

# Evaluating Washington State's Healthy Nutrition Guidelines

## *Report from a Baseline Evaluation of Executive Order 13-06*

September 30, 2014

Prepared for:  
Washington State Department of Health

Prepared by:

Jennifer Otten, PhD, RD, Jamie Bachaus and Elizabeth Hulbrock  
Center for Public Health Nutrition, University of Washington School of Public Health

### **Acknowledgements**

The authors thank the Department of Health staff, cafeteria operators, vendors, worksite wellness coordinators, agency leadership, public health practitioners and research assistants Kidan Araya, Jessica Johnston, Nicole Peltzer, and Sophia Trinh who gave their time and thoughtful input for this evaluation. We also thank Emilee Quinn, MPH and Donna Johnson, PhD, RD for their contributions and direction.

*This publication was supported by the Washington State Department of Health through a Cooperative Agreement (CDC Community Transformation Grant DP11-1103PPHF11) with the Centers for Disease Control and Prevention (CDC).*

UNIVERSITY OF  
WASHINGTON

UWcphn



CENTER FOR PUBLIC  
HEALTH NUTRITION

## Table of Contents

Executive Summary.....	2
Introduction.....	4
Methods.....	7
Cafeteria Assessments.....	7
Vending.....	9
Interviews.....	10
Production Records.....	12
Results.....	12
Cafeteria Assessments.....	12
Vending.....	16
Interviews.....	18
Production Records.....	26
Limitations and Strengths.....	27
Discussion.....	27
References.....	29

### Appendices

Appendix 1: Literature Review.....	30
Appendix 2: Modified NEMS.....	37
Appendix 3: Interview Questions.....	51
Appendix 4: Example Cafeteria Nutrition Guidelines.....	60
Appendix 5: Organizational Policies.....	70
Appendix 6: Evaluation Plan.....	74

### Figures

1. Logic model.....	6
---------------------	---

### Tables

1. Evaluation Data Sources.....	7
2. Food Service Venue Inclusion.....	8
3. Interviewees.....	10
4. Basic Criteria Compliance.....	13
5. Pricing, Promotion, and Behavioral Economics.....	15
6. Vending Compliance.....	17

## Executive Summary

In September 2013, Governor Jay Inslee issued a statewide Executive Order (EO 13-06), *Improving the Health and Productivity of State Employees and Access to Healthy Foods in State Facilities*. EO 13-06 mandated all state agencies in the executive branch to implement food and beverage policies consistent with the Washington State Healthy Nutrition Guidelines, based on the *2010 Dietary Guidelines for Americans*. EO 13-06 affects 39 executive branch state agencies and an estimated 67,000 individuals. These guidelines impact food served or sold in cafeterias, vending machines, on-site retail establishments, at meetings or events, and institutional food service.

Implementation of the guidelines began on July 1, 2014 with full implementation to be achieved by December 31, 2016. Compliance with EO 13-06 is the responsibility of a State Employee Health and Wellness Steering Committee, staffed in part by the Washington State Department of Health (WA DOH). In June 2014, WA DOH contracted with the University of Washington Center for Public Health Nutrition (UW CPHN) to assist in developing and implementing an evaluation of EO 13-06. The following evaluation documents the initial implementation phase of EO 13-06.

The purpose of this evaluation, conducted from July through September 2014, is to document the experiences of agencies, stakeholders, and venues affected (and, when possible, unaffected) by EO 13-06 in order to inform future implementation and evaluation efforts. To achieve this, we assessed (1) current compliance rates in cafeteria and vending requirements, and (2) facilitators and barriers to compliance reported by key stakeholders, including agency leaders, worksite wellness coordinators, and cafeteria operators.

Based on preliminary data, we found that current compliance rates in both cafeteria and vending environments were low. However there was some progress towards meeting guidelines and acknowledgement of opportunities for improvement. Interviews with key stakeholders found the top reported barriers to implementation among cafeteria operators were cost concerns and among agency leaders and worksite wellness coordinators was perceived lack of support and communication and lack of resources (e.g. staff time and marketing materials). However, interviews also revealed widespread support among all stakeholders for providing employees/customers with more healthy food options. Interviews with cafeteria operators showed that many believed themselves to be in compliance with or exceeding guidelines, whereas data collected with the modified NEMS indicates only partial movement towards compliance. One food venue site in particular has taken notable steps in improving the food environment.

The implementation of EO 13-06 is in its early phase and this evaluation can inform future activities. Specifically, WA DOH staff can consider strategies that promote the Healthy Nutrition Guidelines by capitalizing on facilitators, addressing barriers, and tailoring support in response to identified needs noted by stakeholders. Cafeterias making greater progress in adaptation of guidelines, such as the large

food service venue discussed in this evaluation, can serve as a positive example for others. Finally, more rigorous and ongoing evaluations are needed, particularly related to financial impacts.

# Healthy Nutrition Guidelines: Report from a Baseline Evaluation of Executive Order 13-06

## ► Introduction

Over 60% of adults are considered overweight or obese in Washington State.<sup>1</sup> Obesity and overweight are associated with a number of chronic diseases including coronary heart disease, diabetes, stroke, and some cancers.<sup>2</sup> The medical costs associated with obesity are estimated at 147 billion dollars among adults.<sup>3</sup> Diet-related approaches that target the individual have proven unsuccessful in curbing the obesity epidemic and the need for large-scale environmental and policy strategies that make healthy options available, accessible, and affordable has been widely reported.<sup>4,5</sup> Specifically, policies that target the food environment and food supply, such as healthy food procurement and healthy food and beverage service guidelines, have been deemed one potential and effective solution to improve healthy eating habits. The Centers for Disease Control and Prevention (CDC) has recommended state and local government agencies adopt food procurement policies and food and beverage service guidelines that align with the Dietary Guidelines for Americans in an effort to improve the food supply.<sup>6,7</sup>

In Washington State, Governor Jay Inslee issued statewide EO 13-06, *Improving the Health and Productivity of State Employees and Access to Healthy Foods in State Facilities*, requiring all state executive agencies to adopt and implement food service guidelines that meet the Washington State Department of Health's Healthy Nutrition Guidelines that follow the guidance of the 2010 Dietary Guidelines for Americans.<sup>8,9</sup> These guidelines set criteria to ensure healthy options are available in cafeterias, cafes, on-site retail venues, vending machines, meetings and events, and institutional food service. The WA DOH convened a Food Procurement workgroup to develop an implementation guide to support agencies and cafeteria operators in the implementation of the guidelines. This implementation guide serves to support the 39 executive branch state agencies and their programs that employ and serve the estimated 67,000 individuals who are affected by EO 13-06. In addition to developing the implementation guide, WA DOH's Healthy Eating and Active Living (HEAL) Unit is planning professional trainings, facilitating outreach efforts, and providing ongoing technical assistance to food service operators, agency leaders, worksite wellness coordinators, and food and beverage providers. **Figure 1** shows the early logic model for the Food and Beverage Service Guidelines project with EO 13-06, WA DOH staff, partners, venues, and evaluation as inputs. The intended outcomes are environments that support healthy choices, increased organizational capacity, better relationships among food service providers and agencies, and increased affordability and consumption of healthy foods among employees.

