

Improving School Food Environments Through District-Level Policies:

Findings from Six California Case Studies

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Dear Colleague:

Just a few decades ago if one were to rank the major threats facing America's children and adolescents, obesity would be far down the list. So there is an element of surprise in the fact that today, in a world where advances in medicine have made the once miraculous routine, the health of an entire generation is imperiled simply by poor eating and lack of physical activity.

Over the past three decades, rates of obesity have more than doubled among kids ages 2 to 5 and more than tripled among those ages 6 to 11. Roughly 9 million kids over age 6 are considered obese, and the consequences are already apparent. This obesity epidemic has produced a sharp increase in type 2 diabetes among children—a form of diabetes previously seen almost exclusively in adults—and is the reason more children now have high cholesterol and high blood pressure, increasing their risk of suffering heart disease and stroke as adults.

The California Endowment and the Robert Wood Johnson Foundation are committed to halting the rise in childhood obesity rates by changing food environments so that children and families can make healthy food choices. It's an effort that requires looking closely at the communities we live in to consider how unhealthy foods and inactivity are easy options while healthy eating and physical activity are choices that take considerable thought, planning and effort.

One area that can no longer be ignored is the extent to which schools have become unhealthy environments. At most of America's high schools and middle schools, there are multiple venues—vending machines, food service areas, school stores—providing young people easy access throughout the day to sugar-laden soft drinks, foods and snacks high in calories, sugar and fat, but low in essential nutrients.

We decided it was important to study communities where, recently, parents, students and school officials have decided the school campus should not promote unhealthy eating habits. To do this we funded a series of case studies at school districts in California that are at the leading edge of what we hope will be a nationwide effort to enact system-wide nutrition policies, policies that provide America's young people with healthy, nutritious and appealing alternatives to the ubiquitous junk food diet.

The case studies described in this report offer valuable insight into precisely what it takes to fight back against the underlying causes of obesity. Although evicting sodas, French fries and candy bars from the school campus alone won't solve the childhood obesity epidemic; improving the school nutrition environment is one way our communities can start building the momentum for changing the cultural forces that are at the root of the obesity epidemic. Copies of this report are available on The California Endowment's website www.calendow.org and The Robert Wood Johnson Foundation website www.rwjf.org.

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Executive Summary

DURING THE LAST THREE DECADES THE OBESITY RATE AMONG AMERICA'S CHILDREN HAS RISEN DRAMATICALLY, AND A MAJOR CULPRIT IS POOR NUTRITION.

Unfortunately, the places that should teach our children healthy eating habits and provide them with healthy foods—their schools—are all too frequently doing just the opposite. For example, at more than three-quarters of U.S. high schools, students can purchase sugary drinks from vending machines.¹

Many schools acknowledge that they give students access to foods and beverages that are unhealthy, but note that revenues from the sales of such items routinely provide critical funds for the school and often are earmarked for popular school activities, such as athletics. Nonetheless, both the foods themselves and the message conveyed by their ready availability in our schools promote unhealthy behaviors and, thus, are barriers to combating childhood obesity.

Fortunately, there is a growing trend to make school environments healthier. It involves instituting policies that set standards for the nutritional content of foods sold in schools, namely so-called “competitive foods,” items sold outside

of the school meal program that frequently include sugary drinks, candy, ice cream, “fast foods” (such as French Fries), and fatty, salty snack items. There is evidence that, when such foods are available, students consume fewer fruits and vegetables and receive more of their daily caloric intake from fat and saturated fat.²

During the last few years, legislatures in 42 states have considered bills that would provide guidance for determining types of foods and beverages that should be sold on school campuses. California is at the forefront of the movement. In September 2005, its Legislature passed measures to eliminate highly sweetened beverages and establish standards—which will soon become mandatory—for competitive foods sold in all schools, from kindergarten through 12th grade. Prior to the adoption of the state legislation, several California school districts took action to develop their own detailed policies banning sodas and regulating snack food availability according to nutritional content.

These initiatives can serve as models for schools across the country ready to establish their proper role as advocates for healthy eating. To focus more

¹ Centers for Disease Control. School Health Policies and Programs Study; 2000. Accessed <http://www.cdc.gov/nccdphp/dash/shpps/12/5/02>.

² <http://www.gao.gov/new.items/d04673.pdf>

attention on what schools can do to fight childhood obesity, the Robert Wood Johnson Foundation and The California Endowment asked Samuels & Associates to provide case studies documenting the experience of six California school districts as they developed and implemented policies aimed at reducing the availability of unhealthy foods on campus.

Six unified school districts participated in the case studies: San Francisco, Capistrano, Eureka City, Hemet, Los Angeles and Oakland.

The studies, conducted in 2004, required analysis of the individual policies adopted, site visits to 23 high schools and middle schools to assess their food and beverage environments, and surveys of all involved in the process. Collectively, the results offer new insights into the various strategies schools have pursued to restrict sales of unhealthy foods and how the experience can inform future efforts elsewhere.

Separating the Good Food from the Bad Food

In general, the policies adopted in the California districts set standards for foods and beverages available for sale to students at various locations throughout the school day outside of the National School Breakfast and Lunch programs.

All policies included a ban on soda sales, but there was considerable variety when it came to other restrictions. Many policies continued to permit sales of sweetened drinks such as fruit flavored drinks and sports drinks. One district banned all beverage sales with the exception of milk, 100 percent juice and bottled water.

Many of the provisions for snack foods prescribed nutritional content and set standards for fat, saturated fat and sugar content. For example, some policies banned snacks in which more than 30 or 35 percent of the calories are derived from fat. Other district policies were less stringent—one district only prohibited candy, and another district’s policy did not address food products at all.

The Policy Process Takes Shape

Each district followed its own path to develop and approve its policy for competitive food sales. Leadership emerged from various quarters, including parents, students, community health advocates and school board members. In several districts, nutrition advisory committees were formed, and they played a central role in the policy process.

In general, the policies that emerged were enacted because key stakeholders had become convinced that improving

Six unified school districts participated in the case studies

- San Francisco
- Capistrano
- Eureka City
- Hemet
- Los Angeles
- Oakland





Under California Core Beverage Standards for schools, the following beverages may be sold on campus: fruit drinks with 50 percent or more fruit juice and no added sweetener; water; milk (including sweetened milks); and sports drinks containing no more than 42 grams of sweetener per 20 ounces.

nutrition in the schools is central to encouraging better student health and performance. Data, research and media coverage that made the link between student diets and health helped to attract support for the nutrition policies.

Putting Standards Into Effect and Into the Vending Machines

An analysis of competitive foods and beverages sold at schools in the six case study districts demonstrates the extent to which foods and beverages sold on campus comply with California state standards, which focus mainly on sugar and fat content, and will soon become mandatory.

