

# CHANGE THE FUTURE WEST VIRGINIA

## EVALUATION REPORT



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### | Communities Putting Prevention to Work |



SCHOOL OF PUBLIC HEALTH  
HEALTH RESEARCH CENTER

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## INTRODUCTION

Obesity and tobacco use are among the leading causes of preventable death and disability in the United States. In 2010, the Centers for Disease Control and Prevention (CDC) initiated the Communities Putting Prevention to Work (CPPW) program to put in place evidence-based strategies in 50 communities across the nation to reduce chronic diseases related to obesity and tobacco use. Under two-year CDC grants, the communities—which included urban, suburban, rural and tribal areas—were charged with improving access to nutritious foods, increasing physical activity and reducing tobacco use through a variety of environmental changes. The Mid-Ohio Valley in West Virginia was one of 28 communities under the CPPW program that specifically addressed obesity. A significant characteristic of the CPPW project was that it involved environmental and systems change rather than focus on individual change. These efforts helped build on prior work done in West Virginia and involved the West Virginia University Health Research Center, West Virginia Bureau for Public Health and the West Virginia Office of Child Nutrition.

## CHANGE THE FUTURE WEST VIRGINIA

The West Virginia Bureau for Public Health was awarded a CPPW grant targeting the Mid-Ohio Valley (MOV), a largely rural, six-county area with a population of 133,280. Locally branded as “Change the Future West Virginia,” the effort focused on reducing obesity by improving nutrition and increasing physical activity. Change the Future WV focused on changing policies, systems and environments to make healthier choices more accessible for residents of all ages. Project goals included increasing access to fresh fruits and vegetables (FFVs) in schools and in the community, as well as increasing access to physical activity opportunities.

Specific strategies for accomplishing nutrition-related goals in the community included: 1. implementing a FFV program in elementary schools; 2. increasing healthy food offerings at concessions stands during school sporting events; 3. initiating healthy checkout aisles, increasing the visibility of FFVs, and removing toys from cold cereal, soda and candy aisles in grocery stores; 4. increasing access to FFVs in convenience stores; 5. improving access to farmers’ markets by increasing the number of markets and the hours of operation; and 6. engaging in media promotion. To increase opportunities for physical activity, Change the Future WV worked to: 1. develop community connectivity plans; 2. develop joint-use agreements with local businesses and schools; 3. improve and promote existing trails; 4. allow for the hiring of 14 additional physical education (PE) teachers during the project’s first year; and 5. increase PE and physical activity opportunities in schools.

Change the Future WV initiatives were accomplished through partnerships with the West Virginia Bureau for Public Health, the Mid-Ohio Valley Health Department and the evaluation team at West Virginia University Health Research Center. County coordinators were hired in each of the six counties to oversee daily implementation, and county-level coalitions were formed to represent key community stakeholders.



Under the two-year CPPW grant, which began in March 2010 and ended in December 2012 (*after a nine-month, no-cost extension*), a team from the West Virginia University Health Research Center was contracted to evaluate Change the Future WV intervention activities in schools and communities. Additional funds, provided by the CDC, supported an enhanced evaluation grant, which was awarded to the West Virginia Bureau for Public Health and the West Virginia University Health Research Center in September 2010. The enhanced evaluation provided additional data to help assess the impact of Change the Future WV by tracking biometric measures of children in public schools and adult caregivers who were recruited from Women, Infants, and Children (WIC) clinics in the MOV.

This report highlights key findings from the base evaluation and offers timely recommendations that will help inform future work to promote health and contribute to reduced obesity across the state. Activities evaluated under the grant, along with their baseline and follow-up observation periods, are presented in **TABLE 1**. More information about Change the Future WV and the evaluation activities, including those that are not detailed in this report, is available at: <http://ctfwvresources.com>. A report describing the enhanced evaluation activities is available at <http://publichealth.hsc.wvu.edu/hrc>.

