CHARACTERISTICS OF EFFECTIVE IMPLEMENTATION

OF SCHOOL WELLNESS POLICIES

by

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DISSERTATION ABSTRACT

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The *Healthy Hunger-Free Kids Act of 2010* requires that most public school districts implement student wellness efforts that promote physical activity and nutrition. Several studies have found that there were no significant changes to schools' nutrition and physical activity environments as a result of previous district wellness policy efforts, making the identification of strategies that will help facilitate actual health-promoting policy and program changes in schools a timely and important goal. This study investigates effective strategies for improving the implementation of school wellness policies with the goal of understanding factors that predict effective and quality policy implementation more clearly. Specifically, this study explores the results of a consultative technical assistance model aimed at implementing a school-based obesity prevention program as a mechanism for school wellness policy implementation in three cohorts over a 4-year period. Analyses suggest that schools in Urban District 1 and Urban District 2 made significantly more progress in implementing health-promoting policy and program changes than did the national schools cohort.

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CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

More than 95% of school-aged youth in the United States attend school, and, aside from time spent at home, school is where they spend most of their time (National Center for Educational Statistics [NCES], 2010). As a result, national, state, and local policymakers have defined a role for schools to play in the prevention of childhood obesity by providing students with the environmental supports, education, and skills necessary to facilitate their adoption of healthy eating behaviors and participation in regular physical activity.

In 2010, both the White House and the United States Congress identified schools as an important intervention setting for childhood obesity prevention. Citing findings that, on average, school-aged youth consume more than one third of their daily calories in school and spend more than half of their waking hours in school (U.S. Department of Agriculture, 2005), the *White House Task Force on Childhood Obesity Report to the President*: *Solving the Problem of Childhood Obesity Within a Generation* (White House Task Force on Childhood Obesity, 2010) called for key actions to improve the nutritional value of food sold in schools and an increase in the availability of physical activity throughout the school day. Later in 2010, the United States Congress passed the Healthy, Hunger-Free Kids Act of 2010, which (a) established the first federal nutritional standards ever enacted for all food sold in schools during the school day, including food provided in vending machines, "a la carte" lunch lines, and school stores; (b) set basic standards for

school wellness policies, such as required local goals for nutrition promotion and education, as well as physical activity; (c) requires school district audits on compliance at least every 3 years; and (d) provides training and technical assistance for school food service providers.

These recent national actions continue momentum for school-based obesity prevention efforts established in 2004. When the United States Congress enacted the Child Nutrition and WIC Reauthorization Act of 2004, it required all school districts participating in the federally funded school meals programs to develop a school wellness policy by the 2006-2007 school year that would improve nutrition and physical activity levels in the school. This legislation required that district wellness policies include the following elements: (a) goals for nutrition education, (b) goals for physical activity, (c) nutrition guidelines for all foods available at school, (d) goals for other school-based activities designed to promote student wellness, (e) assurances that school meals guidelines are not less restrictive than federal requirements, and (f) plans for evaluating implementation of the policy. The policy did not require that the resulting district policies be aligned with evidence-based practices, nor were there any consequences for school districts that do not establish a policy. No funds were provided to support the technical assistance and training required to facilitate policy implementation.

Despite the obvious policy momentum for school wellness efforts, researchers suggest that the effects of the Child Nutrition and WIC Reauthorization Act of 2004 have been modest at best (Belansky et al., 2009). The vast majority (99%) of school districts developed policies, but they greatly varied in comprehensiveness, and very few included a

means to monitor and evaluate progress (School Nutrition Association, 2006). Several studies found that there were no significant changes to the school nutrition and physical activity environments in the schools as a result of the district wellness policies (Belansky et al., 2010; Belansky et al., 2009; Moag-Stahlberg, Howley, & Luscri, 2008). Given that the Healthy, Hunger-Free Kids Act of 2010 requires most public school districts to continue their wellness efforts and that research suggests a lack of efficacy in the implementation of this Act's predecessor, the Child Nutrition and WIC Reauthorization Act of 2004, an important and timely goal would be to identify strategies that will facilitate actual health-promoting policy and program changes in schools. Thus, it is important to examine the literature to determine how such programs can be used to facilitate the successful implementation of the Healthy, Hunger Free-Kids Act of 2010.

Contrary to the findings regarding implementation of the Child Nutrition and WIC Reauthorization Act of 2004, there is evidence that school-based obesity prevention programs can be an effective policy implementation vehicle (Katz, O'Connell, Njike, Yeh, & Nawaz, 2008; Kropski, Keckley, & Jensen, 2008; Peterson & Fox, 2007; Shaya, Flores, Gbarayor, & Wang, 2008; Thomas, 2006). The literature suggests that the most effective school- and community-based prevention policy implementation efforts have been rooted in a social ecological approach (Stokol, 1996). The social ecological approach is not a theory in and of itself, but rather a set of theoretical principles that guides the understanding of the dynamic interactions between individual, systems and environmental change (Stokol, 1996). As such, the social ecological approach has been widely used as the basis for guiding principles for the development, implementation, and

evaluation of school-based prevention policy implementation efforts (Stokol, 1996).