Under California Core Beverage Standards for schools, the following beverages may be sold on campus: fruit drinks with 50 percent or more fruit juice and no added sweetener; water; milk (including sweetened milks); and sports drinks containing no more than 42 grams of sweetener per 20 ounces. On the case study campuses, 82 percent of the beverages complied with these standards—adherence in middle schools was 71 percent, and in high schools was 84 percent. Sweetened fruit juice drinks accounted for the bulk of the non-adherence, while sports drinks, 100 percent juice drinks and milks were most likely to be in compliance.

CALIFORNIA CORE STANDARDS

FIGURE 1
Beverages adhering to California Core Beverage Standards

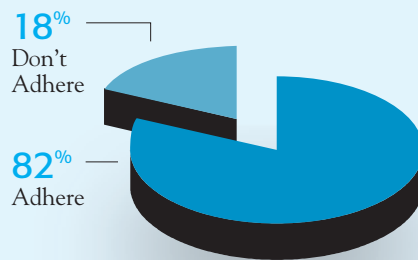
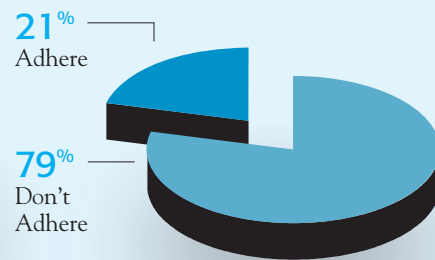


FIGURE 2
Foods adhering to California Core Food Standards



According to California Core Food Standards, foods available for sale on campus should have 35 percent or less of their total calories from fat (including no more than 10 percent from saturated fat) and sugar content should not exceed 35 percent of the food's total weight. Overall compliance in the schools studied was lower for the food standards than it was for beverages. Only 21 percent of competitive food items—19 percent for high schools, 36 percent for middle schools—met the state standard. In high-fat or high-sugar food categories, including French fries, candy, cookies and pizza products, more than 90 percent of the foods fell short of what the state considers nutritionally sound.

Foods and beverages sold in the schools were more likely to comply with the policies set by their districts, some of which were less stringent than the state standards, but there were inconsistencies. Overall, 91 percent of beverages were in compliance with district policy, but at the four districts that set policies for foods, only 61 percent of the competitive foods available in the schools measured up to the district policy. Sales venue appeared to be a key factor in determining compliance—74 percent of competitive foods sold by the school food service met the district standard, but adherence was only 55 percent for vending machine items and 45 percent for school store items.

Strong Support for Food Policies, Questions Concerning Revenue

In general, the case studies found widespread support among stakeholders for their district's nutrition policy. Most stakeholders acknowledged the role of schools in promoting healthy eating habits and noted a link between diet and better health and behavior. As one supporter remarked, "schools should be a model for healthy behavior." Another observed, "non-availability discourages consumption."

But there also were stakeholders—including those who backed the policy—who expressed reservations.

The most common concern—which came from principals, athletic departments, financial managers and student organizations—regarded the policy's financial implications, given that popular beverages and foods targeted for elimination routinely generate revenues for student activities. There was general agreement that new fundraising strategies, such as more creative marketing of healthy foods and beverages, would be needed to deal with the potential decrease in revenue.

At the time of the studies, a number of the district nutrition policies had been in effect for only a short time. However, it's important to note that there was no

According to California Core Food Standards, foods available for sale on campus should have 35 percent or less of their total calories from fat (including no more than 10 percent from saturated fat) and sugar content should not exceed 35 percent of the food's total weight.





documented drop in program funding linked directly to a nutrition policy.

Overall, stakeholders said that none of the reservations about the policy—which also included concerns about its effect on students’ freedom of choice—influenced adoption of the new standards. And while, as one respondent noted, “some of the kids” objected, they eventually “adjusted.”

Advice for Other School Districts

Surveys of stakeholders sought advice for school districts interested in adopting better nutrition policies. The advice focused on the importance of incorporating strong data and research; building a collaborative process that includes school and community interests; setting clear definitions of acceptable and unacceptable foods; communicating to students, staff and parents about why change is needed; and acting preemptively to address potential financial losses.

Additional suggestions included offering schools incentives for implementing the policy and making sure less nutritional beverages and foods are replaced with items that students find both tasty and visually appealing.

Stakeholders also discussed the importance of having a well-defined

chain of authority for putting the plan into effect and monitoring its success. At the schools, principals, financial managers, student activity directors and cafeteria managers were viewed as having central roles. At the district level, responsibilities resided with superintendents, food services directors, business offices and nutrition advisory committees.

Conclusion

Overall, the experience in California shows that support can be rapidly mobilized for policies that lead to a reduction, if not the immediate elimination of, unhealthy foods in the school environment. The case studies also reveal how challenging it can be to change the status quo. The fact that many types of unhealthy foods were still offered in schools that have targeted their removal is an indication that, even in what are highly motivated districts, unhealthy foods (or junk foods) have strong staying power.

If schools across America are to become leaders in promoting healthy foods, the lesson learned from these pioneering efforts is that reform is possible, but restricting the types of foods available on campus involves major changes and challenges need to be addressed head on. In particular, it is essential to track policy implementation

to assure that the targeted foods are actually being eliminated and that healthy and appealing foods are being offered as attractive replacements.

Schools also need assistance with developing alternative methods of fund raising. One reason there is a need for better nutrition policies on school campuses is that too many schools are relying on profits generated by the sale of sugary sodas and high-fat snacks to students. Clearly, many schools in America are woefully underfunded. But this kind of money comes at too high a price.

The good news is that schools do not have to start from scratch. As the California case studies show, a roadmap for achieving better nutrition in schools is taking shape. The main thing needed now is a culture change in which schools decide that, when it comes to the epidemic of obesity, they will no longer be part of the problem, but will instead become part of the solution.





Introduction

IN RESPONSE TO ACCELERATING CHILDHOOD OBESITY RATES, SCHOOL DISTRICTS HAVE DEVELOPED AND IMPLEMENTED POLICIES TO RESTRICT SALES OF CERTAIN FOODS OR BEVERAGES AND TO SET NUTRIENT STANDARDS FOR “COMPETITIVE FOODS”—FOODS SOLD ON SCHOOL CAMPUSES OUTSIDE OF SCHOOL MEAL PROGRAMS. The tracking system for school obesity prevention policies developed by the National Conference of State Legislatures (www.ncsl.org) found that, as of September 2005, legislatures in 42 states had introduced bills providing nutritional guidance for foods sold on school campuses. For example:

- California Senate Bill 19 (SB19),¹ passed in 2001, set minimum nutrition standards for competitive foods sold in elementary and middle schools in California. In 2003, the California State Legislature passed legislation (SB 677) eliminating sweetened beverages from all elementary and middle school campuses.² In September 2005, SB 12³ and SB 965⁴ were passed and signed into law. The cumulative

effect of these laws has been the establishment of nutrient standards for all competitive foods and beverages sold on public school campuses for grades kindergarten through 12.