**TABLE 1** TIMELINE OF EVALUATION ACTIVITIES

EVALUATION ACTIVITY	BASELINE DATE	FOLLOW-UP DATE	THIRD OBSERVATION <i>Where Applicable</i>
<b>IN COMMUNITIES</b>			
Baby-friendly hospital index	January 2011	January 2012	
Consumer surveys	November 2010–March 2011	November 2011–January 2012	
Convenience store observations	December 2010–February 2011	December 2011–February 2012	June 2012
Employer breastfeeding survey	Fall 2010	Fall 2011	
Farmers’ market observations	Summer 2010	Summer 2011	
Grocery store observations	November 2010–March 2011	November 2011–January 2010	June 2012
Media tracking	October 2010	April 2012	
Policymaker Survey	February 2011	February 2012	
Public perception surveys			Spring 2012
Trail observations	September 2010–October 2010	September 2011–October 2011	September 2012 – October 2012
<b>IN SCHOOLS</b>			
Concessions stand observations–basketball	Winter 2011	Winter 2012	
Concessions stand observations–football	Fall 2011	Fall 2012	
Fresh fruit snack program	Beginning of spring 2011 semester	End of spring 2011 semester	
PACER test	Beginning of PE terms during the 2010-2011 school year	End of PE terms during the 2010-2011 school year	
Student body composition (BMI percentile)	Beginning of PE terms during the 2010-2011 school year	End of PE terms during the 2010-2011 school year	
Student physical activity and nutrition surveys	Beginning of PE terms during the 2010-2011 school year	End of PE terms during the 2010-2011 school year	



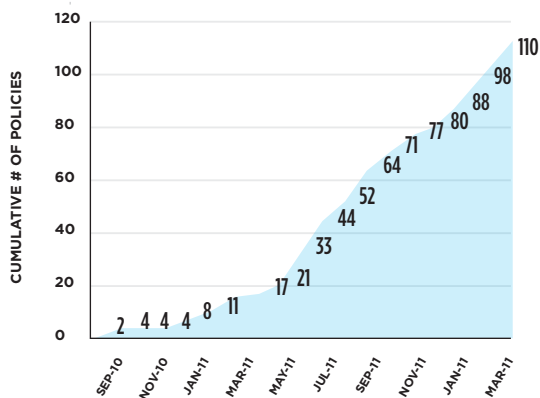
## KEY FINDINGS: POLICY IMPROVEMENTS

Notably, during Change the Future WV a total of 110 policy improvements were implemented in the MOV by local jurisdictions, schools, businesses and other organizations. The improvements included public-binding policies, such as legislation, ordinances or laws, passed by elected or appointed government officials. These also included new municipality and school policies to support healthier food choices, two “Complete Streets” ordinances passed by one jurisdiction, other policies to increase opportunities for physical activity and other efforts to reduce obesity.

Additionally, public and private organizations implemented and enforced internal policy changes to help support the goals of Change the Future WV and raise awareness among area policy makers and residents about the changes needed to address obesity. This included companies providing employee flex-time for exercising, for example. Other notable changes, such as grocery stores agreeing to establish a healthy checkout aisle and increasing access to FFVs, were reached by multiple parties in the form of agreements and memorandums of understanding (MOUs). Several resolutions, proclamations and other statements of support for specific-community initiatives also were announced, including a county school board supporting a resolution that highlights the importance of having a specified amount of time for daily physical activity.

As shown in **FIGURE 1**, policy improvements began slowly at the beginning of the grant period but rose quickly as the campaign gained momentum. It took some time to set up and educate the public and stakeholders about the purpose of Change the Future WV, as well as to establish coalitions and county coordinators, who worked in communities to introduce specific policy, systems and environmental changes. As shown in **TABLE 2**, policy improvements were spread throughout the six-county MOV region.

**FIGURE 1** POLICY IMPROVEMENTS IMPLEMENTED IN MID-OHIO VALLEY



**TABLE 2** POLICY IMPROVEMENTS IMPLEMENTED IN MID-OHIO VALLEY, BY COUNTY

COUNTY	PUBLIC POLICIES	ORGANIZATIONAL POLICIES	AGREEMENTS/ MOUs	PROCLAMATIONS/ RESOLUTIONS
Multi-County	2	--	--	--
Calhoun	--	1	11	3
Pleasants	1	4	2	4
Ritchie	1	--	7	1
Roane	--	3	10	1
Wirt	1	7	9	2
Wood	--	15	25	--

## KEY FINDINGS: NUTRITION

Change the Future WV partnered with schools, grocery stores, convenience stores and farmers’ markets to implement a number of initiatives aimed at improving access to healthy and affordable foods, notably FFVs. Change the Future WV made progress in several areas. The following sections represent key evaluation findings:

**Improving Healthy Food Options in Grocery Stores:** Twenty-six grocery stores were originally identified in the MOV and 25 of these were observed by the evaluation team and county coordinators. Of the 25 grocery stores observed, eight had at least one healthy checkout aisle at the final observation period. This represents an increase from the beginning of the project when no area grocery stores had a checkout aisle displaying healthy food options. A total of 37 “Change the Future WV” signs and displays also were observed at area grocery stores, furthering the reach of campaign messaging. These signs were placed to raise campaign awareness among the community. A total of 16 grocery stores had signed an MOU related to the Change the Future WV initiatives that helped increase awareness and accessibility of FFVs.