Stokol suggests the following as guiding principles for policy implementation models: (a)

Identify the highest impact leverage points within a system to hasten effective policy

implementation; (b) integrate individual, systems, and environmental interventions into a

multifaceted program approach; and (c) plan for and measure the overall sustainability

and scope of effort over time. One advantage of the social ecological approach is it

accommodates other theories that help explain the design, implementation, and

evaluation of school-based prevention programs (Stokol, 1996).

The two most prevalent theories used within the social ecological approach in

effective school-based prevention programs are diffusion of innovation theory (Franks

et al., 2007) and social-cognitive theory (Thomas, 2006). Diffusion of innovation theories

address the process by which individuals within a system communicate, decide about, and

act on innovations (Rogers, 2002). Diffusion theory posits that adoption is more likely

when innovations are (a) an improvement over the status quo, (b) compatible with the

existing values held by the system, (c) simple to use and understand, (d) noticeable, and

(e) incremental (Rohrbach, D'Onofrio, Backer, & Montgomery, 1996). Diffusion of

innovation theories are generally used as the basis for implementation and dissemination

(Franks et al., 2007; Thomas, 2006). Social-cognitive theory posits that behavior is

influenced by social, environmental and individual factors, and that all must be addressed

(Bandura, 1986). Social cognitive theory is generally used as the basis for program design

(Franks et al., 2007; Rohrbach et al., 1996; Thomas, 2006).

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This study investigates strategies for improving the implementation of school wellness policies with the goal of understanding factors that predict effective and quality policy implementation more clearly. To that end, this study will explore the results of a consultative technical assistance model aimed at implementing a school-based obesity prevention program as a mechanism for school wellness policy implementation in two large urban districts over a 4-year period. This exploratory study will use a mixed methods case study to investigate the following questions:

1. To what degree does a school-based obesity prevention model result in effective implementation of policies and programs that promote and provide access to healthier foods and more physical activity before, during and after school?

2. Are there particular components of the school-based obesity prevention model that hasten or hinder school-level implementation of policies and programs that promote and provide access to healthy foods and physical activity before, during, and after school?

3. Are there distinctive or common district- or school-level characteristics that hasten or hinder school-level implementation of policies and programs that promote and provide access to healthy foods and physical activity before, during, and after school?

This study investigates a school-based obesity prevention model developed by the Alliance for a Healthier Generation, a national organization focused on combating the childhood obesity epidemic across the United States, for which I currently serve as the Chief Executive Officer. All data used for this study were collected by an independent research firm, RMC Research Corporation. The model, henceforth called the Healthy

Schools Program, builds the capacity of schools to implement policies and programs that promote and provide access to healthy foods and physical activity in the school setting. The Healthy Schools Program employs a trained staff person to build the capacity of schools to institutionalize a six-step systems change process: (a) formation of a school wellness council, (b) completion of a healthy schools assessment, (c) local prioritization and action planning, (d) technical resource development and brokering, (e) implementation support, and (f) monitoring and evaluation of progress. Additionally, participating schools have access to national experts in school nutrition, physical activity, physical education, before- and after-school programs, school employee wellness, policy and systems change, health education, and competitive foods and beverages. These national experts provide tailored training to schools to implement evidence-based policies and programs that promote healthy eating and physical activity. Finally, a host of online tools and resources focused on the development of healthier school environments are made available to participating schools.

The Healthy Schools Program model also includes a best practices framework that operationalizes the promotion of and access to healthier foods and physical activity into specific policy and program actions in the school setting. The Healthy Schools Program best practices framework includes policy, systems, and environmental actions in the following domains: (a) school-level health policy, infrastructure, and systems development; (b) school nutrition programs; (c) competitive foods and beverages sold outside of the school meals programs; (d) physical activity opportunities before, during, and after school; (e) physical education programs; (f) health education programs; and

(g) school employee wellness programs. Schools that participate in the Healthy Schools

Program complete a 102 question inventory to assess their progress towards meeting the

elements of the best practice framework on an annual basis.

CHAPTER II

LITERATURE REVIEW

Over the past three decades, several national and state policy efforts have encouraged the implementation of systems reform efforts at the district and school levels—both in the realms of improving student achievement and improving the health environment of school campuses. This literature review discusses evidence regarding the impact of district- and school-level policy implementation efforts on student health behaviors and academic performance. It also examines evidence regarding the specific school- and district-level characteristics that hasten and hinder implementation of policy.

