

INTERVENTION

HEALTHY VENDING IOWA

Iowa Department of Public Health (IDPH)



INTENT OF THE INTERVENTION

Healthy Vending Iowa is designed to evaluate and improve the worksite vending machine environment. The intervention's focus is on modifying the food environment to increase access, availability, and purchase of healthy food and beverages from vending machines. While addressing multiple levels of the socio-ecologic model, it is an organizational and environmental change intervention that targets individual behavior. It is a **practice-tested** intervention.

OVERVIEW

Healthy Vending Iowa was developed by the Iowa Department of Public Health Bureau of Nutrition and Health Promotion (IDPH) and the Iowa State University Extension Office. The intervention includes the Nutrition Environment Measurement Survey – Vending (NEMS-V), which builds on the nationally recognized NEMS tools from Emory University and provides an assessment of the percentages of color-coded foods and beverages in the vending machine:

- green-coded (provides a serving of fruit, vegetable, low-fat dairy, or whole grain and meets Dietary Guidelines),
- yellow-coded (does not provide a serving of fruit, vegetable, low-fat dairy, or whole grain but meets Dietary Guidelines), or
- red-coded (does not meet Dietary Guidelines).

Following the NEMS-V assessment, a Vending Machine Report Card is generated that indicates how many food and beverage items need to be changed to green or yellow in order to earn a Bronze (at least 30% of yellow or green food and beverage items), Silver (at least 40% of yellow or green food and beverage items), or Gold (at least 50% of yellow or green food and beverage items) award. Action steps are provided to help make healthier choices available in vending machines and to eventually implement a vending policy. A well-developed social marketing campaign (*Mix-It-Up*) was also developed to motivate employees to use the NEMS-V color-coded system to snack healthier. This marketing campaign is tailored to white or blue collar workers and includes posters, product labels, newsletters, and other materials.

Time in the field: The intervention has been in the field since 2008.

Intended population: The primary audience at public or private worksites is employees. At state- or county-owned buildings, rest areas, or parks, the primary audience includes employees and/or visitors.

Primary setting(s): The primary settings intended to adopt the intervention include public or private worksites and state- or county-owned buildings, rest areas, or parks.

HEALTH EQUITY CONSIDERATIONS

Healthy Vending Iowa is an environmental change intervention intending to affect as many people as possible, creating a population-level impact. At the time of the Center TRT review, the intervention had been implemented in an estimated 100 non-governmental worksites, 13 State Capitol Complex buildings, and 19 county-owned buildings located throughout Iowa. Employees and visitors to these worksites vary widely with respect to demographic characteristics, such as race/ethnicity, age, and socioeconomic status. Additionally, the worksites differ by urban/rural status, public/private sector, and number of employees.

More targeted evaluation was conducted in 13 Iowa worksites through a mini-grant program supported by the Iowa Comprehensive Cancer Consortium. Seventy-seven percent of these worksites had over 100 employees. In addition, worksites in one rural county and one urban county have been evaluated as part of Iowa's Community Transformation Grant. Evaluation of the vending environment at worksites will permit the exploration of another demographic cohort, as well as the impacts on low-income workers and rural workers when compared to their urban and higher-income counterparts.

CORE ELEMENTS

This section outlines the aspects of an intervention that are central to its theory and logic and that are thought to be responsible for the intervention's effectiveness. Core elements are critical features of the intervention's intent and design and should be kept intact when the intervention is implemented or adapted.

1. **Training:** Train the individual(s) conducting the vending machine assessment(s) using an online training video located on the website to ensure accurate and reliable evaluation of the vending environment.
2. **Vending Machine Assessment:** For each vending machine located in the worksite, assess the percentages of green-, yellow-, or red-coded foods and beverages. The color-coding approach is based on well-accepted nutrition standards.
3. **Vending Report:** Develop a summary report for each vending machine that indicates how many food or beverage items need to be changed to green or yellow in order to earn a recognition level. This report may also include suggested actions to take to improve the vending environment.
4. **Worksite Goal-Setting:** Review the vending report and determine a goal for the percentage of healthy foods and beverages (i.e., green- and yellow-coded foods) for the worksite vending machine. This goal-setting may be done by a worksite wellness team, CEO, government official, public health worker, or individual/group working to promote a healthier vending environment.
5. **Employer Involvement:** Gain support from worksite management for an easier transition to healthier vending as a part of a healthier lifestyle culture for their employees.
6. **Vendor Communications:** Meet with vendors to discuss healthier vending goals and work toward having at least 30% of yellow or green food and beverages items in each

vending machine.