**Boosting Fruits and Vegetables in Convenience Stores:** The number of convenience stores offering FFVs increased significantly from baseline (8% of the 85 originally identified stores) to the final observation period in June 2012 (41.5% of the 82 remaining stores, as some had closed during the intervention period). A total of 18 MOUs were signed by convenience and other similar (such as general) store owners who agreed to sell FFVs on a regular basis. In addition, the Mid-Ohio Valley Health Department passed a convenience store incentive policy across the six-county region that offered a discount on food retail permits for convenience stores that sold fruits and vegetables in-store.

**Increasing the Presence of Farmers' Markets:** Change the Future WV worked with existing farmers' markets to increase their advertising, operation hours and number of vendors. Nine policy improvements were noted, including a deal to provide space for a new farmers' market location and agreements by West Virginia extension officers to provide cooking demonstrations at local farmers' markets. The initiative also spurred more vendors to accept electronic benefit transfers (EBT) and debit cards as payment options, making it easier for customers to buy FFVs. Efforts involving farmers' markets yielded positive results.

Based on observations, there was an increase in access to FFVs through the eight existing farmers' markets (TABLE 3). The project's county coordinators also observed increases in markets' hours, the number of produce vendors at the markets, and the number of markets accepting credit and debit cards, and WIC vouchers for payment. One new market also opened between Summer 2010 and Summer 2011 (the two evaluation observation periods for farmers' markets).

**TABLE 3** KEY CHANGES AT AREA FARMERS' MARKETS

	BASELINE SUMMER 2010	FOLLOW-UP SUMMER 2011
Total # of markets	8	9
Hours of operation	MEAN = 4	MEAN = 4
Total vendors present	MEAN = 7	MEAN = 7
Average # of patrons	MEAN = 9	MEAN = 15
<b>ACCEPTED PAYMENT METHODS</b>		
Cash	6 (100%)	9 (100%)
Check	4 (67%)	8 (89%)
WIC voucher	2 (33%)	5 (56%)
Food stamps	0 (0%)	0 (0%)
EBT	0 (0%)	1 (11%)
Credit/Debit	0 (0%)	2 (22%)

**NOTE:** Percentages at baseline are based on six observations; two markets closed for the season before observations could be conducted.

Based on a survey of 349 area residents beginning in November 2010 and a follow-up survey of 364 residents a year later, the percentage of respondents reporting that they purchased FFVs at a convenience store or farmers' market in the previous six months increased overall (TABLE 4). Of note, significantly more individuals reported they had purchased FFVs at a farmers' market from baseline (42%) to follow-up (53%). Also, significantly fewer respondents rated the cost of FFVs in their community as very expensive from baseline (23%) to follow-up (16%).

**TABLE 4** CONSUMER SURVEYS ON FRESH FRUITS AND VEGETABLES

	<b>BASELINE</b> <i>November 2010-March 2011</i>	<b>FOLLOW-UP</b> <i>November 2011-January 2012</i>
In the past six months, have you purchased fresh fruit and vegetables from a convenience store? <b>YES</b>	10%	14%
In the past six months, have you purchased fresh fruit and vegetables from a farmers' market? <b>YES</b> *	42%	53%
How would you rate the cost of fresh fruits and vegetables in your community? ( <i>Very expensive</i> )*	23%	16%
How would you rate the quality of the fresh fruits and vegetables in your community? ( <i>Excellent or good</i> )	94%	95%

\*  $P \leq .05$ 

**Offering Healthier Foods and Beverages at Concessions:** For concessions offered at high school football games in the MOV, the average number of healthier foods (*most commonly soft pretzels, popcorn and baked chips*) increased from two items at baseline (*in Fall 2011*) to three items at follow-up (*in Fall 2012*). The average number of healthier beverages (*most commonly water, diet soda and low-calorie sports drinks*) increased by the same amount over the same time period. For basketball, the average increase of healthier foods and beverages grew from 3 and 2.3 items, respectively, from baseline (*Winter 2011*) to 3.2 and 2.9 items at follow-up (*Winter 2012*). There also were a total of 15 policy improvements related to concessions stands that covered community groups, individual schools and county-wide policies. These policies and agreements were written to increase the number of healthier items sold at concessions stands.