In addition, this literature review focuses on what studies reveal about the impact of policy implementation efforts on student outcomes and the characteristics within these efforts that are most often associated with positive student outcomes. Discussion is limited to studies that focused on school-based obesity-prevention or coordinated school health, as well as studies that have been part of the effective schools movement, New American Schools (NAS) initiative, and Comprehensive School Reform Program (CSRP) implementation.

This chapter concludes with a synthesis of results that draw conclusions on lessons learned about (a) policy implementation, (b) district and school characteristics that hasten or hinder implementation, (c) attributes of policy implementation models that yield positive impacts on intended student outcomes, and (d) the overall impact of policy implementation on intended student outcomes. In general, this synthesis focuses not on

the outcomes of individual policy implementation models, but rather explores the aggregate lessons learned about student outcomes and implementation. The scope of this synthesis is limited to studies on policy implementation models that have been developed by external organizations. Because policy implementation models differ in their specific components, it is not possible to establish a single overarching model. Therefore, models are multifaceted and systemic in nature. Operationally, this means that the policy implementation models studied must be designed to intervene in the domains of curriculum, school environment, and organization to support the intended reform.

Operationalizing the terms "implementation" and "student outcomes" is an important factor in maintaining the focus of this literature review. From a student performance perspective, different studies define measures differently; thus, a challenge exists with narrowly defining "student outcomes." Though it will not be possible to use a single definition, all studies included in this synthesis related to student outcomes are based on student test scores generated from tests given to all students under study. These outcomes are defined as "student performance" outcomes. From an obesity prevention perspective, "student outcomes" include an increase in healthy eating or physical activity behaviors and a decrease in body mass index (BMI). These outcomes are defined as "student behavior" outcomes. "Implementation" is defined as the extent to which each component of the policy implementation framework is actually executed.

Process

Key concepts that form the foundation of this literature review are "education reform" and "implementation," "coordinated school health programs," "school-based obesity prevention," and "systems reform." Studies and articles published between 1983 and 2012 were considered for inclusion. The search was conducted through several computerized search engines, including Academic Search Premier, Education Abstracts, Education Resources Information Center (ERIC), Medline, and PSYCHInfo. After initial review of the resulting articles, the parameters and definitions used in this synthesis were established. Next, I used a "spider web approach" for the secondary search by collecting seminal and essential articles cited in studies reviewed through the first search. These studies were used to deepen the review and synthesis. Lastly, I conducted a Google search to identify important national policy guidance on school-based wellness policy implementation issued by governmental entities and leading nonprofit organizations and foundations.

School-Based Obesity Prevention Programs: Impact and Implementation

Despite the nationwide requirement that all school districts receiving federal school breakfast and lunch funds must develop, implement, and evaluate school wellness policies, the data on the impact of these policy efforts suggest a poor return on implementation. Several studies found that, as a result of the district wellness policies, there were no significant changes to the school nutrition and physical activity environments in the schools (Belansky et al., 2010; Belansky et al., 2009; Moag-

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Stahlberg et al., 2008). Given that the Healthy, Hunger-Free Kids Act of 2010 requires most public school districts to continue their wellness efforts and that research suggests a lack of efficacy in the implementation of its preceding legislation, Child Nutrition and WIC Reauthorization Act of 2004, identifying strategies that will help facilitate actual health-promoting policy and program changes in schools, as well as positive student health behavior, is a timely and important goal.

One policy implementation strategy is the use of a school-based obesity prevention program designed to affect the policy, programs, and environment related to physical activity and healthy eating. There is an established, though limited, body of evidence on school-based obesity prevention programs (Katz et al., 2008; Kropski et al., 2008; Thomas, 2006). This section will explore (a) the impact of school-based obesity programs on student behavior and school policy, program, and environmental change related to healthy eating and physical activity; and (b) characteristics that hasten and hinder implementation of school-based obesity programs in order to determine how these programs can be used as a policy implementation vehicle.

Student Behavior Outcomes

Data on the impact of school-based obesity prevention programs on student behavior outcomes, such as physical activity and healthy eating, are limited to studies with relatively small sample sizes. Very few studies use a rigorous methodological model, such as a randomized control group (Kropski et al., 2008; Peterson & Fox, 2007; Thomas, 2006). However, the evidence base that does exist suggests that multicomponent

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school-based obesity prevention programs can be an effective vehicle for

(a) implementing school wellness policies, (b) positively influencing student eating and

physical activity behaviors, and (c) reducing or maintaining student body mass index

within the normal range (Katz et al., 2008; Kropski et al., 2008; Peterson & Fox, 2007;

Thomas, 2006).

Body Mass Index

Body mass index (BMI) is considered the most rigorous measurement of the

impact of school-based obesity prevention programs on students (Institute of Medicine,

2006). Generally, researchers measure either (a) an overall prevalence percentage of

students who are "overweight" or "obese" at baseline as compared to posttest, or (b) a

reduction in BMI in students who are "overweight" or "obese" at baseline as compared to

follow-up measures. According to Mei et al. (2002), school-aged youth are considered

"overweight" if their BMI is between the 85th and 94th percentiles. School-aged youth

are considered "obese" if their BMI is at the 95th percentile or higher.