7. **Employee Involvement:** Engage employees in the worksite efforts toward healthier vending through product tastings, employee incentives for healthier snacking, or other opportunities.
8. **Social Marketing Campaign:** Promote healthy snacking in the worksite through marketing efforts designed to motivate employees to choose healthier options.

RESOURCES REQUIRED

Staff: A project coordinator or worksite wellness champion (can be from the worksite or from the state or local public health department) is required to conduct the NEMS-V assessment, communicate with the vendor(s), and coordinate employee involvement and the social marketing campaign. Based on the Iowa Healthy Vending experience, up to .1 FTE of professional time over a 6-month period (4 hours/week) is ideal at each worksite for a successful outcome.

Materials: All materials needed to conduct a NEMS-V assessment and the *Mix-it-Up* campaign materials are available online free of charge. Printing costs associated with the NEMS-V assessment are minimal (\$0.50 per machine), while printing costs associated with the *Mix-it-Up* campaign will vary depending on which components are used (range \$10-25 per machine).

Other Costs: Other anticipated costs include funding for employee product testings (\$50-100) and incentives to employees who purchase healthy options (\$100-150).

IMPLEMENTATION

Healthy Vending Iowa relies on a project coordinator to implement the intervention. This project coordinator may be a part of the worksite wellness committee or may be from the state or local public health department. Training using the online tutorial is required to ensure accurate assessment of the vending environment using the NEMS-V (see 'Training and Technical Assistance' section). It is recommended that the intervention be fully implemented over the course of 6 months; however, worksites or other locations may continue to use Healthy Vending Iowa to further improve and promote healthy snacking.

How It Works:

1. **NEMS-V Assessment:** For each individual vending machine, the project coordinator completes the color coding for food or beverage items that clearly fall into the green, yellow, or red categories. If the food or beverage items are not listed on the Food References Sheet, complete an internet search for the product nutrition label and enter the nutrition information into the Healthy Choices Calculator. Go to www.nems-v.com and click on the Worksite Vending Report Card button to enter information from the site location and individual vending machines.
2. **Worksite Vending Report Card:** The customized Report Card indicates how many food and beverage items need to be changed to green or yellow in order to earn a recognition level. The Report Card also includes a checklist for actions to take to improve the vending environment and eventually implement a vending policy. If

applicable, a Recognition-Level Certificate will also be provided. The recognition levels include Bronze (30% of choices are yellow or green); Silver (40% are yellow or green); Gold (50% are yellow or green and no red foods are advertised).

3. **Worksite Wellness Committee:** Form a worksite wellness committee that includes the project coordinator in order to define worksite goals for healthier vending, to organize communication efforts with vendors and work toward developing a healthy vending policy, and to coordinate employee activities promoting healthy vending.
4. **Vendor Communications:** The project coordinator or worksite wellness committee representative should meet with the worksite vendor representative to provide the company with healthy food and beverage standards and to discuss the current availability and need for healthier food and beverage options in the vending machine. Additional discussion points may include labeling the items with red-yellow-green stickers or reducing the cost of healthy food items. Work towards having at least 30% of yellow or green food and beverage items in each vending machine and renegotiating vendor contracts to include sections that promote healthier food and beverage choices.
5. **Employee Involvement:** Engage employees in the worksite efforts toward healthier vending. Make arrangements with the vendor to do product tastings or 'Free Snack Day' with employees. These taste tests may include a survey component to provide feedback to vendors on which healthy food and beverage items were most preferred by employees. Provide incentives to employees who purchase healthy options, such as stress balls shaped like fruits or vegetables or kitchen utensils like vegetable peelers.
6. **Social Marketing Campaign:** Motivate employees to use the NEMS-V color coded system to snack healthier. The *Mix-It-Up* campaign contains a variety of materials (e.g., vending machine signs, promotional posters, brochures) to promote healthy vending and help employees choose healthier options.
7. **Follow-up NEMS-V Assessment:** Conduct a follow-up NEMS-V assessment after a specified time period (e.g., 6 months following the initial assessment), to evaluate progress toward healthier vending. Use the follow-up assessment and other information (e.g., minutes from worksite wellness committee meetings) to document successes, challenges, and progress toward healthier vending in the worksite.

Work with Blind Vendors:

An important aspect of Healthy Vending Iowa is collaborations between the IDPH and blind vendors. The federal Randolph-Sheppard Act gives "priority for state licensing agencies to develop vending businesses on specified government properties for legally blind vendors to operate." The IDPH has worked closely with 4 blind vendors responsible for the vending machines in 13 State Capitol Complex buildings. This work has led to lessons learned, new resources for blind vendors, and a Memorandum of Understanding between the IDPH and Department of the Blind's Business Enterprise Program (BEP) to provide healthy selections in the vending on state-owned and operated buildings. With 20 blind vendors participating in Iowa's BEP, this MOU and future work with blind vendors has great potential for expanding the reach of Healthy Vending Iowa. Furthermore, this work has applicability for other states given the federal law.