**Mixed Results for FFV Snack Program:** A FFV program for elementary school students showed mixed results, based on surveys of 4th and 5th grade students and their teachers. Student surveys indicated that, in general, students had the opportunity to try new FFVs. More students at follow-up reported having tried a variety of FFVs. Even though teachers' enthusiasm for the program increased between baseline (*beginning of Spring 2011 school semester*) and follow-up (*end of Spring 2011 school semester*), teachers reported a significant decline in students' enthusiasm for the program. The average number of students taking at least one bite, and the average amount of the fruit or vegetable consumed, fell slightly from baseline to follow-up.

## KEY FINDINGS: PHYSICAL ACTIVITY AND BODY MASS INDEX

Key initiatives implemented under Change the Future WV to change the landscape for physical activity in the six-county region included increasing physical education opportunities; developing safe and connected routes for walking, hiking and biking; improving community parks and playgrounds; and sponsoring events to provide increased opportunities for residents to be active. The activities conducted to assess the impact of these initiatives were primarily focused on the school environment, with the exception of measures to assess the usage of and signage on 11 area trails in 2010 and 2012 and recording policy improvements related to physical activity.

The CPPW grant also included a specific objective to work toward daily physical education (*PE*) for students, and allowed for the placement of 14 PE/health and wellness educators in MOV middle and high schools. Findings from the school-based evaluation activities focused on assessing student body mass index (*BMI*), fitness and physical activity levels.

**Decreasing Student BMI:** One Change the Future WV effort involved conducting BMI assessments in middle and high schools throughout the region and evaluating student BMI at the beginning and end of PE terms. The effort took place over the 2010-11 school year.<sup>1</sup> (**TABLE 5**).

**BMI Results, 2010-11 School Year:** From the beginning of the PE term to the end of the PE term, there was a significant decrease in BMI among 1,948 PE students in grades 7 to 10. Specifically, the percentage of students who were overweight or obese at the beginning of the term dropped from 42.5% to 40.7% by the end of the term. When the data were stratified by grade level and term length, high school students enrolled in an 18-week PE course had a significantly greater change in BMI from the beginning of the term (73.6%) to the end of the PE term (71.8%). Middle school students who were enrolled in an 18-week PE course did not see a decrease, and the results were mixed for students enrolled in shorter (9-week) and longer (36-week) PE terms.

**TABLE 5** WEIGHT CATEGORY ASSESSMENTS FOR MIDDLE AND HIGH SCHOOL STUDENTS

	<b>BEGINNING OF PE TERM</b> <small>2010-11 school year</small>	<b>END OF PE TERM</b> <small>2010-11 school year</small>
UNDERWEIGHT	2.7%	2.6%
HEALTHY WEIGHT	54.8%	56.7%
OVERWEIGHT	16.2%	15.2%
OBESE	26.3%	25.5%
OVERWEIGHT/OBESE*	42.5%	40.7%

\*P ≤ .001

**Boosting Student Fitness in Schools:** To augment student BMI data with a performance-based measure of aerobic capacity, 701 area 9th and 10th graders completed the Progressive Aerobic Cardiovascular Endurance Run (PACER), a test that requires continuous running between two lines on pace with recorded audio beeps. Students keep running until they are unable to keep pace with the beeps. This test is part of the larger FITNESSGRAM® assessment program. Significantly more students performed in the “healthy fitness zone” at the end of the Fall PE term (43%) than at the beginning (34%) of the Spring PE term during the 2010-11 school year.