Four studies have reported a statistically significant reduction in student BMI as

an outcome of a school-based obesity prevention program. In 1999, Gortmaker et al.

reported that its Planet Health intervention targeted at middle school students resulted in

both a reduced prevalence of obesity and a remission of obesity among girls. Though this

study was a randomized control trial, the sample was quite small, comprised of just five

intervention and five sample schools. The implementation of the El Paso Coordinated

Approach to Child Health (CATCH) program reported effectiveness in slowing the

increase of predicted prevalence of overweight and obesity among a predominantly

Hispanic student population over a 5-year period (Coleman et al., 2005). This study used

an untreated, matched control group to compare prevalence of overweight and obesity at

baseline and 5 years later. The treatment group showed a significantly lower increase in

the percentage of students who were overweight or obese at baseline as compared to

follow-up measures. Like the Planet Health study, the sample size for this study was

small. Third through fifth graders in four treatment schools and four control schools were

studied (Coleman et al., 2005).

In 2007, Foster et al. reported a 50% decrease in incidence of obesity, measured

by BMI, among fourth through sixth graders from a large urban school district. This

2-year intervention was conducted in 10 treatment schools and 10 matched control

schools. Though this research was larger in scope than the Planet Health and CATCH

studies, the participating schools were all from the same school district, limiting the

generalizability of results. Lastly, a quasi-experimental pilot study of The Healthier

Options for Public Schoolchildren/OrganWise Guys (HOPS/OWG) suggested a

statistically significant reduction in BMI among elementary-aged school children (Hollar

et al., 2010). This 2-year study was also quite small, including only four intervention

schools and one control school from the same large urban school district.

Student Physical Activity and Healthy Eating Behaviors

Several studies have suggested that school-based obesity prevention programs can

positively impact students' physical activity and healthy eating behaviors. In addition to

the BMI results reported in the last section, Gortmaker et al. (1999) reported that Planet Health resulted in increased fruit and vegetable consumption among girls. Coleman et al. (2005) found a significant increase in participation in physical activity among students participating in El Paso CATCH. Foster et al. (2007) also reported an increase in physical activity among students in the intervention group. Student physical activity and healthy eating behaviors were not measured in HOPS/OWG pilot schools.

In addition to the school-based obesity prevention programs with evidence of a positive effect on BMI, there are several others that have demonstrated their positive impact on students' healthy eating and physical activity behaviors. The largest study to report these outcomes was a randomized control study of the implementation of the CATCH program in schools across six states; 5,106 fourth through sixth graders comprised the study's sample (Luepker et al., 1996; Nader et al., 1999). Though this large-scale study did not find the BMI outcomes later reported by Coleman et al. (2005) in the El Paso CATCH study, it did find a significant increase in physical activity and a significant decrease in fat intake among students in intervention schools. A 3-year randomized control trial of a school-based obesity prevention program, Pathfinder, specifically developed for Native American students, ages 8 to 11, was also found to significantly increase physical activity and decrease fat intake among students in the treatment schools (Caballero et al., 2003).

Student Characteristics

The current body of evidence suggests that school-based obesity prevention programs are most effective with upper elementary and middle school-aged children (from approximately 10 to 14 years of age). Kropski et al. (2008) posit that the reasons for the increased effect among 10- to 14-year-olds is that they are in the beginning stages of making independent food and leisure time choices, are growing more concerned about their appearance, and are more heavily influenced by their peers, making it an opportune time to influence their behavior choices.

The trend in student outcomes suggests that school-based obesity prevention programs are more like to impact girls' BMI, eating and physical activity behaviors than boys' (Katz et al., 2008; Kropski et al., 2008; Peterson & Fox, 2007). A pooled Standard Mean Difference analysis at the 95th percentile Confidence Interval corroborated the hypothesis that these programs had a greater impact on girls than boys (Katz et al., 2008). Kropski et al. (2008) reported that a meta-analysis of the qualitative findings on effective school-based obesity programs suggested that girls were more responsive to the educational components of an intervention than boys. In contrast, boys attributed their behavior changes to environmental or structural shifts in the school environment (Kropski et al., 2008).

Because of the small sample sizes in school-based obesity prevention programs with demonstrated student outcomes, the amount of data available on specific student racial and ethnic populations is limited. The Planet Health study reported its biggest intervention effect to be on African-American girls (Gortmaker et al., 1999). Though the

broader CATCH randomized control trial did not show an effect on students' BMI (Luepker et al., 1996; Nader et al., 1999), the El Paso CATCH study, in which 93% of the student sample was Hispanic, did report a positive effect on student BMI (Coleman et al., 2005). Hollar et al. (2010) also point out that more than 50% of students tracked in the HOPS/OWP intervention were Hispanic. The Pathfinder study investigated a culturally specific intervention for Native American students and provided some evidence of positive impact on physical activity and healthy eating behaviors (Caballero et al., 2003). To date, the Pathfinder study is the only culturally specific school-based obesity prevention intervention represented in the peer-review literature.