- Kentucky passed legislation in March 2005, which included a ban on the sale of sugary soft drinks in elementary school vending machines and school stores during class hours. Only “school-day-approved” beverages, such as water, 100 percent fruit juice and milk, may be offered.
- Texas created a joint legislative and executive committee to study the nutritional content and quality of foods and beverages in public schools. Further, the state agriculture department amended the state school nutrition policy to severely restrict Foods of Minimum Nutrition Value (FMNV) sold on school campuses.

At the local level, school districts within California (Los Angeles, San Francisco and Oakland) and across the nation (Philadelphia, New York) have

¹ SB 19 guidelines stipulate that all competitive food items shall adhere to the following: total fat content not to exceed 35% of calories, saturated fat content not to exceed 10% of calories, and sugar content not to exceed 35% total weight.

² California’s SB 677 sets standards for beverages sold in public schools grades k-8. The only beverages allowed for sale include: fruit drinks with 50% or more fruit juice and no added sweetener, water and milk (includes sweetened milks). In addition, middle schools may sell electrolyte replacement beverages with no more than 42 grams of sweetener per 20 ounces.

³ California SB 12 sets standards for all competitive foods on public school campuses grades k-12. In addition to the fat, saturated fat and sugar standards defined in SB 19, SB 12 identifies food categories that can be sold as snacks in elementary schools and sets calorie limits for snack and entrée items.

⁴ SB 965 expands the beverage standards developed for SB 677 to cover grades k-12.

created policies that banned sodas and/or regulated competitive food sales based on nutritional content. Written district-wide nutrition policies such as these have been approved by school boards and handed down to school officials to implement.

Policy makers and administrators must have the complete picture of policy development and implementation targeting the school food environment to assess, first, whether a policy has brought about the intended changes, and second, whether the changes impact student health outcomes. Few studies have described the types of policies school districts are adopting or measured the actual implementation of these policies at schools within the district.

Seeking a more detailed understanding of California's efforts to restrict access to fast food, soda and other sweetened beverages on school campuses, Samuels & Associates conducted intensive case studies in six school districts in California that have passed a policy to restrict or ban the sale of soda and/or sweetened beverages and junk food. Funding for these case studies was provided by The California Endowment and the Robert Wood Johnson Foundation.





Methods

SAMUELS & ASSOCIATES CONDUCTED A THOROUGH SEARCH TO IDENTIFY ALL CALIFORNIA SCHOOL DISTRICTS WHERE THE SCHOOL BOARD HAD PASSED A DISTRICT-WIDE SODA BAN POLICY AS OF SEPTEMBER 2003. Six school districts had passed policies, while several more were in the process of doing so. The districts identified included: Capistrano Unified School District, Eureka Unified School District, Hemet Unified School District, Los Angeles Unified School District, Oakland Unified School District and San Francisco Unified School District.

Data Collection and Analysis

The case studies used multiple methods to get a full picture of policy development and implementation in each district. The methods included: policy analysis, assessments of school food and beverage environments and stakeholder surveys. For each case study, three to seven schools participated in the environmental assessments and a total of 23 schools were visited. Only high schools and middle schools were included in the case studies because that is where students are most likely to have access to competitive foods and beverages. Human Subjects approval was received for districts that required it.

Environmental Assessments

Environmental assessment data were collected from Spring through Fall of 2004 via observation and interviews with key school or district staff. Research team members visited selected schools, observed break and meal periods and cataloged the available foods and beverages.

Data Analysis

The environmental assessment forms were completed in hard copy format. Data were entered and then analyzed using SPSS. Analysis of the foods inventoried was accomplished with a database that combined nutrient data from several sources including: food package labels, the school district's nutrient analyses and manufacturers. Finally, standard reference values from USDA nutrient databases were used for foods for which we could not obtain nutrient data in any other way.⁵

Statistical Analyses

Notable differences in size, nutrients and adherence to policies were tested using ANOVA tests for differences between means, and one-sided z-tests were used for differences between proportions. Significance for each test was judged against a p-value of 0.05.

⁵ The USDA standard reference values have been used to characterize the nutrient content of the U.S. national food supply for 110 years. (USDA Nutrient Database for Standard Reference, Release 17, <http://www.nal.usda.gov/fnic/foodcomp>, FNDDS: USDA Food and Nutrient Database for Dietary Studies, 1.0. 2004, Beltsville, MD: Agricultural Research Service, Food Surveys Research Group, <http://www.ars.usda.gov/Services/docs.htm?docid=7673>).

Stakeholder Surveys

Stakeholder interviews were conducted by phone or in-person with 105 stakeholders across the six school districts. The number of interviewees per district ranged from eight to 33. Stakeholders included district-level administrators, school board members, principals and other school administrators, teachers, parents and representatives of community-based organizations. Stakeholder interviews addressed the following topic areas:

- Development of the policy and its passage;
- School community reaction to the policy;
- Process of implementing and monitoring the policy;
- Major barriers to implementing the policies;
- Strategies for overcoming barriers;
- Recommendations to other school districts for policy development; and
- Anticipated outcomes/health effects of the policy.





Limitations

CONSIDERATION OF THE FINDINGS FROM THIS STUDY SHOULD TAKE INTO ACCOUNT THE FOLLOWING LIMITATIONS:

- The study uses some self-reported data.
- A validity study was not conducted with the survey instruments.
- Response to the survey was on a voluntary basis.
- The sample is not representative of all California schools, and therefore is not generalizable to all district and/or middle and high schools.
- School competitive food and beverage inventories are subject to change. Some districts are continuing to implement their policies and have changed their competitive food inventories since the time of data collection.





District Policies

DISTRICT-LEVEL POLICIES REVIEWED FOR THESE CASE STUDIES FOCUSED ON COMPETITIVE FOODS AND BEVERAGES (SOLD OUTSIDE OF THE NATIONAL SCHOOL MEAL PROGRAM). These competitive food policies set standards for the types of foods and beverages allowed for sale

at all locations within the school, throughout the school day. All of the case study district policies included a ban on soda sales, but other policy components differed. Table 1 describes the policies found among these six school districts.