Implementation of the guidelines began on July 1, 2014 with full implementation to be achieved by December 31, 2016. Compliance with EO 13-06 is the responsibility of a State Employee Health and

Wellness Steering Committee, staffed in part by WA DOH. Due to the far-reaching impact and unique needs of individual agencies and venues, WA DOH has allocated a significant amount of time to support the rollout of EO 13-06. In addition to EO 13-06, WA DOH was also awarded CDC's Sodium Reduction in Communities Grant in 2013 which aims to increase access to lower sodium food options, to reduce sodium intake, and to 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 provided opportunity for collaboration in implementation and evaluation efforts. In order to capture baseline data, WA DOH contracted with the University of Washington Center for Public Health Nutrition (CPHN) to assist in developing and implementing the evaluation of EO 13-06.

### **Evaluation Purpose**

The purpose of this evaluation was to address three specific questions about the experience of agencies, stakeholders, and venues affected by EO 13-06 to inform future evaluation efforts:

- 1) How does EO 13-06 impact the food environments of affected food service venues, such as worksite cafeterias and vending machines?
- 2) What are the current and anticipated facilitators and barriers of implementing EO 13-06 ?
- 3) What impact do the changes at affected food service venues have on the impact of venue purchases and sales?

**Figure 1: Logic Model**

<b>Inputs</b> <i>(what it takes to conduct the program)</i>	<b>Activities</b> <i>(what is done – key intervention elements)</i>	<b>Outputs</b> <i>(to whom, how much, how many, at what duration, etc.)</i>	<b>Outcomes</b> <i>(specific changes in individuals, programs, or systems)</i>	<b>Intended Goals</b> <i>(broad changes to which outcomes contribute)</i>
<p>WA State EO 13-06</p> <p>WA State Department of Health (WA DOH), Healthy Eating and Active Living unit (HEAL)</p> <p>Food Procurement Workgroup</p> <p>Affected Executive Branch Agencies and State Departments (e.g., agency leaders, employees, departments responsible for current food service contracts and infrastructure)</p> <p>Executive branch cafeterias (n=12), vending machines (22 reported), on-site retail</p> <p>Food/Beverage service venues (food service venue operators, managers, and employees)</p> <p>Food/Beverage providers (vending machine distributors, food distributors, cafeterias)</p> <p>Previous related evaluations and evidence- base</p> <p>Outreach and TA partners (e.g., worksite wellness coordinators, outreach collaboration, dissemination efforts)</p> <p>Evaluation team</p>	<p><b>Technical assistance for agency leaders, worksite wellness coordinators, food service venue operators/managers:</b> including training, trouble-shooting, development/provision of an implementation guide on setting up Food and Beverage Service Guidelines (FBSGs), modifying TA to reflect lessons learned and overcome challenges</p> <p><b>Outreach (publicity/promotion, educational) efforts</b> conducted by HEAL to reach agencies, employees, food service venues</p> <p><b>Administration of FBSGs (including training, tracking, monitoring, enforcing)</b></p>	<p>Technical assistance:</p> <ul style="list-style-type: none"> <li>• Implementation guide</li> <li>• Who is trained to provide TA and to what degree</li> </ul> <p>Outreach and Educational activities:</p> <ul style="list-style-type: none"> <li>• # and type of outreach activities conducted and to whom (employees, cafeteria operators etc...)</li> </ul> <p>Adoption:</p> <ul style="list-style-type: none"> <li>• Extent to which agencies adopt and incorporate EO policies</li> </ul> <p>Implementation:</p> <ul style="list-style-type: none"> <li>• # of staff, amount of time spent administering FBSG (including training, tracking, monitoring, enforcing)</li> <li>• # HEAL presentations provided</li> <li>• # food service vendors/venues complying with agency policies</li> <li>• # of modifications to policies or implementation guide needed</li> <li>• # of interviews with stakeholders</li> </ul> <p>Production/costs:</p> <ul style="list-style-type: none"> <li>• Production and/or cost records</li> </ul> <p>Sales records</p>	<p>Environment supports healthy choices</p> <ul style="list-style-type: none"> <li>• Increased access and availability of healthy foods in executive agency venues and programs</li> <li>• Price of healthy foods/beverages equates with or is lower than less healthful options</li> <li>• Promotion and placement of healthy foods improved and emphasize healthy options</li> </ul> <p>Organizational Capacity</p> <ul style="list-style-type: none"> <li>• HEAL learns about food service contracts, procurement infrastructure and structure, and process changes at organizational level</li> </ul> <p>Food Service Providers/Venues</p> <ul style="list-style-type: none"> <li>• Consistent revenue</li> <li>• Better relationships with providers and agencies</li> </ul> <p>Employees</p> <ul style="list-style-type: none"> <li>• Increased affordability/purchases and thus consumption of healthier foods and decreased consumption of less healthful foods</li> <li>• Venues are seen as a worksite resource</li> </ul>	<p>More healthful food environments</p> <p>Improved understanding of best practices for supporting healthy food and beverage service guidelines</p> <p>Food service venues benefit and are valued by the populations they serve</p> <p>Food providers increase supply of healthy food options</p> <p>Increased demand for healthy options and decreased demand for less healthful options</p> <p>Healthy employees (eat more healthy foods, experience better health outcomes)</p> <p>Prevent unintended consequences such as negatively impacting food equity</p>
<p><b>PROCESS EVALUATION</b></p>			<p><b>OUTCOME EVALUATION</b></p>	

## ► Methods

The research team collected primary data assessing the cafeteria food environments and vending machine compliance, and interviewing key informants. The evaluation team also requested cafeteria production records from cafeteria operators, but received few. The data was collected over a three month period (July – September) in 2014. The methods of each data collection process are detailed below.

<b>Data Sources</b>	<b>Evaluation Question Addressed</b>
1) Modified-NEMS assessment of 9 cafeterias	1
2) Photographs of vending machine inventory for 22 machines	1
3) Interviews (5 cafeteria operators, 2 worksite wellness coordinators, 9 agency leaders, 1 Healthy Eating Active Living representative)	2, 3
4) Production Records (unable to obtain)	3

### **Cafeteria Assessment**

The research team first developed a Modified Nutrition Environment Measures Survey with Behavioral Economics Checklist (Modified-NEMS) to assess the food environments of cafeterias. To do this, the research team combined relevant items from the validated Nutrition Environment Measures Survey – Cafeterias (NEMS-C) with the CDC Healthy Hospital Cafeteria Food & Beverage and Physical Activity Assessment Scan. They then incorporated questions to assess whether cafeterias met the WA DOH basic compliance checklist as contained within the *WA DOH Healthy Nutrition Guidelines Implementation Guide for Cafeterias*. This checklist provides criteria required for food service venues to be considered in compliance with the Healthy Nutrition Guidelines. Compliance is based on a point system, with each criteria met earning the food service venue a defined number of points. If discrepancies were noted or basic criteria were not addressed, questions were amended or added. Behavioral economics strategies from both the *WA DOH Healthy Nutrition Guidelines Implementation Guide for Cafeterias* and a previous cafeteria environmental assessment conducted by the UW CPHN were also incorporated into the Modified-NEMS. Behavioral economic strategies are those strategies intended to “nudge” consumers into making healthier choices, such as putting healthy items by the check-out register or at eye level. Next, WA DOH staff provided feedback on the Modified-NEMS and modifications were added as requested, such as adding questions to assess cafeterias for the presence or absence WA DOH Healthy Nutrition Guidelines sodium strategies. Three researchers then pilot tested the Modified-NEMS at two state agency cafeterias in Olympia to assess for basic clarity and comprehension of questions, to evaluate tool protocol and clearness of

the tool’s accompanying instructional guide, and to determine the average duration for tool completion. Questions on the Modified-NEMS included items such as:

- Does the cafeteria have signs or other displays that encourage general healthy eating or healthy food choices? (posters on wall, signs, table tents)
- Are lower sodium options promoted? (snacks ≤360 mg, individual food item ≤480 mg, individual meal ≤900 mg)
- Fruit is well lit (Yes, No, Mixed)

See **Appendix 2** for a full set of questions.