According to the United States Department of Health and Human Services (2010), the highest prevalence of obesity in children is found among Native American, African-American, and Hispanic youth, respectively. This further compounds the challenges in interpreting the data available on BMI and behavior outcomes for demographic minority youth, as it stands to reason that if these youth began with higher BMIs, for example, the decrease would be comparatively easier to achieve than it would be for their Caucasian or Asian peers with BMIs closer to the "normal" range.

Implementation of School-Based Obesity Prevention Programs

Despite federal policy requirements and growing evidence of the efficacy of school-based obesity prevention programs as a school wellness policy implementation vehicle, very few school districts are implementing multifaceted school-based obesity prevention programs (Moag-Stahlberg et al., 2008). The most commonly cited barriers to

schools implementing school wellness policies include (a) competing demands related to standardized testing requirements, (b) lack of dedicated resources, (c) staff competency, and (d) no accountability mechanisms to ensure policy implementation (Belansky et al., 2009). These findings were corroborated by Hallfors and Goddette (2002) in a similar study about barriers to implementation of safe and drug-free schools policies. Given that the school wellness policy requirement has just been renewed by the United States Congress, and that there is growing evidence that school-based obesity prevention programs are an effective vehicle for implementation, it is important to identify characteristics for successful implementation and to develop new programs based on those characteristics (Peterson & Fox, 2007).

Theoretical Basis

School-based obesity prevention programs found to be effective in improving student outcomes are largely based on the social ecological approach; that is, they include a combination of policy and environmental shifts and programs targeted at behavior change (Katz et al., 2008). Diffusion of innovation theory was the theory most used when developing implementation and strategies for effective school-based obesity prevention programs (Franks et al., 2007). Social learning theory was generally the basis for all curricular or behavior change components of effective school-based obesity prevention programs (Thomas, 2006).

Model Components

There is clear consensus in the available body of evidence that multicomponent programs which address both physical activity and healthy eating through a combination of program, policy, and environmental actions are most effective in generating desired student outcomes (Katz et al., 2008; Kropski et al., 2008; Peterson & Fox, 2007; Thomas, 2006). In their recommendations for future school-based obesity prevention program development, Peterson and Fox (2007) outline the following key components: (a) address multiple, modifiable health behaviors; (b) create synergy between the school environment and health education messaging; (c) provide supportive messaging throughout the school day; and (d) establish strong linkages with external partners to leverage additional resources for school wellness policy implementation efforts.

Using Standard Deviation Mean analysis as a basis, Katz et al. (2008) have corroborated the recommendations of Peterson and Fox (2007) and suggest that additional components are predictive of impact on student outcomes: (a) classroom education, (b) policy change related to the nutritional environment, (c) student engagement, (d) afterschool programs that include a physical activity component, (e) physical education for at least 150 minutes per week, (f) teacher training, and (g) parent involvement. All of these components are well supported in the body of evidence, with the exception of parent involvement. Though recognizing the general role of parents' influence on their children's eating and physical activity habits, Baranowski et al. (2002), Kropski et al. (2008), Luepker et al. (1996), and Peterson and Fox (2007) conclude that the parent involvement components within school-based obesity prevention programs

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were not significantly linked to improved student outcomes. Thomas (2006) contends that the evidence related to parent involvement is inconclusive.

Several studies also acknowledge the importance of school wellness policy implementation models and, by extension, school-based obesity prevention programs being designed to complement school reform movements and common school improvement practices (Austin, Fung, Cohen-Bearak, Wardle, & Cheung, 2006; Franks et al., 2007; Pearlman, Dowling, Bayuk, Cullinen, & Thacher, 2005; Staten et al., 2005). The Planet Health program addressed the importance of integration of school wellness into broader school reform by creating opportunities for health education to be integrated into other subject areas rather than be taught as a stand-alone course (Wiecha et al., 2004). The School Health Index process, a school wellness policy and program implementation vehicle developed by the Centers for Disease Control and Prevention (2000), addressed the same issue by including typical school improvement processes— e.g., assessment, action planning, and implementation monitoring—into its design (Austin et al., 2006; Pearlman et al., 2005; Staten et al., 2005).

Implementation Mechanism

Several studies suggest that the use of an external facilitator in both school-based obesity programs and coordinated school health programs is significantly correlated to successful program, policy, and environmental change, as well as student outcomes (Baranowski et al., 2002; Katz et al., 2008; Kropski et al., 2008; Peterson & Fox, 2007; Thomas, 2006).