TABLE 1

Case Study District Beverage and Competitive Food Policies

Districts	Beverage Policy
Capistrano	<p>Allows:</p> <ul style="list-style-type: none"> • Water, milk and 100% juice • Juice drinks with at least 50% juice and no added sweeteners, maximum size 12 oz. • Electrolyte beverages with up to 42 grams of added sweetener per 20 oz. <p>Prohibits: Carbonation</p>
Eureka City	<p>Allows:</p> <ul style="list-style-type: none"> • Water, milk and 100% fruit or vegetable juice • Sports drinks • Fruit nectar with at least 35% juice • Fruit drinks containing 50% or more full-strength fruit juice, and fruit nectars containing 35% or more full strength fruit juice
Hemet	<p>Prohibits: Carbonation</p>
Oakland	<p>Prohibits: Sodas, sugary or caffeinated drinks</p>
Los Angeles	<p>Allows:</p> <ul style="list-style-type: none"> • Water • Milk, including chocolate milk, soy milk, rice milk and other similar dairy or nondairy milk • Fruit-based drinks containing at least 50% fruit juices and no added sweeteners • Electrolyte beverages with up to 42 grams of added sweetener per 20 oz. • Drinking water with no additives • Beverages that appear on an approved list developed by District Food Services
San Francisco	<p>Allows:</p> <ul style="list-style-type: none"> • Water, plain or carbonated, with no added sweeteners • 100% fruit juice, water juice blends, all with no added sweeteners; maximum size of 12 oz. • Milk: 1% or fat-free milk; enriched rice, nut or soy milk; flavored milk that contains no more than 40 grams of sugar per 12 oz, including both naturally-occurring and added sweetener; maximum size 12 oz. <p>Prohibits: Sports drinks, electrolyte replacement and similar beverages</p>

Development and Passage of the Policy

Each case study district had a unique story to tell about the development and passage of its policy. While a diverse group of stakeholders was involved in this process in most of the school districts, the impetus for developing the policy, and the leadership responsible for championing the policy, varied from

district to district. In several of the school districts, nutrition advisory committees were instrumental in developing the policy. Individual school board members also played an influential role in development and adoption of the policies in most of the districts. In a few districts, student nutrition service departments were viewed as playing a critical role.

Competitive Food Policy	
<p>Allows:</p> <ul style="list-style-type: none"> • Up to 35% of the calories from total fat (total fat stipulation does not apply to seeds and nuts) • Up to 10% of calories from saturated fat • Up to 35% of the weight from sugar (sugar stipulation does not apply to fruits and vegetables) 	
<p>Allows:</p> <ul style="list-style-type: none"> • Up to 35% of the calories from total fat (fat stipulation does not apply to seeds and nuts) • Up to 35% of the weight from sugar (sugar stipulation does not apply to fruits and vegetables) <p>Only foods from the following categories are allowed</p> <ul style="list-style-type: none"> • Milk and dairy products, including cheese, yogurt, frozen yogurt and ice cream • Fresh, frozen, canned, dried fruits and vegetables • Nuts, seeds and nut butters • Non-confection grain products including crackers, breadsticks, tortillas, pizza, pretzels, bagels, muffins and popcorn • Any food receiving Food Service prior approval 	
	<ul style="list-style-type: none"> • No competitive food policy
	<p>Prohibits: Candy</p> <ul style="list-style-type: none"> • Competitive food policy passed but not implemented at time of case study
<p>Allows:</p> <ul style="list-style-type: none"> • Up to 30% of the calories from total fat (fat stipulation does not apply to seeds and nuts) • Up to 10% of calories from saturated fat • Up to 35% of the weight from sugar (sugar stipulation does not apply to fruits and vegetables) • Size restrictions prohibit items over a specific package size 	





Examples from the spectrum of approaches to developing the policies are summarized here:

- In San Francisco Unified School District, the Student Nutrition and Physical Fitness Committee was formed following a unanimous school board resolution. It included a multidisciplinary group of stakeholders from within and outside the school district. In interviews, people involved in the process credited parent leaders with galvanizing support for the policy. They also described support from the community and the superintendent's office as factors that enabled development and adoption of a comprehensive policy by the school board.
- In Eureka City Unified School District, the process of policy development was a multifaceted effort involving several key groups—California Project LEAN, students, teachers and the Nutrition Policy Committee (NPC). It was a student presentation of a school health assessment that prompted the school board to form the NPC.
- In the Los Angeles Unified School District, impetus for policy development came from students and community health advocates who presented information to the school board

about the link between soda and sweetened beverage consumption and poor health outcomes. The board, with strong leadership from a board member, passed a Healthy Beverage Policy and subsequently adopted the Obesity Prevention Measure that sets nutrition standards for foods sold to students during the school day.

- In Capistrano Unified School District, the district's vending contract was about to expire. Food and Nutrition Services brought information to the school board about the childhood obesity and diabetes crisis and made recommendations for improving the nutritional quality of vended beverages and foods. The board unanimously passed an action to authorize only vending contracts providing drinks and snacks consistent with SB19 guidelines.

Stakeholders observed that leadership from key groups and individuals, data and research demonstrating the link between student diets and health, and media coverage of the issue were critical to passage of the policy. Most stakeholders reported few barriers to getting the policy approved in their district and noted how expeditiously the policy was developed and adopted.





Beverage and Food Environments

THIS ANALYSIS COMPARED BEVERAGES AND FOODS SOLD ON CASE STUDY SCHOOL CAMPUSES TO THE NUTRIENT STANDARDS CENTRAL TO CALIFORNIA'S COMPETITIVE SCHOOL FOOD LEGISLATION (SB 19, SB 677, SB 12 and SB 965—see footnotes 3-6) as well as to their own district policies. Given the complexities of some of the district policies, we did not conduct an analysis of all components of each policy. The authors used the core policy components that reflected the language and intent of the state legislation to determine whether competitive food adhered to district policy. These core components included nutrient standards, portion size guidelines and identification of specific food categories or food types deemed allowed or not allowed.

Beverage Findings

Environmental assessments identified the types of beverages sold on participating school campuses and assessed how these beverages adhered to nutrient standards and school district policies. Beverages were sold in a variety of venues throughout middle and high schools, including in vending machines, food service cafeterias, snack bars and carts and student stores. All of these locations were assessed to determine their adherence to beverage policies.

A wide variety of beverages were sold on the school campuses visited. High schools had many more beverages accessible to students than middle schools. There were 1,596 beverage access points in high schools compared to 252 in middle schools. High schools also sold a wider variety of beverages. The most commonly available beverages were water, sports drinks and 100 percent juice. Soda was only available on high school campuses and accounted for a small percentage of the high school beverage offerings (2%), due to the ban on sodas enacted in these policies.

Beverages were analyzed to determine if they met the nutrient standards for beverages sold at schools. These standards form the basis of California's legislation regulating sales of competitive beverages for grades k-12.