WA DOH staff initially identified a list of 17 cafeterias to survey (see **Table 2**). Of these cafeterias, 9 were surveyed after taking into account cafeteria closures and size. Three cafeterias were excluded due to recent closure and 5 cafeterias were small food service venues for which the Modified-NEMS was not designed. Eight of the nine cafeterias assessed were affected by EO 13-06 while 1 cafeteria that was unaffected and did not serve executive agency employees served as a comparison.

<b>Table 2: Food Service Venue Inclusion</b>			
<b>Agency</b>	<b>Food Service Venue</b>	<b>Inclusion Status</b>	<b>Reason</b>
Puget Sound Partnership (PSP)	City Picnics	Surveyed	Affected
Labor and Industries (LNI)	Bienvenue Café	Surveyed	Affected
Department of Licensing (DOL)	Hot Little Bistro	Surveyed	Affected
Department of Corrections (DOC)	Courtyard Café	Surveyed	Affected
Department of Social and Health Services (DSHS)	Oasis Café	Surveyed	Affected
Department of Enterprise Services (DES)	Megabites Deli	Surveyed	Affected
Legislative building	Dome Deli	Surveyed	Comparison
Department of Ecology (ECY)	The Ecology Café!	Surveyed	Affected
Department of Social and Health Services (DSHS)	Bobby Jayz	Surveyed	Affected
Department of Enterprise Services (DES)	Barb’s BBQ and Soul Food	Not Surveyed	Closure

Department of Employment Security (ESD)	The Blue Café and Espresso	Not Surveyed	Closure
Department of Transportation (DOT)	The Blue Café and Espresso	Not Surveyed	Closure
Department of Veterans Affairs (DVA)	Snack Bar at Soldier's Home and Colony	Not Surveyed	Modified-NEMS not designed to assess food service venue size
Washington State Health Care Authority (HCA)	Cherry St. Espresso Stand	Not Surveyed	Modified-NEMS not designed to assess food service venue size
Department of Commerce (COM)	Coffee Central	Not Surveyed	Modified-NEMS not designed to assess food service venue size
Department of Health (DOH)	Coffee Central	Not Surveyed	Modified-NEMS not designed to assess food service venue size
Department of Retirement Systems (DRS)	Coffee Central	Not Surveyed	Modified-NEMS not designed to assess food service venue size

Two researchers conducted independent surveys of the first 2 cafeterias in order to assess inter-rater reliability. These initial surveys were used to determine that the Modified-NEMS would produce the same findings regardless of surveyor, thus allowing for just 1 scan of each succeeding cafeteria. All Modified-NEMS surveys were completed in the month of August during typical lunch hours to ensure consistency. A trained coder entered the data that was collected and assessed for data entry errors. This preliminary set of data was analyzed for basic trends in EO 13-06 implementation. Eleven questions on the Modified-NEMS were analyzed to determine whether or not basic compliance was met according to WA DOH Healthy Nutrition Guidelines.

## Vending

During initial interview requests, researchers asked the worksite wellness coordinator (WWC) associated with each of the 9 agencies surveyed to obtain an inventory of affected vending machines in agency buildings and to take photographs of these and submit electronically to the UW research team, per a UW CPHN protocol that was provided to them. The protocol indicated photographs of the full machine, product close ups, and marketing signage be collected and consistently labeled. Each WWC was contacted up to 3 times per protocol. In this preliminary attempt to gather data, 1 WWC

responded with vending machine information and 1 WWC declined to participate. The WWC who responded with vending information sent a list of 18 vending machines at 2 agencies. The WWC included photographs for 10 of these 18 machines. Due to delayed communication with the WWC, we were unable to photograph or obtain access to the remaining 8 machines identified.

Researchers then visited 5 agencies not included on the list described above and provided by the WWC. At these agencies, they inquired with front desk personnel and cafeteria operators regarding additional vending machine locations. Twelve additional machines were identified and photographs were collected from each.

In total, researchers compiled photographs for a total 22 out of 30 identified machines. Of the machines surveyed, 8 machines sold snack items and 14 machines sold beverages. To assess machines for compliance with the WA DOH Healthy Vending Implementation Guide, we gathered specific nutrient values for vending machine products from a reliable nutrition database and compared these values to requirements specified in the Healthy Nutrition Guidelines standards to categorize vending items as Healthiest, Healthier, or Limited.

## Interviews

WA DOH staff provided contact information to UW CPHN staff for all key stakeholders (i.e., agency leaders, cafeteria operators, and WWCs). They also sent initial invitations to these stakeholders to inform them that researchers would invite them to participate in the evaluation, noting that participation was not required. The research team followed up with invitations to these stakeholders explaining the project, providing IRB-approved human subjects information sheets, and asking them to respond if willing to be interviewed. **Table 3** provides a complete list of stakeholders contacted and interviewed by interviewee category. Interviewees were not offered incentives for participating aside from incentives offered to cafeteria operators for providing additional information as described below in the “Production Records” section.

<b>Table 3: Interviewees</b>		
<b>Interviewee Category</b>	<b>Number Contacted</b>	<b>Number Interviewed</b>
Cafeteria Operators (COs)	8	5
Worksite Wellness Coordinators (WWCs)	25	2
Agency Leadership (ALs)	12	9
DOH Healthy Eating Active Living (HEAL) Representative	1	1
<b>Total</b>	<b>46</b>	<b>17</b>

Of the 46 individuals contacted, 17 responded including 5 cafeteria operators, 9 representatives from agency leadership, 2 worksite wellness coordinators, and 1 WA DOH Healthy Eating and Active Living (HEAL) representative tasked with overseeing implementation of EO 13-06 and providing technical assistance. One researcher conducted all interviews over the phone or in-person using a prepared protocol. Interviews lasted 20-40 minutes. Questions included:

- Could you describe your position and in what ways you are currently or plan to be involved with the roll out of the Food and Beverage Service Guidelines (FBSG) part of the EO?
- Before the guidelines were adopted did you make any changes to make your menu offerings healthier? What additional things did your site decide to try? What worked? What didn't work?
- Overall, in terms of planning, implementation, and maintenance, where do you think WA State is right now in terms of taking action on the FBSG part of the EO?

