusion and prominent display in micro-markets and vending.
9. Share data comparing the presence of healthy snack items present vs sold, and encourage regular stocking of greater proportion of healthy items to meet guidelines and promote sales of those items.
10. Continue working with suppliers to acquire sales data so that ongoing analyses can be conducted.

Collaboration/Communication

11. Previous evaluations recommended the provision of technical assistance and resources to café operators, including lists of items that meet the nutrition guidelines and sources for purchase, and guidance around promotion of “healthy” foods. We recommend follow up interviews to determine the extent these have been carried out and what worked well.
12. Increase efforts to share best practices and success stories between agencies, and recognize cafés successes.
13. Continue to identify opportunities to widely celebrate and communicate successes of implementation of healthy nutrition guidelines across agencies.

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Appendices

Please contact UW Center for Public Health Nutrition for appendices.