Across venues, 82 percent of beverages adhered to the state standards. Adherence was significantly lower in middle schools (71%) than high schools (84%). Beverages most likely to adhere to the nutrient standards included waters, sports drinks, 100 percent juices and milks. Beverages not adhering included sweetened juice drinks, sweetened coffee/tea drinks and sodas (Table 2).

California Core Beverage Standards

The only beverages allowed for sale include: fruit drinks with 50 percent or more fruit juice and no added sweetener, water, milk (includes sweetened milks) and electrolyte replacement beverages with no more than 42 grams of sweetener per 20 ounces.

TABLE 2

Percent of Beverages Adhering to California Core Beverage Standards
(All Schools, All Venues)

	Middle		High		Total	
	N ^a (#)	Adhere (%)	N ^{ab} (#)	Adhere (%)	N ^a (#)	Adhere (%)
Sweetened juice drink	67	0	177	0	244	0
Sweetened coffee/tea/hot chocolate	5	0	52	0	57	0
Soda	---	---	26	0	26	0
Water	38	100	497	100	535	100
Sports drink	91	100	437	100	528	100
100% juice	17	100	325	100	342	100
Carbonated 100% juice	---	---	41	100	41	100
Sweetened milk: greater in fat or size	24	100	4	100	28	100
Sweetened milk: nonfat and 8 oz. or less	3	100	19	100	22	100
Unsweetened milk: nonfat or 1%	5	100	8	100	13	100
Sweetened milk: % fat unknown	---	---	4	100	4	100
Unsweetened milk: % fat unknown	2	100	1	100	3	100
Carbonated water	---	---	2	100	2	100
Sweetened soy milk	---	---	2	100	2	100
Milk: sugar and fat unknown	---	---	1	100	1	100
Total	252	71	1596	84*	1848	82

a In this table N accounts for a beverage appearing once in each venue in each school, except in the case of vending machines where N equals the number of slots occupied by a beverage.

b 32 beverages/slots could not be categorized into the appropriate beverage category and are thus missing from this table.

* $p < 0.001$ vs middle school. CI: (-.185, -.067).

Table 3 displays an analysis of beverage adherence to state standards by venue. School stores consistently had the lowest adherence with slightly more than half (55%) of beverages adhering across middle and high schools, though the difference between venues was only significant at the high school level ($p < 0.001$). In middle schools, food service had the highest adherence rate

with 75 percent of beverages adhering. In high schools, vending machines had the highest proportion of beverages that adhered, with 86 percent of beverages meeting the standards. This was significantly higher than the proportion of vending machine beverages in the middle schools (72%) that adhered to the standards.





TABLE 3

Adherence of Beverages to California Core Beverage Standards by Venue (All Schools)

Venue	Middle (%)	High (%)	Total ^a (%)
Vending machines	72	86*	85
School food service	75	80	79
School store	44	56**	55
Total	71	84	82

a 32 beverages/slots were missing sufficient data to be categorized into the appropriate beverage category and are thus not included in this table.

* $p < 0.001$ vs. middle school vending machines.

** $p < 0.001$ vs. high school vending machines and high school food service.

Beverages sold on case study campuses were also assessed to examine adherence to the districts' own beverage policies (Table 4). Across venues, 91 percent of beverages adhered to the district policies, with higher adherence in middle schools (97%) as compared to high schools (90%) ($p < 0.001$). Beverages most likely to adhere to the district policies included waters, 100 percent juices, sports drinks, and milks. Beverages not adhering included sodas, carbonated waters and sweetened coffee/tea drinks.

Table 5 displays the analysis of district beverage policy adherence by venue. In middle schools, vending machine beverages adhered to standards at a slightly lower rate (96%) than the other venues. Though differences in adherence within middle school venues were not significant, middle school food service and school stores had the

highest rate of policy compliance with 100 percent of the beverages adhering to district policy. Compliance was comparatively lower in high school stores, where 77 percent of beverages adhered to district policy. In high schools, school food service (98%) had a significantly higher proportion of beverages that adhered to district policy compared to the beverages in school stores and in vending machines (90%).

Food Findings

Competitive food items were analyzed to assess how well the foods sold on the case study campuses matched the nutrient standards forming the basis of California's competitive food legislation as well as individual district policies addressing competitive food items. Although these schools were not required to adhere to the state nutrient standards at the time of the case studies,

TABLE 4

Percent of Beverages Adhering to District Policies (All Schools, All Venues)

	Middle		High		Total	
	N ^a (#)	Adhere (%)	N ^{ab} (#)	Adhere (%)	N ^{ab} (#)	Adhere ^c (%)
Soda	---	---	26	0	26	0
Carbonated water	---	---	2	0	2	0
Sweetened coffee/tea/hot chocolate	5	100	52	54	57	58
Sweetened juice drink	67	90	177	76	244	80
100% juice	17	100	248	87	265	88
Sports drink	91	100	426	93	517	94
Water	38	100	497	100	535	100
Carbonated 100% juice	---	---	41	100	41	100
Sweetened milk: greater in fat or size	24	100	3	100	27	100
Sweetened milk: nonfat and 8 oz. or less	3	100	19	100	22	100
Unsweetened milk: nonfat or 1%	5	100	8	100	13	100
Unsweetened milk: % fat unknown	2	100	1	100	3	100
Total	252	97	1500	90*	1752	91

a In this table N accounts for a beverage appearing once in each venue in each school, except in the case of vending machines where N equals the number of slots occupied by a beverage.

b 32 beverages/slots could not be categorized into the appropriate beverage category and are thus missing from this table.

c 94 beverages/slots could not be categorized into the appropriate adherence category due to missing size, sugar or fat content information.

* $p < 0.001$ vs middle school. CI: (.051, .102).

TABLE 5

Adherence of Beverages to District Policies by Venue (All Schools)

Venue	Middle (%)	High (%)	Total ^{a b c} (%)
Vending machines	96	90*	91
School food service	100	98**	99
School store	100	77	78
Total	97	90	91

a In this table N accounts for a beverage appearing once in each venue in each school, except in the case of vending machines where N equals the number of slots occupied by a beverage.

b 32 beverages/slots could not be categorized into the appropriate beverage category and are thus missing from this table.

c 94 beverages/slots could not be categorized into the appropriate adherence category due to missing size, sugar or fat content information.

* $p = 0.003$ vs middle school. CI: (.036, .098).

** $p < 0.001$ vs high school vending machines and high school stores.





California Core Food Standards

All competitive food items shall adhere to the following: total fat content not to exceed 35 percent of calories, saturated fat content not to exceed 10 percent of calories and sugar content not to exceed 35 percent total weight.

this analysis provided an assessment of the healthfulness of the competitive food items available. The analysis also illustrates the magnitude of change schools need to undertake when implementing healthy food standards, such as SB12.