All interview questions were reviewed and approved by the University of Washington Institutional Review Board. See **Appendix 3** for a full set of questions.

The interviewer audio recorded all interviews and an outside consultant transcribed them verbatim. An initial codebook was developed based on interview responses. Two researchers separately coded 30% of the interviews. They discussed any discrepancies until they came to consensus on the appropriate codes and any required edits to the codebook so that high inter-rater agreement was reached between coders. The original set of interviews was re-coded and the remaining 70% of interviews were coded independently.

### ***Cafeteria Operators***

To better understand perceived facilitators, benefits, and barriers at food service venues, researchers conducted interviews with managers and/or operators of cafeterias. Researchers invited these cafeteria operators (COs) to participate in interviews via phone or email and sent follow up communication up to two times, per protocol. Pre-appointment reminders were sent to COs two days prior to scheduled interview. Out of 8 COs contacted, 5 agreed to participate and 3 did not respond. Of the scheduled interviews, 3 interviews were conducted in-person and 2 over the phone.

### ***Agency Leaders, Worksite Wellness Coordinators, and HEAL Team Representative***

To better understand the perceived facilitators, benefits, and barriers of implementing EO 13-06 at an organizational level, researchers conducted qualitative interviews with agency leaders (ALs), worksite wellness coordinators (WWCs), and a representative from the HEAL team at WA DOH. At study outset, 12 ALs and 25 WWCs were invited via email to participate in interviews and were contacted up to two times, per protocol. Of the ALs contacted, 9 ALs contacted agreed to participate and 2 did not respond. Of the WWCs contacted, 2 agreed to participate, 4 declined, and 19 did not respond.

Worksite wellness policies were requested during interviews with WWCs; 2 provided copies of their agency's policy. See **Appendix 4** for a copy of the policies.

## **Production Records**

To evaluate the impact of changes at affected food service venues on venue purchases and sales, production records were requested from COs. At the completion of interviews, the interviewer offered a \$10 gift card for data on any of the following that venues might be willing to share: daily, weekly, or monthly totals for production; inventory records, order forms, and sales; cafeteria food production records including number of customers served and the number of servings; and inventory records on snack bar items such as candy, chips, novelties, and beverages.

Of the 5 COs interviewed, 2 submitted inventory forms; 2 refused; 1 recited order information verbally; and 1 reported not tracking this type of information. The three participating COs received the \$10 gift card for providing any type of inventory or production records. Financial information was not submitted by any cafeteria operators.

## **► Results**

### **Cafeteria Assessments**

Food service venues affected by EO 13-06 must comply with a list of 9 basic criteria in order to meet the WA DOH Healthy Nutrition Guidelines. These criteria focus on availability of whole grain options, vegetables, fruits, lean protein options, low sodium entrees, low-fat and non-fat milk products, and water. Guidelines also include limitations on deep-fried entrees and trans-fats. Large and medium food service venues must meet additional criteria to demonstrate compliance, such that increases in cafeteria size equate with higher standards. All cafeterias assessed in this report were classified as either medium or large food service venues, with 4 large cafeterias and 5 medium sized cafeterias analyzed.

According to the modified-NEMS, none of the cafeterias analyzed met the basic criteria necessary to demonstrate full compliance with the Healthy Nutrition Guidelines (**See Table 4**). However, all cafeterias demonstrated partial compliance; there were no observed differences between the affected cafeterias and the comparison cafeteria. All cafeterias offered a lean meat choice or low-fat vegetarian option when protein entrées were offered. Seven out of the 9 cafeterias offered at least 3 whole or sliced fruits, thereby meeting this basic criteria. Eight cafeterias also met the guideline for limiting deep fried foods, offering no more than 1 deep-fried entrée option on the day of the environmental survey. Use of trans-fat or partially hydrogenated oils was not evaluated, as this data could not be collected by an observational scan. Cafeteria compliance regarding beverage criteria was

somewhat mixed. While 7 of the cafeterias offered free water, only 1 of these advertised its availability. Five cafeterias offered low-fat and non-fat milk products.

Availability of low sodium options, whole grain items, and vegetable sides emerged as areas with greatest room for improvement. None of the cafeterias offered any whole grain rich options, defined as foods containing at least 50% of grain ingredients as whole grain, at the time of the cafeteria assessment. Therefore, all failed to meet the guideline of offering 2 whole grain rich options for large food service venues and one whole grain rich option for medium and small food service venues. Additionally, none of the cafeterias promoted lower sodium snacks, individual food items, or individual meals. Lower sodium was defined as 360mg of sodium or less per snack item, 480mg of sodium or less per individual food item, and 900mg of sodium or less per individual meal. Finally, data from the modified-NEMS tool on vegetable options indicates room for improvement. Basic criteria as outlined in the Healthy Nutrition Guidelines requires classification of vegetables as raw, salad-type vegetables or steamed, baked, or grilled without fat or oil. The Modified-NEMS tool utilized did not collect the level of detail needed to determine compliance with basic criteria for vegetables. This was because questions within the Modified-NEMS tool assessed number of total vegetables offered and number of vegetables cooked without fat or oil, but did not capture raw vs. cooked items throughout the entire cafeteria. Three cafeterias offered 1 vegetable with no fat or oil at the grill or hot bar. Healthy vegetable options at the grab and go sections proved more numerous and varied, with 6 cafeterias offering vegetables and an average number of 5 vegetable varieties offered.

<b>Table 4: Basic Criteria Compliance (n=9 cafeterias)</b>		
<b>Area of focus for criteria</b>	<b>Basic criteria (required for all food service venues)</b>	<b># cafeterias meeting criteria</b>
<b>Whole Grain</b>	<b>Large:</b> Do you offer daily two whole grain rich options at any time during operations hours?	0
	<b>Medium and Small:</b> Do you offer daily at least one whole grain rich option at all times?	0
<b>Vegetable</b>	<b>Large:</b> Do you offer daily at least one raw, salad-type vegetable and at least one steamed, baked or grilled vegetable seasoned without fat or oil? <b>Medium and small:</b> Do you offer daily at least one raw, salad-type vegetable?	N/A <sup>1</sup>
<b>Fruit</b>	<b>Large and medium:</b> Do you offer daily at least three whole or sliced fruits?	7
	<b>Small:</b> Do you offer daily at least two whole or sliced fruits?	N/A <sup>2</sup>
<b>Lean protein</b>	<b>All:</b> When protein entrees are offered, do you offer a lean meat choice such as poultry, fish or low-fat vegetarian option?	9
<b>Deep-fried</b>	<b>All:</b> Do you offer no more than one deep-fried entrée option per day?	8
<b>Oils (trans-fat, partially hydrogenated)</b>	<b>All:</b> Are all meal items free of artificial trans-fat or partially hydrogenated oils?	N/A <sup>3</sup>
<b>Low- and non-fat milk</b>	<b>All:</b> Do you offer low-fat and non-fat milk products?	5
<b>Water</b>	<b>All:</b> Do you have free water available and do you advertise its availability?	1
<b>Met all basic criteria</b>		0

Researchers also collected data regarding pricing, promotion of healthy foods, and observations of the kinds of approaches that are commonly recommended by behavioral economics experts. (See

<sup>1</sup> Unable to assess with Modified-NEMS tool

<sup>2</sup> No small food service venues assessed

<sup>3</sup> Although unable to assess with Modified NEMS tool, this information was captured through Cafeteria Operator interviews. 3 out of 5 Cafeteria Operators indicated compliance with the artificial trans fat criteria.