Keys to Success:

- Management support: Gaining support from management is essential to begin the transition to healthier vending.
- Active wellness champion: Having an active wellness champion in the site helps to garner support for healthier foods and facilitate adoption of healthier standards.
- Vendor communication: Assisting the vendor with identifying products that meet the healthy criteria and marking the products correctly.
- Vending contracts: Including specific requirements in the vending contracts to support healthier options is the best way to sustain the availability of healthy choices in vending machines.
- Governmental support: Use momentum gained from governmental support for implementing procurement guidelines to engage stakeholders and promote healthy vending on state and local property.

Barriers to Implementation:

- Product availability: Smaller vendors may face challenges in finding enough yellow and green foods that meet the NEMS-V criteria given the shorter shelf-life of these foods, increased need for profits, or varying inventory from their distributor.
- Vendor engagement: Even with management and employee support, if the vendor is not interested in the healthy vending effort, the process is difficult and could be short-lived.

EVIDENCE REVIEW SUMMARY

Underlying Logic: Healthy Vending Iowa is based on the policy and organizational levels of the socio-ecological model. It also includes a social marketing component with targeted messaging to promote healthy snacking and to motivate employees to choose healthier options.

Strategies Used: Healthy Vending Iowa employs three evidence-based strategies for healthy eating:

- Requiring a minimum of 30% healthy food or beverage options in vending machines is an example of [changing access and availability to favor healthy foods and beverages](#).
- The *Mix-it-Up* campaign is an example of [food and beverage marketing to favor healthy foods and beverages](#).
- Using “stoplight” color-coding to label vending options as green, yellow or red is an example of [point-of-purchase/decision labeling to favor healthy foods and beverages](#).

Formative Evaluation: Formative work for Healthy Vending Iowa included a literature review of the vending machine food environment, reliability testing of the NEMS-V, pilot testing of Healthy Vending Iowa tools at worksites, and development of the social marketing component. Reliability testing of the NEMS-V showed good inter-rater and test-retest reliability. Healthy Vending Iowa tools were distributed to worksites via a CD for pilot testing. The testing contributed to improvements in the tools and highlighted the need for them to be easily accessible by worksites. In response to this need, a website was developed that not only gives worksites immediate access to the tools but also allows developers to easily modify and update tools and resources when necessary. Results from the reliability and pilot testing were published in *Health Promotion Practice* (see ‘Additional Information’). The development of the social marketing component (i.e., *Mix-it-Up* campaign) consisted of a

three-phase research process: (1) examination of current vending habits, beliefs, and motivations; (2) collection and assessment of consumer input to optimize message development; (3) in-market testing of messages to evaluate its influence on purchasing behavior. As a result of this research, two different social marketing kits (one for blue collar and one for white collar employees) were created to promote healthy snacking habits in the workplace.

Process Evaluation: Healthy Vending Iowa was evaluated in 13 worksites. The worksites varied by sector (public or private), number of employees (range of 30 to 1,200), and number of vending machines at each worksite (range of 2 to 10). The worksites completed an electronic survey and submitted meeting minutes, action plans or other relevant materials documenting implementation of the initiative. All worksites were required to work with vendors to identify healthy options, do product testings with employees, market healthy vending options, and use employee incentives. Process evaluation findings were based on summary reports from the worksites and are as follows:

- Worksite collaborations with vendors ranged from discussion on how to identify healthier snacks to the development of an addendum to the vendor contract to include at least 30% of healthy foods in vending machines.
- All worksites worked with their vendors to do product testings. For example, one worksite employing over 100 people held a taste testing event to sample healthy options like baked chips; over 55 employees attended this event. Some worksites also surveyed employees on which items they liked best and would most likely purchase from the machine.
- The worksites used the social marketing materials to support healthier snacking, such as including healthier snacking information in the worksite's monthly newsletter or placing healthy vending signage near vending machines.
- Employee incentives, such as water bottles or cutting boards, were used to motivate employees to make healthy snack choices.