Thirty-six percent of the competitive foods sold in middle schools and 19 percent of the competitive foods available in high schools adhered to state nutrient standards, and this difference in adherence was significant ($p < 0.001$). Fourteen of the 22 competitive food categories had a majority of food items that did not adhere to at least one of the nutrient standards (Table 6). In high-fat or high-sugar categories, such as French fries, candy, cookies and pizza products, more than 90 percent of the foods did not adhere to nutrient standards. Other categories with a majority of items not adhering included chips, cakes and pastries, side salads, cold sandwiches, entrée salads, frozen desserts, hot entrees, seeds and nuts and snack bars. Categories with at least 50 percent of products adhering to nutrient standards included breakfast entrees, meat snacks, bagels and breads, yogurt, cereal and oatmeal, fruits and vegetables and baked chips.

In both middle and high schools, while food service competitive items had the greatest rate of adherence to nutrient standards, Table 7 shows that the majority of them were not in compliance. High school food service items adhered at a significantly lower rate than middle school items (31% versus 46%, $p < 0.05$). Middle school vending machine foods had a nearly two times greater proportion of foods that adhered to nutrient standards than high school vending machines (28% versus 16%, $p < 0.05$). In school stores, nearly 25 percent of middle school store items met nutrient standards, while 17 percent of high school store items adhered (NS, $p = 0.59$).

At the time of the assessment, four of the six districts participating in the case studies had implemented a competitive food policy setting nutrient standards for foods sold on school campuses. The policies varied across districts. Among these four districts, food service competitive items (in middle and high schools) had the highest proportion of items that adhered to district policies, compared to other venues (Table 8). Overall, only 55 percent of the products sold in vending machines adhered to district policies and 45 percent of food items sold in school stores adhered to district policies.

TABLE 6

Percent of Foods Adhering to California Core Food Standards
(All Schools, All Venues)

	Middle		High		Total	
	N (#)	Adhere (%)	N (#)	Adhere (%)	N ^{a,b} (#)	Adhere (%)
French fries	3	0	8	0	11	0
Candy, regular and sugarless	20	15	439	1	459	2
Trail mix	5	0	28	7	33	6
Cookies	11	27	135	6	146	8
Pizza products	4	25	20	5	24	8
Chips, crackers and popcorn	76	28	441	19	517	20
Cake and pastry products	8	38	59	22	67	24
Side salads	2	0	2	50	4	25
Cold sandwiches	4	50	18	22	22	27
Entree salads	7	14	11	36	18	28
Frozen desserts	15	27	63	29	78	28
Hot entrees ^c	12	25	104	33	116	32
Seeds and nuts	5	40	27	40	30	40
Snack bars ^c	9	22	105	42	114	40
Breakfast entrees	4	50	3	67	7	57
Meat snacks	5	60	27	67	32	66
Bagels and breads	5	80	10	60	15	67
Yogurt	2	100	3	67	5	80
Cereal and oatmeal	9	89	4	100	13	92
Fruit and vegetables	18	100	13	100	31	100
Baked chips	1	100	20	100	21	100
Other foods ^c	3	0	7	0	10	0
Total	228	36	1545	19*	1773	21

a In this table N is equal to the number of times distinct foods showed up in a venue at a school.

b One food item could not be categorized into the appropriate food category and thus is not included in this table. 53 food items could not be categorized into the appropriate adherence category due to missing size, sugar or fat content information.

c Hot entrees include burgers, hot sandwiches, soups, Mexican foods, etc. Snack bars include breakfast bars, granola bars and energy bars. Other foods include string cheese, cream cheese and hard-boiled eggs.

* $p < 0.001$ vs middle school. CI: (.110, .240).





TABLE 7

Adherence of Competitive Foods to California Core Food Standards by Venue

Venue	Middle (%)	High (%)	Total ^{ab} (%)
Vending machines	28	16*	17
School food service	46**	31* ***	35
School store	21	17	17
Total	36	19	21

a In this table N is equal to the number of times distinct foods showed up in a venue at a school.

b One food item could not be categorized into the appropriate food category and thus is not included in this table. 53 food items could not be categorized into the appropriate adherence category due to missing size, sugar or fat content information.

* $p < 0.05$ vs. middle school.

** $p < 0.05$ vs. middle school vending machines and middle school stores.

*** $p < 0.0001$ vs. high school vending machines and high school stores.

TABLE 8

Adherence of Competitive Foods to District Policy

Venue	Middle (%)	High (%)	Total ^{a b} (%)
Vending machines	28	61* **	55
School food service	65	79* **	74
School store	---	45**	45
Total	48	64*	61

a One food item could not be categorized into the appropriate beverage category and thus is missing from this table.

b 20 food items could not be categorized into the appropriate adherence category due to missing size, sugar or fat content information.

* $p < 0.05$ vs. middle school.

** $p < 0.05$ vs. the other venues in the high schools.





Stakeholder Perspectives

STAKEHOLDERS WERE SURVEYED TO ASSESS THEIR ATTITUDES AND OPINIONS RELATED TO THE COMPETITIVE FOOD POLICIES. STAKEHOLDER ATTITUDES ARE AN IMPORTANT PIECE OF THE POLICY PROCESS BECAUSE THEY PLAY A KEY ROLE IN POLICY ADOPTION, ACCEPTANCE AND IMPLEMENTATION.

Opinions About District Policy

Most stakeholders expressed support for their district's nutrition policy.

Very few respondents expressed negative feelings about the policy.

The most common reasons for supporting the policy were to improve students' health and classroom behavior, to promote healthy eating and because of philosophical reasons. Stakeholders' statements in support of the policy included the following:

- "It is extremely important. Schools should be models for healthy behavior ..."
- "I think it's a good measure in promoting healthier habits. Non-availability discourages consumption and the students will accept the food offered at breakfast and lunch."

- "I think it is a very valuable thing we are doing. First, it limits the intake of the sugary drinks to children for prescribed periods of time, but it also teaches the kids that these are not a good choice of drinks."

A sizable minority of respondents qualified their support of the policy. They expressed concerns about a variety of factors that could undermine the success of the policy:

- Financial loss from competitive beverage and food sales resulting in decreased revenue for student activities.
- Infringement of students' choice to choose beverages and foods.
- Availability of healthy alternatives.
- Policy did not go far enough in improving the nutritional quality of beverages and foods.
- Policy needed to be more comprehensive to address other areas, such as increased physical activity.
- Policy decisions were made without input from the school community.

Concerns About the Policy and Influence on the Policy

School-based groups including principals, athletic departments, financial managers, student activity directors, student clubs and organizations and students expressed some concerns, primarily over significant loss of revenue from sales of beverages and foods that fund student activities. The sale of healthier beverages and foods and alternative fundraising strategies were viewed as not generating sufficient income to support these activities. Food Services were also concerned about the loss of revenue from the sale of competitive items.