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Several qualitative studies investigating the characteristics of successful program implementation corroborate this assertion (Austin et al., 2006; Pearlman, et al., 2005; Staten et al., 2005). All of these studies sought to understand the characteristics of effective implementation of school wellness policy implementation. Using a continuous improvement process, the School Health Index, which includes a comprehensive assessment, action planning template, and best practices guide, Staten et al. (2005) compared the level of implementation of policies, programs, and environmental shifts that support healthy eating and physical activity in 13 elementary schools. Schools that maintained a close working relationship with their external facilitator over the entire 3-year study period implemented significantly more policy and program actions than schools that did not maintain close ties. A study conducted by Pearlman et al. (2005) in 102 Rhode Island elementary schools corroborated the findings of Staten et al. (2005).

In 2006, Austin et al. provided more texture to the reasons that external facilitators seem to be critical to generating outcomes. Austin et al. studied the School Health Index process in nine schools: Three were assigned an external facilitator, three chose a district-level staff person as a facilitator, and three conducted the process with a school-level staff facilitator. Like Staten et al. (2005) and Pearlman et al. (2005), Austin et al. (2006) reported that the schools with an external facilitator implemented significantly more policies and programs than the schools with a district- or school-level facilitator. Specifically, Austin et al. reported that schools with an external facilitator (a) stayed on track during their meetings, (b) sustained regular meetings over a 3-year

period, (c) were more likely to implement their action plan tasks, (d) took on more complex policy and systems change, and (e) reported a more collaborative process.

Dissemination Mechanisms

Franks et al. (2007) and Thomas (2006) reported that several of the effective school-based obesity prevention programs use diffusion of innovation theory as a framework for their dissemination strategies. Diffusion of innovation theory posits that adoption of a policy implementation effort is contingent on the following: (a) relative advantage over the status quo, (b) compatibility with the school context, (c) easily understood protocols, (d) allowance for noticeable short-term results, and (e) the ability to implement a program incrementally (Rogers, 2002).

Using meta-analysis of drug and alcohol prevention policy implementation as a basis, Rohrbach et al. (1996) articulated four practical stages of implementing a new policy: (a) planning and dissemination to encourage adoption, (b) adoption and commitment to initiating a program, (c) implementation, and (d) maintenance (p. 223).

These stages were used as the basis for dissemination of both the Planet Health and CATCH programs (Franks et al., 2007). Both developers engaged multiple school stakeholders, including principals, teachers, and cafeteria managers, in the planning stages of the implementation (Hoelscher et al., 2001; Wiecha et al., 2004). Both actively obtained the commitment of the participating school districts and school administrators. This step was cited as particularly important given that in general, public schools across the United States are lessening their focus on school wellness due to shrinking school

budgets and the demands of high-stakes testing (Franks et al., 2007). Implementation of both programs was marked by intensive and frequent training of key school personnel on all of the policy and program components (Franks, et al., 2007; Hoelscher et al., 2001; Wiecha et al., 2004). Baranowski et al. (2002) reported that staff training needed to strike the balance of being prescriptive enough to make the content and expectations easily executable, while also allowing for enough flexibility to tailor the program and policy components to the context of their school environment.

There is less available evidence on effective strategies for maintaining the momentum and changes made as a result of a policy innovation over time. In a qualitative study of the institutionalization of CATCH, Osganian, Parcel, and Stone (2003) reported that the key factors leading to institutionalization included ongoing administrative support, a school champion responsible for working through implementation issues, ongoing teacher training, and sustained investment of resources. It is important to acknowledge that, five years after program introduction, the institutionalization rate associated with schools engaged in the study conducted by Osganian et al. was less than 50%. Baranowski et al. (2002) suggest that maintenance of the curricular components is difficult because teachers by nature are constantly adapting their approaches in the classroom. Wiecha et al. (2004) added that maintenance is also made difficult due to high turnover levels of school administrators and other key school personnel. Several researchers (Baranowski et al., 2002; Osganian et al., 2003; Peterson & Fox, 2007; Thomas, 2006) recommend sustainability of policy implementation as a key area for additional research.

District and School Characteristics

Many studies have examined school and district characteristics that hasten or limit the success of school wellness policy implementation. Generally, the barriers and facilitators of school wellness policy implementation can be categorized as considerations of (a) time and resources, (b) staff training and expertise, (c) commitment of leadership, and (d) duration (Franks et al., 2007; Kelder et al., 2003; Pearlman et al., 2005; Wiecha et al., 2004).

Time and Resources

Researchers uniformly acknowledge high stakes testing and shrinking budgets as the primary reasons limited time and resources have been dedicated to the implementation of school-based prevention programs. An analysis of 253 school district wellness policies conducted by Longley and Sneed (2009) found that only 2% of school districts included the dedication of funding in their 2006 federally required policies. A national survey of 363 school district food service directors indicated that 63% of respondents believed that inadequate resources were available to implement the federally required school wellness policy provisions (School Nutrition Association, 2009).