**Table 5).** One cafeteria displayed nutrition information on a large display or menu board, while 2 cafeterias identified healthier items in the cafeteria and displayed signs encouraging general healthy eating. Grab and go pricing was rarely posted for the majority of cafeterias, requiring researchers to inquire about individual items during the scan. Eight out of 9 cafeterias priced healthier entrees comparably to regular entrees, while 1 cafeteria priced healthier entrees lower than other items. Researchers observed similar findings for pricing of sandwiches, wraps, and burgers. Finally, researchers noted whether fruits and vegetables were well lit, appealing in appearance, or located near the register. All cafeterias offered well lit fruit that was either appealing in appearance or rated as mixed. Seven out of 9 cafeterias offered fruit located near the register. Seven cafeterias offered well lit vegetables, all of which were appealing in appearance.

**Table 5: Pricing, Promotion, and other aspects of Behavioral Economics Approaches (n=9 cafeterias)**

<b>Criteria</b>	<b># Cafeterias meeting criteria</b>
Nutrition information displayed on large display or menu board	1
Healthier options identified in cafeteria	2
Does the cafeteria have signs or other displays that encourage <u>general</u> healthy eating or healthy food choices? (posters on wall, signs, table tents)	2
Price of healthier entrees compared to comparable regular entrees	
Same	8
Less	1
Price of healthier sandwiches, wraps, and/or burgers compared to comparable regular ones	
Same	8
Less	1
Fruit is well lit (e.g. "Yes" fruit is as well lit as most other foods)	
Yes	9
Fruit is appealing in appearance (e.g. looks fresh, not bruised)	
Yes	5
Mixed	4
Some fruit is located near the register	7
Vegetables are well lit(e.g. "Yes" vegetables are as well lit as most other foods)	
Yes	7
No	1
N/A (No vegetables offered)	1
Vegetables are appealing in appearance (e.g. looks fresh, not bruised)	
Yes	8
N/A	1

Researchers conducting the modified-NEMS noted that 1 cafeteria in particular had made many changes in accordance with the guidelines, viewing them in a positive light. The cafeteria operator provided the research team with two lists of steps taken to meet Healthy Nutrition Guidelines: one broken down by criteria and one providing general steps taken to increase healthy foods served. See **Appendix 4** for complete versions of both documents.

## **Vending**

Of the 22 machines assessed, two machines contained 50% or more vending products meeting the healthier or healthiest criteria, placing the machines in compliance with the WA DOH Healthy Nutrition Guidelines. **Table 6** displays the percentage of vending products in each category (Healthiest, Healthier, or Limited). The table also indicates the percentage of vending machine products that comply with WA DOH Healthy Nutrition Guidelines. Green cells indicate the machine is in compliance with WA DOH Healthy Nutrition Guidelines, red cells indicate the machine is out of compliance by a large degree, and yellow cells indicate the machine is within 15% of required compliance standards.

<b>Table 6: Vending Compliance</b>				
<b>Agency</b>	<b>% snacks that meet Healthiest criteria</b>	<b>% snacks that meet Healthier criteria</b>	<b>% snacks that meet limited criteria</b>	<b>% snacks in compliance (Healthiest + Healthier)</b>
<b>Snack Vending Machines (n=8)</b>				
DES 1	6%	35%	59%	41%
DES 2	3%	32%	65%	35%
DES 3	3%	34%	63%	37%
DSHS 1	6%	35%	59%	41%
DSHS 2	5%	24%	71%	29%
Legislative	3%	30%	67%	33%
NRB	3%	32%	65%	35%
Ecology	3%	28%	69%	31%
<b>Total Snacks</b>	<b>4.0%</b>	<b>31.5%</b>	<b>64.5%</b>	<b>35.5%</b>
<b>Beverage Vending Machines (n=14)</b>				
DES 1	22%	22%	56%	44%
DES 2	0%	25%	75%	25%
DES 3	0%	33%	67%	33%
DES 4	0%	25%	75%	25%
DES 5	0%	20%	80%	20%
DES 6	0%	29%	71%	29%
DES 7	0%	13%	87%	13%
DES 8	11%	33%	56%	44%
Ecology	0%	17%	83%	17%
Legislative	9%	36%	55%	45%
DSHS1	12%	38%	50%	50%
DSHS2	0%	40%	60%	40%
NRB1	0%	29%	71%	29%
NRB 2	12%	38%	50%	50%
<b>Total Beverages</b>	<b>5.5%</b>	<b>29.1%</b>	<b>65.5%</b>	<b>34.5%</b>
<b>Overall Total</b>	<b>4.4%</b>	<b>30.8%</b>	<b>64.8%</b>	<b>35.2%</b>

**Table 5 Key:**

**Green:** in compliance

**Yellow:** Within 15% of compliance standards

**Red:** Out of compliance by large degree

As this table demonstrates, the majority of both snack and beverage items do not meet the WA DOH Healthy Nutrition Guidelines. However, a considerable number of machines (nine out of 22 machines) come within 15% of the target standards. To be categorized as healthier or healthiest, food items must meet specific calorie, fat, sugar, and sodium criteria. Grain products must also meet additional criteria. Beverage vending products must follow set guidelines regarding calories, sweeteners, fat content (for milk products), and sodium (for vegetable juice). These nutrient categories therefore remain areas for improvement in vending at state agencies based on the machines surveyed.

## **Interviews**

Interviewers asked stakeholders a variety of questions about their involvement with and anticipated facilitators and barriers to the roll out of EO 13-06 and their experience with WA DOH Healthy Nutrition Guidelines. Here, we present the results by most commonly identified facilitators and barriers and by stakeholder type.

### ***Cafeteria Operators***

Cafeteria operators (COs) expressed varied levels of support regarding the implementation of the Healthy Nutrition Guidelines. COs frequently perceived they were already compliant with the guidelines. In most cases, the COs had reviewed the guidelines and felt they were already meeting a number of criteria. “They [the agency] have requested certain things, which we are fulfilling....We’re exceeding the standards that have been set,” explained one CO. A few operators went into detail about the number of changes they’ve already made in their cafeterias including offering brown rice in place of white rice; introducing low- or no-sodium salad dressings, soup bases, and canned vegetables; and making fruit widely available. When discussing changes already being made said one CO, “Instead of saying, you know, would you like fries with that? We’re saying, would you like a green salad with that?” Though these perceptions were captured during interviews, this did not necessarily corroborate with our modified-NEMS assessment, as described above.