In four school districts, a small number of stakeholders pointed to concern on the part of students that their freedom of choice would be limited. In one school district, the labor union was concerned with changes brought about by the policy that they felt might affect the workload of food service workers and threaten their job security.

Overall, stakeholders felt that these concerns did not influence the policy significantly. In several school districts, respondents stated that health concerns trumped revenue concerns in terms of influencing policy development. In one school district, several stakeholders stated that revenue concerns lead to the introduction of a student profit-sharing program and a loosening of restrictions

on sales of beverages and foods by parents. In another school district, the school board reportedly delayed implementation of the policy by six months to give the schools time to adjust.

Students,' Parents' and Teachers' Reaction to Policy

Overall school districts spoke of parents' and teachers' positive response to the policy. Some members of the school community reacted with initial skepticism that gave way to acceptance. Students in particular complained about the policy as it was implemented, but then adapted to the change. In the words of one interviewee:

- “[The reaction] seemed favorable. I don’t think anyone had an issue with it. The kids had more of an issue. They couldn’t get the things there were used to. They are using the vending machines now and have adjusted.”

Process of Implementing and Monitoring the Policy

Few stakeholders identified a single entity as responsible for monitoring and implementation, though ultimate responsibility was usually attributed to the school district. In the case study school districts, schools, athletic departments, school food services or the district held contracts for beverages and foods. School stores and student





groups purchased items from a variety of vendors.

Most stakeholders identified a combination of school-based and district-level administrators as responsible for implementing and monitoring the policy.

School-level responsibility fell to principals, financial managers, student activity directors and cafeteria managers. School-level implementation and monitoring procedures included visual checks by principals and cafeteria managers. At the school level, one stakeholder described a monitoring procedure in which school-based members of the district nutrition committee monitor implementation and report back to the committee and food services director. The committee meets several times per year and reports directly to the school board.

District-level responsibility resided with the superintendent and assistant superintendents, district food services director, district business office and nutrition advisory committee. Typical district-level implementation and monitoring procedures included memos to school administrators, lists of approved beverages and foods, centralized ordering by food service departments and working with vendors to supply only approved items.

One interviewee described a tiered approach to implementation and monitoring at the district level:

- “The superintendent is responsible for informing the school sites about the new policy. Procurement is responsible for qualifying new vendors under procurement guidelines for the business office. The business office is required to keep track of whether it is working or not. The board has overall responsibility for ensuring that it is successful.”

Stakeholders in four of the six school districts expressed confusion about how to interpret the district’s policy or lack of clarity about the step-by-step plan for implementation and monitoring. Others expressed concern about school district and school capacity for monitoring.

Barriers to Implementing

Challenges encountered implementing food policies included difficulty working with vendors, difficulty finding products that students like, increasing participation in the National School Lunch Program, and inadequate support or training for interpreting and implementing the policy.

In two of the six school districts, most stakeholders felt the implementation process went smoothly. In the other school districts, some stakeholders

perceived no significant barriers, while other stakeholders identified a variety of barriers to the policy's implementation—including financial barriers. They perceived that the policy could potentially have a negative effect on the school through the loss of student activity funds that had been derived from the sale of foods that would no longer be available. In some of the districts, student clubs/organizations, booster clubs, athletic departments and student stores had grown accustomed to raising money by selling non-nutritious foods at low prices. Some stakeholders also pointed to decreased profits earned by food services from competitive sales.

Some stakeholders felt that an initial dip in revenue resulting from changes in beverages and foods sold on campus would gradually return to previous levels, or even lead to increased revenues over time from the sale of healthier items, especially in school districts with growing student populations. Other stakeholders predicted a permanent decrease in revenue for student activities.

Despite fear of revenue loss, most stakeholders were not aware of actual revenue loss resulting from changes brought about by the policy, in part because the policy had not yet been fully implemented in their district. Other stakeholders felt it was too early

to make a determination. In two school districts, student store managers and food services were tracking revenue and reported a decrease following implementation of the policy.

Respondents described these additional barriers to policy implementation:

- Lack of student and school community buy-in due to rapid implementation and limited communication about the policy:
 - “I expected a slow rollout. The biggest problem was communicating the policy to parents, the PTA and staff. This was a major effort. Sometimes staff moved too fast.”
- Limited availability from vendors of appealing beverages and foods that meet policy guidelines;
- Student preference for less healthy beverages and foods such as sodas and chips;
- Easy access to restricted beverages and foods off campus, where these items are heavily marketed:
 - “Healthy behavior and lifestyle changes are difficult to modify within a toxic food environment and the school campus is only one part of the equation. Unless kids [don't] see other information





or advertising of foods and beverages [outside of school], it is difficult to make progress on their attitudes.”

- Difficulty interpreting the policy; lack of clarity around “approved” and “not approved” beverages and foods.

Strategies to Overcome Barriers

Stakeholders described a range of strategies to overcome barriers to policy implementation, including engaging key school community opinion leaders for support and guidance.

Many of the strategies suggested by stakeholders involved formal and informal communications processes. Specific strategies included:

- Communication with the school community to share policy changes and implementation success stories.
- Nutrition education so students understand the impact of diet on health.
- Assessment of students’ preferences for beverage and foods through surveys and taste testing.

Stakeholders in several school districts felt challenged to generate alternative fundraising strategies to replace soda and junk food sales. Some schools had

not yet attempted any alternative fundraising. The following recommendations were made for overcoming financial barriers to policy implementation:

- Replace the restricted beverages and foods with a range of flavorful, healthful alternatives. Market new products through vendor demonstrations on campus.
- Switch to non-food based fundraising activities such as car washes and sales of school spirit items.
- Negotiate district-wide vendor contracts for increased purchasing leverage and profits. Purchase beverages and foods sold for fundraising in bulk to decrease costs.
- Increase participation in the school meal program. Improve the physical cafeteria environment to encourage students to purchase beverages and foods in these areas.

Most Important Elements of a Successful Policy

When asked to provide advice to other school districts about developing and implementing school nutrition policies, stakeholders offered a range of suggestions. The most frequent recommendations fell into the following categories:

- Incorporate into the policy data and research demonstrating the benefits associated with making the beverage and food changes.
- Include all stakeholders in the process and develop collaboration and communication strategies between advocacy groups, community members and the school district to provide input into policy development and implementation.
- Set clear and precise definitions of which foods and beverages are allowed under the policy and include nutrient standards.
- Include communication and education components for students, school staff and parents that address why the policy change is taking place and explain the benefits of consuming healthy foods and beverages.
- Establish implementation procedures and include procedures for monitoring compliance with policy standards.
- Anticipate and address the revenue concerns of schools and the school district by understanding the financial impact prior to implementing the policy and assisting schools with alternate fundraising strategies.