Time and resources have also been demonstrated as an implementation barrier in application. Franks et al. (2007) and Wiecha et al. (2004) both cited teacher time and lack of materials due to budget constraints as challenges to the implementation of Planet Health. Osganian et al. (2003) and Kelder et al. (2003) corroborated these barriers as a

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challenge for implementing CATCH. The qualitative studies on the implementation of the School Health Index shed some additional light on the time and resource constraint challenges. Staten et al. (2005) suggested that getting key staff to participate in meetings after hours posed a barrier, but that limited budgets precluded the assignment of substitute teachers during the school day. Bauer, Patel, Prokop, and Austin (2006) cited the engagement of external partners as a means of allaying some of the costs associated with implementing school wellness policies. This approach was also suggested by Peterson and Fox in their 2007 recommendations.

Staff Training and Expertise

The importance of intensive and ongoing training and technical assistance to school wellness policy implementation is well documented in the literature. As mentioned earlier in this literature review, training and technical assistance is ideally provided by an external facilitator who works with the school district for the duration of the policy implementation effort (Baranowski et al., 2002; Katz et al., 2008; Kropski et al., 2008; Peterson & Fox, 2007; Thomas, 2006). Several researchers cited a perceived or real lack of expertise among the school staff in health and wellness as the reason that training was such an important aspect to successful implementation (Bauer et al., 2006; Franks et al., 2007; Staten et al., 2005). Another commonly cited reason for the importance of ongoing training and technical assistance was constant staff turnover and the consequent need for "onboarding" new staff into the policy implementation effort (Franks et al., 2007; Osganian et al., 2003; Wiecha et al., 2004). Secondarily, Pearlman et al. (2005) and Bauer

et al. (2006) reported that the ongoing nature of training served as a reminder that the policy and program changes were still a district and school priority.

Leadership Commitment

Several studies discuss the importance of the commitment of the district and school administrators in successful school wellness policy implementation (Bauer et al., 2006; Franks et al., 2007; Kelder et al., 2003; Pearlman et al., 2005; Staten et al., 2005). Most of these studies suggest that district and school administrators do not have to be actively involved in all aspects of school wellness policy implementation; but instead need to be vocally supportive and show willingness to allocate time and resources to support implementation (Bauer et al.; Franks et al.; Osganian et al., 2003). Kelder et al. (2003) elaborated on the distinction by stating that the key contact for school wellness policy implementation within the school must be given direct access to district and school administrators in decision-making roles in order to successfully advance the effort. Contrary to most researchers' assertions, Pearlman et al. (2005) found that direct principal involvement in the School Health Index process in Rhode Island elementary schools was essential to higher levels of policy and program implementation. One possible explanation for the difference in this study is its limitation to the elementary school setting.

Duration

Policy and environmental change in schools is a slow and laborious process. The average duration of school wellness policy implementation through the use of a school-based obesity prevention program is 3 to 5 years (Caballero et al., 2003; Kropski et al., 2008; Luepker et al., 1996). Researchers suggested that the duration is particularly predictive of student behavior and BMI outcomes because the policy and environmental changes must precede student behavior changes. Qualitative studies on implementation suggest that opportunities for school staff to recognize and celebrate incremental successes are an important aspect of maintaining momentum and commitment to the policy reform (Bauer et al., 2006; Pearlman et al., 2005; Wiecha et al., 2004).

Summary of Findings

School and district leaders, as well as model developers, would be well advised to apply the consistent findings in the literature to the implementation of current and future school wellness efforts. The often-cited barrier of competing policy demands hindering school wellness policy implementation is ever present and apparent in the literature. Several researchers (Austin et al., 2006; Franks et al., 2007; Pearlman, et al., 2005; Staten et al., 2005) suggest that one of the keys to successful school wellness policy implementation is to use language that resonates with school administrators to articulate the purpose and value of school wellness. To bridge school wellness into broader school reform, Kolbe (2002) proposed that modern day school health programs be designed to not only address health behavior outcomes, but also academic and social outcomes.

Studies on school wellness policy implementation and school-based obesity

prevention programs also consistently point to the efficacy of using an external facilitator

to guide schools through a multifaceted and systemic approach to school wellness policy

implementation (Baranowski et al., 2002; Katz et al., 2008; Kropski et al., 2008; Peterson

& Fox, 2007; Thomas, 2006). This consistent finding, in combination with the need to tie

school wellness efforts to broader school reform efforts, begs the need to look to findings

in the education reform literature to inform future development of school wellness policy

implementation models.

Systemic School Reform Efforts: Impact and Implementation

Though the focus of this study will be on the implementation of school wellness

policies, it is important to glean lessons learned from system-wide policy implementation

efforts in student performance as well as in school wellness (Stokol, 1996). Although the

content of policy implementation is different in these two arenas, the dynamics between

individual, systems and environmental change in a school or district setting remain the

same. Thus, the following review follows a pattern similar to that used to review the

school wellness policy implementation literature. The review explores findings on (a) the

impact of school reform on student performance, (b) the conditions most associated with

student performance gains, and (c) implementation characteristics that predicted for

success.