Outcome Evaluation: Outcome evaluation for Healthy Vending Iowa was based on results from pre- and post- NEMS-V assessments of vending machines conducted by the 13 worksites and on individual worksite reports that documented policy development. Outcome evaluation findings are as follows:

- All 13 worksites reported increased availability of healthy options in at least 1 snack or beverage machine. For example, the availability of healthy options (i.e., the % of yellow and green options) was 10% at pre-assessment and increased to 46% at post-assessment for a cafeteria vending machine in a regional medical center with 425 employees. For many worksites, increased availability of healthy options occurred in multiple vending machines at the worksite (e.g., in 5 of 9 or 8 of 10 vending machines).
- All 13 worksites worked to develop vendor and/or worksite policies requiring a minimum of 30% healthy food or beverage options in vending machines. Two worksites added an addendum to their vendor contracts for 30% healthy food or beverage options in their vending machines. One worksite with 4 vending machines drafted and implemented a new healthy vending machine policy.

POTENTIAL PUBLIC HEALTH IMPACT

Reach: The potential for reach is high given Healthy Vending Iowa can be used by worksites and other facilities with vending machines. The State of Iowa laid the necessary groundwork for collaboration with the Department for the Blind and work with blind vendors operating in government-owned buildings, rest areas, and state parks to participate in Healthy Vending Iowa. Targeted messaging from the *Mix-It-Up* social marketing component appeals to population sub-groups (blue collar and white collar employees), which also increases its potential for reach.

Effectiveness: Healthy Vending Iowa was successful in increasing the availability and accessibility of healthy foods and beverages from vending machines in public and private worksites. The research-informed social marketing component of Healthy Vending Iowa further supports healthier snacking habits in the workplace. While data on changes in snacking behavior and in knowledge or awareness of healthier snacking are not currently available, these outcomes will be evaluated in future work supported by a Community Transformation Grant.

Adoption: Healthy Vending Iowa has been used in a variety of worksite settings. Some of these settings include public and private worksites, ranging from 30 to 1,200 employees and located throughout the state of Iowa. Healthy Vending Iowa has also been adopted by 13 state buildings on the Capitol Complex.

Implementation: Formative work and pilot testing contributed to well-developed Healthy Vending Iowa tools available online. The Healthy Vending Iowa website provides detailed information on the NEMS-V assessment process, *Mix-it-Up* social marketing materials, online training videos (e.g., *How to Communicate with your Vendor*), and other healthy vending resources. Process evaluation data from worksites indicate the worksites implemented Healthy Vending Iowa as intended. Healthy Vending Iowa is easy to implement at a relatively low cost, thus it seems reasonable to expect it could be implemented as intended in a variety of settings.

Maintenance: Maintenance of the intervention requires sustained worksite leadership and engagement from the vendor(s). Asking participating locations to develop a worksite policy or resolution requiring at least 30% of vending options as healthy choices further supports long-term maintenance but also requires monitoring for compliance. Healthy Vending Iowa benefits from support from the governor's office and from cooperation between the Department for the Blind and the Department of Health. Support from such high levels further ensures sustainability of healthy vending on government property.

INTERVENTION MATERIALS

The following Healthy Vending Iowa materials are available free of charge from www.nems-v.com.

Resources to take to the NEMS-V assessment:

- [NEMS-V Directions](#)
- [NEMS-V Food and Beverage Coding Summary](#)
- [NEMS-V Food and Beverage References](#)

Forms to take to the NEMS-V assessment:

- [Vending Location Cover Page](#)
- [Individual Vending Machine Graphic](#)
- [Individual Vending Machine Cover Page](#)
- [Food and Beverage Recording Sheet](#)

Technical Assistance Materials:

- [Healthy Choices Calculator](#)
- [Worksite Vending Report Card](#)
- [Talking Points for Successfully Implementing Healthy Vending at Worksites](#)

Mix-It-Up Social Marketing Campaign:

- [White Collar Worksite Kit](#)
- [Blue Collar Worksite Kit](#)

EVALUATION MATERIALS

For new adopters wishing to implement Healthy Vending Iowa, Center TRT has developed an evaluation logic model and an evaluation plan. Evaluation materials have been developed for some but not all posted interventions.

TRAINING AND TECHNICAL ASSISTANCE

Training: Four training videos are available online free of charge:

- [NEMS-V Tutorial](#): 15-minute video on how to use the NEMS-V.
- [Healthy Choices Calculator](#): 5-minute video on how to use the calculator to evaluate vending machine products.
- [Healthy Vending in the Worksite](#): 10-minute-video to promote healthy vending to business decision makers.
- [How to Communicate with Your Vendor](#): 5-minute video to encourage vendors to participate.

ADDITIONAL INFORMATION

Web links: www.nems-v.com

Program Contact(s):

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Related Resources: [Nutrition Environment Measures Survey](#)- Includes updates, applications, publications, trainings and other resources on NEMS.

Publications:

Voss, C, Klein, S, Glanz, K, Clawson, M. Nutrition Environment Measures Survey–Vending: Development, Dissemination, and Reliability. *Health Promotion Practice* 2012; 13(4): 425-430.