## OTHER KEY FINDINGS

Several other indicators regarding the effectiveness of Change the Future WV were monitored, including the tracking of public perceptions, media and certain events connected to the efforts. Highlights include:

**Public Perceptions Tracking:** At the end of the grant period, a series of public intercept surveys were conducted across the MOV. A total of 349, out of a targeted 350, surveys were completed. These surveys were sampled across the six counties with the number of respondents in each based on the population of the counties. Surveys were conducted in downtown areas of various towns and cities within a county in order to have public access to respondents. Without prompts, 58.3% of respondents reported hearing of Change the Future WV. Of the respondents who had heard of Change the Future WV without prompts:

- 82.3% correctly identified the major goal of the initiative as changing “unhealthy environments related to physical activity and nutrition;”
- 79.5% had an overall “Excellent” or “Good” opinion; and
- 45.8% reported speaking with someone else about the Change the Future WV initiative.

<sup>1</sup> A second year of BMI data was collected under the Enhanced Evaluation efforts and is not included in this report.



About four out of five (80.2% of) respondents who had seen media ads for Change the Future WV thought the ads were “Excellent” or “Good.”

A total of 43.8% of all respondents had seen or heard about healthy checkout aisles; and 24.9% of all respondents had seen the healthy checkout aisles while shopping. About nine out of 10 (89.4% of) respondents who had heard of the healthy checkout aisles had an “Excellent” or “Good” opinion of them.

Of all respondents:

- 47.1% reported having increased opportunities for physical activity over the past two years.
- 53.4% reported having increased access to FFVs over the past two years.

**Events and Media Tracking:** As of April 2012, a total of 227 coalition-sponsored events had been held in the MOV. During Change the Future WV, an average of 20 coalition meetings took place in each county. Visits to the Change the Future WV website varied considerably, with increases in unique visitors that coincided with major events. Under the initiative, radio, television and newspaper ads were placed over the two-year period and tracked by the evaluation team.



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## CONCLUSIONS AND FUTURE WORK

Through a two-year grant, the Change the Future WV initiative demonstrated that policy, systems and environmental improvements can be implemented in rural areas and seen as a mechanism for lasting change. Of particular note, Change the Future WV led to 110 policy-related improvements affecting nutrition and physical activity among local jurisdictions, schools, businesses and other organizations in the six-county MOV. Public perception tracking under the initiative showed wide and favorable acceptance of the changes promoted by Change the Future WV. The grant helped contribute to changes in the region's physical activity and nutrition environments.

Change the Future WV was highly successful in building community partnerships around obesity prevention. When approached, private and public organizations, including local government, were very interested in evidence-based nutrition and physical activity policies and practices. As a result, a variety of initiatives were implemented, including the healthy checkout aisles, healthier concessions stands, resolutions to support physical activity in schools and joint-use agreements that show tremendous promise for the MOV population. Continuing these partnerships by teaming with local coalitions and interested citizens will be vital to future endeavors in the region.

Going forward, work will continue in the MOV around policy, systems and environmental improvements, thanks in part to a five-year CDC Community Transformation Grant (CTG) awarded to the state of West Virginia. While this grant covers the entire state, it includes the MOV and promises to build on successes related to access to FFVs and increase physical activity by continuing the work in the region and spreading successes to other areas of the state. The CTG covers nutrition and physical activity, as well as components relating to tobacco cessation and clinical preventive services. These areas also will expand Change the Future's work in the region.

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*Kimberly Blake*  
*Lauren Penwell*

### CHANGE THE FUTURE WV COUNTY COORDINATORS

*Beth Tuttle*  
*Crystal Proctor*  
*Regina Davis*  
*Kala Mace*  
*Michelle Toman*  
*Miranda Fouty*  
*Janet Heiney*  
*Amanda Ross*  
*Jennifer Deem*  
*Alley Snider*  
*Katie Thorn*  
*Brenda Lowers*

### CHANGE THE FUTURE WV LEADERSHIP TEAM

*(Excluding State Management Team Members)*

*Tomas Joyce*  
*Fred Rader*  
*Sister Jane Harrington*  
*Tony Richards*  
*Pat Mays*  
*Wayne Dunn*  
*Rodney Cox*  
*Ann Conageski*  
*Dee Scritchfield*

### CHANGE THE FUTURE WV STATE MANAGEMENT TEAM

*Joseph Barker*  
*John Yauch*  
*Jessica Wright*  
*Keri Kennedy*  
*Kristy Blower*  
*Scott Eubank*  
*Amy Wentz Berner*  
*Carrie Brainard*  
*Richard Wittberg*  
*Sue Childers*  
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*Carole Harris*  
*Andrew Bradlyn*  
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