Other recommendations included technical support for interpretation and implementation of policy standards, awards to schools that have implemented the policy, and allowing for a wide variety of beverages and foods that are visually appealing and taste good.

Changes to Expect From the Policy

Most stakeholders felt that the policy would result in changes such as improved student eating habits, behavior, performance and health. Stakeholders generally expressed hope that the policy would have an impact on the rates of students who are overweight or obese, but felt cautious in attributing such a change to the policy alone.

A number of stakeholders commented on the broad range of factors influencing student health, such as physical activity levels and media and advertising. They pointed to the need for multiple strategies for addressing childhood obesity. Some stakeholders felt the policy would have no effect as long as students continued to consume unhealthy beverages and foods outside of school. Others felt a nutrition education component was needed for the policy to influence student nutrition behavior.





Discussion

A WIDE VARIETY OF COMPETITIVE FOODS AND BEVERAGES WERE SOLD IN A NUMBER OF VENUES ON ALL SCHOOL CAMPUSES VISITED. MIDDLE SCHOOLS HAD MANY FEWER COMPETITIVE FOOD AND BEVERAGE ITEMS AVAILABLE FOR SALE AND FEWER VENUES FOR COMPETITIVE SALES WHEN COMPARED TO HIGH SCHOOLS.

Vending machines (especially for beverages) were widely available, allowing access to beverages throughout the school day. Food service competitive foods and school stores provided access to a large selection of beverages during morning breaks and lunch.

In each district, the development and passage of the competitive food policy unfolded differently. In most of the districts, a broad group of stakeholders was involved in the process. Most stakeholders felt positive about their district's nutrition policy and believed that the policy was needed to promote student health and healthier behaviors. However, school-based groups who feared revenue loss upon discontinuation of soda and junk food sales expressed concern about the policy.

Responsibility for policy implementation and monitoring in the school districts was shared by school-based and district-level personnel, but stakeholders in a majority

of the school districts expressed some confusion about how implementation and monitoring would occur “on the ground.”

Stakeholders who identified barriers to policy implementation mainly focused on financial issues. They predicted a decrease in revenue for student activities due to the elimination of certain popular beverages and foods that could be sold for fundraising. Strategies to address financial concerns included encouraging fundraising efforts that did not involve food and improving communication with the school community about the policy and why it is needed.

The case studies found that schools were able to successfully remove many sweetened beverages from a variety of beverage venues on campus, including student stores, vending machines and food service points of sale (snack bars, snack carts and cafeteria). For the most part, the case study districts removed sodas, although sweetened fruit drinks and sweetened coffees/teas were still available. The beverages that continued to be sold on campus with the greatest frequency included sports drinks, 100 percent juices and water.

Overall, school beverages were in adherence with state beverage standards and individual district policies more than 80 percent of the time. The proportion of beverages that adhered was lower in school stores than in either vending machines or food services. Vending machines had the greatest rate of compliance compared with other venues; however, nearly one in six vending beverages did not adhere. Vending machines provided the greatest number of beverage access points of all the venues selling beverages.

Rates of adherence were similar for the nutrient standards and the individual district policies. Although some of the district policies are more stringent than the state nutrient standards and some are more lenient, many of the individual district policies contained similar language to the nutrient standards.

Four out of five food items sold in the case study districts were not in compliance with nutrient standards. These were high-fat or high-sugar snack and fast foods. Districts with their own food policy had more items in compliance with their own policy. However, some of the district policies were less stringent than the nutrient standards, resulting in increased rates of compliance despite continued sale of high-fat, high-sugar foods.

The findings from the case study districts are similar to other reports of competitive foods on secondary school campuses. The 2000 School Health Policies and Programs Study conducted by the U.S. Department of Health and Human Services and the Centers for Disease Control found that the majority of schools in the US sell competitive foods from a variety of venues, that almost all high schools have at least one vending machine, and that more than half of the nation's high schools have school stores (Weschler). Although the authors could only find a few reports describing the quality of competitive foods, these studies demonstrated that 85 percent of items inventoried in middle school stores were high in fat and/or sugar (Wildey) and that more than 75 percent of the schools selling competitive foods sell soda (Weschler).

A number of studies have examined the association between access to competitive foods and student eating behavior (Kubik, Cullen). Findings from these studies revealed that students with greater access to competitive foods at school had lower intakes of fruits, vegetables and milk, and higher intakes of sweetened beverages and fried vegetables. The CHIS survey (a California population-based telephone survey that includes youth) found that adolescents who report that





sodas are available in school vending machines drink 25 percent more soda and other sugar-sweetened beverages than those who do not have access to soda in school vending machines (Hastert).

The consistency of findings between this case study report and the published literature suggests a growing body of evidence describing the ubiquity of competitive foods on school campuses, their relatively poor nutritional content as well as the negative impact unhealthy competitive foods have on student eating behaviors.





Conclusion

THE SCHOOL DISTRICTS INCLUDED IN THESE CASE STUDIES WERE HIGHLY MOTIVATED TO IMPROVE THEIR FOOD AND BEVERAGE ENVIRONMENTS, AS IS EVIDENT IN THEIR EFFORTS TO PASS A DISTRICT-WIDE POLICY. BUT WHILE THERE HAVE BEEN MANY SUCCESSES, SIGNIFICANT CHALLENGES REMAIN.

For example, despite the innovation demonstrated by the participating districts, almost one out of five beverages sold was not allowed under district policy and three-quarters of the foods sold would not be allowed under the nutrient standards forming the basis of state policy. There is confusion in interpreting the policy and translating standards into actual food and beverage products allowed for sale. There is concern about decreased revenue. There is the widespread perception that students will only purchase highly sweetened beverages and unhealthy snack and fast foods. Future research should explore these concerns and either allay them or offer strategies to address them. Research efforts also should track implementation and develop monitoring systems that can gauge the effect of school food policies over time.

The findings from these case studies demonstrate that schools are able to develop, adopt and implement policies to improve the competitive foods and beverages sold on school campuses. The case studies also reveal that schools face many challenges when implementing competitive food and beverage standards, and school districts need tailored technical assistance to overcome challenges and sustain change. The attitudes and perceptions of key stakeholders showed that they supported the policies because they felt that they would lead to improved student habits, health and performance. But they also believed that multiple strategies were needed to decrease rates of childhood obesity. The experiences described by stakeholders can help other school districts develop, write, implement and monitor nutrition policies and decide who should be involved in the policy-making process. The stories from the case study districts serve as models for other districts seeking similar changes to their nutrition environment as part of an effort to prevent childhood obesity.





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