### **Facilitators and Perceived or Anticipated Benefits**

In general, there was great deal of variation in facilitators reported by COs. Many of the anticipated benefits seemed to be unique to each venue. However, COs generally expressed interest in providing more options for their customers. Several noted their excitement in exploring healthy food options when the Healthy Nutrition Guidelines were first released. Said one CO, “As soon as it [Healthy Nutrition Guidelines] came out, I sent that to them [WA DOH]. I took this apart in pieces and said this is what I’m doing for this piece and this is what I’m doing for this piece.” Said another, “By diversifying the menu and making it different, we’re also able to give them [consumers] healthier things.” This facilitator frame was reported by many operators, underscoring the importance of “adding options” or “diversifying the menu” rather than restricting specific food items. One CO proclaimed “We’re not going to eliminate, we’re going to make [increases in] availability.” In addition

to increasing availability, COs expressed interest in pursuing these goals through incremental changes.

**Cafeteria Operators Strongly Support Increasing Healthier Choices**

*"We give people choices."* (Cafeteria Operator)



*"By diversifying the menu and making it different, we're also able to give them healthier things"*  
(Cafeteria Operator)



*"It's become more important, it's become a priority that people choose healthier options for their meals"* (Cafeteria Operator)



Another frequently referenced facilitator captured during several interviews was the positive communication with a specific agency representative. This agency was identified as an effective mediator between WA DOH and food service venues. In most cases, operators indicated a high level of one-on-one communication and support. Said one CO, "The only communication we're getting is through [agency representative]...and to the best of [agency representative]'s abilities, keeping us informed." Another CO noted this agency representative "communicates well." This strong relationship seemed to be consistent across most cafeteria operators.

As it directly related to the Sodium Reduction in Communities Project (SRCP), COs reported many changes they had already made in reaching these goals. Said one CO, "I've got a low sodium tomato juice....I got a couple low sodium canned products." Said another, "We have started to minimize the amount of sodium that we're using in our cooking." Another CO reported sodium reduction as a more cafeteria-based approach, stating "As far as reducing the sodium, we're just trying to reduce it in all of our cooking or offering choices." It seems that changes in sodium were described in a more concrete manner among COs.

In contrast, COs discussed compliance with artificial trans-fat restrictions in general terms. Almost all COs believed they met the requirement. Said one CO, "I think so. I don't think we are using any hydrogenated oil at all. No trans fats." Another CO indicated that meal items served are free of partially hydrogenated oils "For the most part; I wouldn't say 100 percent." Another CO responded, "I haven't looked at the exact ingredients...I don't know. I don't seek it out...I don't go through every item meticulously and make sure it doesn't have certain items." Responses indicate difficulty identifying all potential sources of partially hydrogenated oils, but a general sense of compliance.

Other facilitators, mentioned by fewer operators, included: support for making nutritious items more readily available for the customers, the desire for evaluation efforts to check for compliance, request for technical assistance in meeting these guidelines specifically noting the potential benefits of involving a dietitian, and working with manufacturers to make healthy foods more affordable and accessible.

## **Barriers**

Reported barriers were fairly consistent among cafeteria operators. The most frequently noted barriers were cost concerns; lack of support from agency leadership; and a lack of broader communication among cafeteria operators themselves (e.g., to share best practices) and within agencies. Most operators felt an increased financial burden in providing healthier foods, both for the venue and the customers. “It’s expensive. You don’t make as much. You know, like I said the light mayo and light cream cheese, they cost me a little bit more money...In some cases it seems like it costs a little more money to give them healthier options,” said one operator. The same operator expressed a seasonal challenge and resistance from consumers “That’s a challenge in the winter time is some of your fruits go way up and you get that resistance where it’s like, “Well, I want it, but I don’t wanna pay that much when the fruit goes way up there.” Said another, “I hope it [the guidelines] will be used as an advisory point because at the end of the day food service operators, we’re a profit-driven business, but we have to offer what people are willing to pay for, whereas the guidelines don’t necessarily reflect what people are willing to pay for, but more what they should have.”

Financial burden also seemed to vary depending on the size of venue. Smaller venues reported greater challenges in balancing supply and demand of healthy products and needing a higher volume for profit; they also indicated they keep unhealthy options around due to their longer shelf-life. One CO shared, “You have to find a way of marrying those two [what people are willing to pay for and what the guidelines reflect] so the food service operator can be financially viable.”

Though many COs reported one-on-one communication as a facilitator, there seemed to be a general lack of communication among cafeteria operators themselves and within agencies. When asked about sharing knowledge among different sites, one operator stated “I really do not communicate much with these guys [other sites]” while another said “I don’t network much with the other operators.” Several operators identified this as an area for improvement to network with committees and within agencies. Two COs noted in their interviews that the first mention of WA DOH’s Healthy Nutrition Guidelines had come from our requests to interview them.

### **Cafeteria Operators Shared Cost Concerns of Varying Levels**

*"Changes in revenue itself would be a concern. That's why it's going to unfold slower than people want it to..." (Cafeteria Operator)*



*"if [venues] have low volume businesses it's difficult to keep that type of fresh product available without it...it's very difficult to have that and maintain it at a competitive price level where people would feel that it's reasonable" (Cafeteria Operator)*



In addition to cost concerns and lack of communication, there was support for enforcement or feedback on how cafeteria operations were and were not meeting the guidelines expressed by cafeteria operators, contrary to the perceived compliance discussed above.

Many noted issues with the guidelines themselves; COs feel the guidelines are too strict and will eliminate choices for their customers. At the same time, several emphasized the fact that these Healthy Nutrition Guidelines are just that and did not necessarily view them as a requirement for their venue. Said one operator, "The implementation of these guidelines and doing this stuff.. it's not a major issue from my point of view." Another shared what they'd heard from others saying, "That it'll [the guidelines will] become a mandate instead of recommendations or guidelines." Though support of the guidelines varied, overall COs seemed to be more focused on customer demands than customer health.

Other barriers mentioned by fewer operators included lack of healthy product availability; lack of consumer education and shared information between operators; and regulatory barriers that restrict food purchasing options. One operator shared "I cannot go to that local farmer and buy his produce. It's not inspected...I don't think people realize that those are the requirements our government has already placed on us. That we have to buy from approved sources."

These facilitators and barriers provide ample opportunity for exploring avenues for improving the implementation of EO 13-06.

#### ***Agency Leaders, Worksite Wellness Coordinators, and Healthy Eating Active Living Representative***

Overall, this group of stakeholders reported enthusiasm and support for these guidelines. Many reported a high level of involvement early on and thus buy-in with the implementation of the Healthy Nutrition Guidelines. In general, agency leaders, worksite wellness coordinators, and the Healthy Eating Active Living representative expressed similar facilitators and barriers to implementation.

## Facilitators and Perceived or Anticipated Benefits

Almost all stated that the guidelines were very important to them, mostly in terms of the health of their employees. Said one AL, “A lot of what we’re doing is laying down and developing foundational pieces for the governor’s initiative, for creating cultures of health in the worksite throughout the state,” and continued, “It’s a wonderful opportunity to put things into place so that people have the opportunity and support and resources to make healthier choices to improve their health.” While a WWC shared, “I just think it’s important for us to try to do whatever we can to make people more conscientious about health.” Many also noted the high rates of obesity and the potential impact of the guidelines. “Well I can only infer that they [the governor and his team] see the importance of people making healthier food choices and having those options and opportunity in their worksite to hopefully play a positive role in the obesity epidemic,” explained one AL.

### **Agency Leaders and Worksite Wellness Coordinators Shared Enthusiasm about Supporting the Health of Employees**

*“It’s a wonderful opportunity to put things into place so that people have the opportunity and support and resources to make healthier choices to improve their health” (Agency Leader)*

*“By implementing the guidelines, which would be evidence that we care about our employees, helped us meet that goal of [agency] being an employer-of-choice, so we have tried to integrate the governor’s executive order in relation to these nutrition guidelines into our internal strategic goal of making [agency] an employer-of-choice.” (Worksite Wellness Coordinator)*

An additional reported potential benefit was the lowered health care costs for employees and the organization. When asked about their perception of why the governor and his team chose to work on the guidelines, one AL shared “I think their [the governor and his team] motivation is to have healthier state employees. I think both because it’s important for people’s health and their work/life balance, but I also think because of the return on investment in the amount we spend in healthcare and taking care of our employees.” Said another, “If you look at the data about health outcomes in Washington, the medical interventions that you receive are only a small part of what drives health and what drives health costs, and personal behaviors are a bigger part of that.”

Another widely reported facilitator among this stakeholder group, similar to those reported by COs was personal choice and increasing options. One AL reported “We tried to really emphasize the frame of increasing access to healthy choices without really taking away people’s choices but providing them those options,” while another shared “I think that [the guidelines] will start a broader array of options. And hopefully, as that becomes more of the norm, people will start to make those selections more regularly and it just becomes the new norm.” Similar to the COS, many ALs and WWCs

expressed the importance of framing the message to provide more options, rather than restrict items.

Many ALs and WWCs expressed interest in continued evaluation of the efforts. Said one AL “I’d like to be able to revisit the guidelines and see...what issues there were in certain guidelines.” One WWC reported internal evaluation efforts, “We did a consumer survey with the restaurant owner’s cooperation to find out what the people want [the owner]’s restaurant to serve, so we had a huge, probably close to 70% return rate on our survey.” In general, stakeholders were interested in what facilitators and barriers exist on all levels and future plans for addressing those. One AL was also interested in learning about how these guidelines fit into the broader wellness policies.

### **Barriers**

Almost all stakeholders reported a lack of communication and support as a barrier in implementing the guidelines. Though they expressed general excitement over the guidelines, they felt there was a lack of communication between agencies, operators, and WWCs; and a lack of support in implementing these guidelines.

On communication, one AL reported, “We need that communication plan, and to feel a bit clearer about it, probably need to engage some level of leadership....to let them know what we’re doing and so they can let their employees know.” Said another, “I think that there’s a real siloed issue within the agency as far as understanding what we are truly doing and what we’re charged with...” Since EO 13-06 was announced and the Healthy Nutrition Guidelines were introduced, several ALs and WWCs reported a gap in shared information. One AL shared, “I think for myself, I was more privileged to see these materials really soon so that I know that they're out there, but I'm not sure that all agencies are getting the same message early.”

When asked about what changes have been made at vending service sites, ALs and WWCs were unsure but eager to learn more. Said one AL, “I don't know a lot of details about that either, but it would be interesting to hear about it.” Said a WWC, “Another thing I'd like to learn is I'd like to see a sample of a restaurant in a state office that has made changes and how they've done it.” Additionally, the interviewer sensed a lack of confidence in knowledge from several interviews with ALs and WWCs. Several were interested in seeing examples such as a prototype of a compliant vending machine, a schedule of the roll out, sample messaging, and education materials.

### **Agency Leaders Express Interest in Training Opportunities and Support**

*"I'd be really interested in some of the training and learning opportunities for staff around nutrition"*  
(Agency Leader)

*"We're all so seemingly overwhelmed with our workloads that we're just paying attention to those type priorities, and unfortunately, other things...putting aside things that we know would be very helpful but we just don't have time for."* (Agency Leader)

In addition to barriers in communication and information, several agency leaders felt there was an expectation of an increased workload for WWCs without an increase in dedicated paid time. Said one AL, "They're [WWCs] letting go at this time because they're not in a paid position as a wellness coordinator. It's additional. It's an additional task that they've either been assigned to or through interest and passion have been volunteered to." Said another, "We're all so seemingly overwhelmed with our workloads that we're just paying attention to those type priorities, and unfortunately, other things...putting aside things that we know would be very helpful but we just don't have time for." Though this increased workload was reported by agency leaders, neither of the WWCs interviewed mentioned staff time as a barrier. In addition to increased time commitments, WWCs and agency leaders both expressed uncertainty about their roles in implementing the guidelines.

The voluntary nature and financial burden of these guidelines led to a perception among ALs and WWCs that food service venues would not comply. One AL reported, "I think the biggest [concern] is there's not a lot of teeth to them in terms of enforceability. It's an executive order which state executive agencies are supposed to comply with; however, there's not funding to enforce them or even really incentivize their implementation." Said another, "There might be some resistance tied to vendors that provide the items, for example, for the vending machines."

### **Agency Leaders Share Regulatory and Financial Concerns**

*"There's not a lot of teeth to them [guidelines]"* (Agency Leader)

*"I think a lot of times cost is a prohibitive factor and I think these guidelines are going to push us to reconsider what we think is too expensive"* (Agency Leader)

Other barriers, mentioned by fewer ALs and WWCs, included: the process for disseminating information; pushback from employees; the lack of healthy options available in the food supply; and balancing expectations with reality in terms of the timeline.

### **Facilitators and Perceived or Anticipated Benefits**

To gain perspective of those responsible for overseeing the implementation of the Healthy Nutrition Guidelines and providing technical support, we interviewed a member of the Healthy Eating Active Living team at DOH. The most prominent facilitators identified were health and nutrition; involvement and communication; and agency support.

The HEAL representative described the overall goal of EO 13-06 as “increase access to healthy foods...to increase access to healthy food choices among state agency employees.” From the representative’s point of view, “It’s all about choice. It’s all about giving people healthy choices. We’re not really taking anything away, we’re just giving more choices.” Another purported benefit of the Healthy Nutrition Guidelines were that they were more food- oriented, “I do actually think the cafeteria guidelines are great, because they’re food focused rather than nutrient focused.” Beyond nutritional benefits, the HEAL representative shared, “I hope organizations would have a better understanding of their role in the health of their employees, and be able to apply it not only with nutrition, but with other aspects of human behavior.”

Involvement, communication, and support repeatedly surfaced throughout the interview. When asked about the development of the guidelines, the HEAL representative shared “[agency representative] convened the group, looked at what guidelines were already out there...in the end everyone agreed and adopted the Healthy Nutrition Guidelines.” The HEAL representative also noted, “In the end we passed the guidelines through American Beverage Association.” In preparing for the implementation of the guidelines, the HEAL representative reported engaging stakeholders by providing training and technical assistance to cafeteria and vending operators, worksite wellness coordinators, and agency leaders. The HEAL representative also acknowledged the support of various agencies and state leadership in implementing the guidelines.

Like other stakeholders, HEAL is interested in learning more about existing facilitators and barriers in the agencies through evaluation efforts. “We could definitely use that information [barriers] to help us provide technical assistance to them [agencies]. I’d love to know where they would like to see technical assistance or what they need.”

### ***Healthy Nutrition Guideline Leadership Representative***

#### **Barriers**

The largest barrier reported by the HEAL representative was financial resources at every level. The HEAL representative shared, “I think the main issue is just dollars,” acknowledging that this may impact agencies differently; “and especially in places...like prison...they don’t have a lot to spend on any food, much less be able to increase what they’re spending.” As an oversight agency, they too, reportedly face financial burdens having only one staff person dedicated to this work. In recommendations for agencies implementing the guidelines, “I think that they need someone who is

spearheading it in their agency, who wants to see it happen...plus having support from leadership in the agency, plus having the knowledge...to make the policy and adopt it and then implement.”

Other barriers include a lack of understanding as it relates to implementation, and also monitoring and evaluation. As the HEAL representative explained, “It’s going to take time for agencies to understand how to do it and what to do.” In terms of monitoring and evaluation, HEAL mentioned it “is going to be a challenge and figuring out who is going to do that and how it’s going to happen.”

## **Production Records**

At this time, cafeteria operators were largely unwilling to provide production records or sales data to researchers. Due to the lack of participation and data available, researchers were unable to draw any conclusions related to production and sales. Operator responses indicate that unless mandated or requested by agency leadership, it is unlikely cafeteria operators will comply with requests of this nature.

## **Limitations and Strengths**

Sample size for all methods was limited due to funding, time restrictions, and response rate. Collection of production record data presented particular challenges in that cafeteria operators were generally unwilling to share them. It appears that a higher level intervention is necessary to obtain this information. The busy schedule of cafeteria operators limited available interview time, impacting both sample size and interview quality. Lack of response from WWCs to interview requests also imposed limitations on research results, limiting interview response rate. Lack of support and knowledge regarding the Healthy Nutrition Guidelines may also have limited response rates.

Although the Modified-NEMS tool was adapted from a rigorous source to meet criteria for the Healthy Nutrition Guidelines and pilot tested, inherent limitations exist. The tool was unable to capture data related to some Healthy Nutrition Guidelines basic criteria. The level of detail outlined in these criteria could not always be provided through a strictly observational scan. Observations were limited to one day, and collection of data according to survey questions may have failed to capture important details and nuances not available in this study per standard protocol.

Despite the limitations discussed above, this baseline evaluation can inform future implementation, monitoring, and evaluation efforts. Having documentation of both quantitative and qualitative measures provides context and further explanation of quantitative data. The interviews in particular can provide descriptions of processes and individual perspectives, and descriptions over a broader period of time than the cafeteria/vending scans could alone. In addition, the data collected will allow for comparisons if similar data is collected at future points in the implementation process. And,

engaging stakeholders at initiation of project implementation will provide a base of information on facilitators, barriers, assets, and needs in order to inform ongoing strategies.

## ► Discussion

With this evaluation, we set out to determine baseline and initial impacts of EO 13-06 on the food environments of affected food service venues, assess impact (or document baseline/initial time point) on food service venue purchases and sales, and identify perceived facilitators, benefits, and barriers of implementation.

We found that both cafeteria and vending environments are far from full compliance. However, partial compliance indicates progress towards meeting guidelines and opportunity for improvement. In cafeterias, availability of low sodium options, whole grain items, and vegetable sides emerged as areas with greatest room for improvement.

A lack of communication, knowledge, and understanding throughout the system appear to create barriers towards implementation. Interviews indicated communication and resource barriers to implementation at all levels. Consistent communication, allocated resources in the form of dedicated staff time and materials, and regular updates were frequently mentioned as areas for improvement. Discrepancies in perceived roles and expectations also appeared to affect the initial roll-out of EO 13-06. While agency leaders and WWCs emphasized health issues as motivators, cafeteria operators expressed potential profits (or profit losses) as drivers for their level of participation in implementing the guidelines. Cafeteria operators believed themselves to already be in compliance or exceeding guidelines, whereas the modified-NEMS data indicates only partial movement towards compliance. Such discrepancies point to the importance of clear communication on both the individual and inter-agency level while framing guidelines in an appropriately tailored manner.

The research team was unable to obtain an adequate sample of production records, limiting ability to document a baseline or assess impact on cafeteria purchases and sales. In future evaluations, such information could be used to assess changes in food service venue offerings and purchasing power. Additionally, production records could be used to triangulate findings from the interviews such as cafeteria operator identified facilitators and barriers, including vender cooperation and product availability.

Implementation of EO 13-06 is in its early phase, and we expect that this evaluation will help inform its continued roll-out by WA DOH. Report findings point to opportunities to increase compliance by addressing barriers and building upon facilitators. In addition, food environment compliance data may help in tailoring support. Moreover, cafeterias making greater progress in adaptation of

guidelines, such as the large food service venue discussed in this evaluation, can serve as a positive example for others. Capitalizing on high interest levels while increasing frequency of communication tailored to address identified concerns could help facilitate implementation.

## References

1. Division of Nutrition, Physical Activity and Obesity. National Center for Chronic Disease Prevention and Health Promotion. Centers for Disease Control and Prevention. *Washington State Nutrition, Physical Activity, and Obesity Profile*. September 2012. Available online at <http://www.cdc.gov/obesity/stateprograms/fundedstates/pdf/washington-state-profile.pdf>.
2. National Institutes of Health. *Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report*. 1998. Available online at [http://www.nhlbi.nih.gov/guidelines/obesity/ob\\_gdlns.htm](http://www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.htm).
3. Finkelstein, EA, Trogon, JG, Cohen, JW, and Dietz, W. Annual medical spending attributable to obesity: Payer- and service-specific estimates. *Health Affairs* 2009; 28(5): w822-w831.
4. Institute of Medicine of the National Academies. *Bridging the evidence gap in obesity prevention: A framework to inform decision making*. Washington DC: National Academies Press; 2010.
5. Kumanyika SK, Obarzanek E, Stettler N, et al. Population-based prevention of obesity: the need for comprehensive promotion of healthful eating, physical activity, and energy balance: a scientific statement from American Heart Association Council on Epidemiology and Prevention, Interdisciplinary Committee for Prevention (formerly the expert panel on population and prevention science). *Circulation*. Jul 22 2008;118(4):428-464.
6. United States Department of Health and Human Services, United States Department of Agriculture. *Dietary guidelines for Americans, 2010*. 7th ed. Washington, D.C.: Government Printing Office; 2010.
7. United States Centers for Disease Control and Prevention, United States Department of Health and Human Services. Health and Sustainability Guidelines for Federal Concessions and Vending Operations; <http://www.cdc.gov/chronicdisease/resources/guidelines/food-service-guidelines.htm>.
8. State of Washington. *Executive Order 13-06: Improving the Health and Productivity of State Employees and Access to Healthy Foods in State Facilities*. In: Washington So, ed. Vol Washington State Executive Order 13-06 2013.

9. Office of Healthy Communities. Washington State Department of Health. *Healthy Nutrition Guidelines: Implementation Guide for Agencies, Sites, and Vendors*. February 2014. Available online at <http://www.doh.wa.gov/Portals/1/Documents/Pubs/340-224-HealthyNutritionGuidelines.pdf>.

## ▸ Appendices

**Please contact UW Center for Public Health Nutrition for Appendices.**