Impact

Though there are no population-based studies to determine the large-scale effects of policy implementation on student academic performance outcomes, data from several large studies offer mixed results. In an analysis of summary findings from the first 3 years of the scale up of the New American Schools (NAS) initiative, Berends (2004) reported that significant student achievement gains in reading were only realized in 47% of the participating schools and that significant student achievement gains in mathematics were only realized in 50% of the participating schools. Contrarily, a longitudinal study of the implementation of two reform models in 11 elementary schools over 4 years showed no significant impact on student achievement (Ross et al., 2004); overall, though, some modest differences existed on a school-by-school basis.

A meta-analysis of 29 different studies on the most common school reform models used as a part of CSRP found that collectively, the positive effects on achievement were strong and significant in comparison to earlier school reform efforts and in comparison to demographically similar schools (Borman, Hewes, Overman, & Brown, 2002). Borman et al. also found that the effects of the CSRP on student achievement after the 5th year of implementation increased significantly, suggesting that adequate time is necessary to realize the true effects of school reform.

Student Characteristics

Given the variance in results, it is useful to determine whether a relationship exists between student outcomes and student characteristics in systemic reform efforts.

Ross et al. (2004) underscored this when they suggested that many reform efforts were shown to be effective under certain conditions and for certain student populations. Several studies have investigated the varying effects on student grade level and demographic minority students.

Grade Level

One type of variance was based on student grade levels. In a longitudinal study of all school reform efforts in the NAS initiative, Berends (2004) reported that student achievement gains were significantly higher in elementary schools than they were in middle or high schools. Similarly, in a retrospective case study of three urban school districts, Snipes and Casserly (2004) reported that elementary student gains significantly outpaced those of the rest of the state, but that there were no significant differences at the middle and high school levels. In a pretest, posttest study of the implementation of a reform model in 10 elementary schools in an urban district serving predominantly African American students, reform was associated with significant gains in reading and writing scores among fourth through sixth graders. However, the same reform model did not yield significant gains for first through third graders (Supovitz & May, 2004).

Student Demographics

A key goal of many federal education programs, including the CSRP, is to close the achievement gap between high- and low-poverty students and between demographic

minority students and Caucasian students. Consequently, many school reform studies have measured the effects of reform on closing these achievement gaps.

Berends (2004) reported that NAS schools achieved significant student gains in schools that served predominantly high-poverty students or predominantly demographic minority students, but did not achieve significant student performance gains in schools that served student populations that were both predominantly high-poverty and demographic minorities. In their meta-analysis of the achievement effects of 29 CSRP models, Borman et al. (2002) reported a differing outcome. They found no significant differences in student outcomes between high- and low-poverty schools that participated in CSRP.

A 4-year mixed-methods study of 13 culturally and linguistically diverse elementary schools that implemented six different reform models added a qualitative perspective to this issue (Datnow, Borman, Stringfield, Overman, & Castellano, 2003). Datnow et al. suggested that though some of the schools showed significant reductions of cultural achievement gaps, the differences were reform-model specific and not across the board. In general, models that were more prescriptive than process oriented were more effective within schools that served predominantly minority populations. Snipes and Casserly (2004) also reported a significant narrowing of the achievement gap among cultural minority students in four urban districts, but again, these cases were isolated and, as Datnow et al. (2003) reported, these findings did not constitute a trend.

Conditions

In addition to the examination of relationships between student characteristics, student achievement and reform, it is also important to explore other characteristics related to reform implementation and improved student achievement. This imperative is supported by many researchers. In 2004, Ross et al. concluded that gains in student achievement were largely contingent on school-based characteristics. Other researchers suggested that "differences in the effectiveness of CSRP are largely due to unmeasured program-specific and school-specific differences in implementation" (Borman et al., 2002, p. 36).

Time

As reported earlier, Borman et al. (2002) also found that the effects of CSRP on student performance after the 5th year of implementation increased significantly. Though some schools might see positive results in a shorter time, 5 years is the threshold for impacting student outcomes in a critical mass of schools. There are two plausible explanations for the importance of time. One explanation is that it takes a while for school personnel to become comfortable with new strategies introduced in policy implementation; thus, it takes time for students to reap the benefits. An alternate explanation is that sustainability of implementation is a central determinant of the impact of a policy. These explanations are not mutually exclusive, but they do require different strategies to fully capitalize on the findings.

District Characteristics

Several researchers have explored relationships between district characteristics and improved student performance in districts implementing policy initiatives. These studies, both quantitative and qualitative, have yielded some consistent themes. In a retrospective case study of four large urban school districts that had been successful improving student performance through policy implementation efforts, Snipes and Casserly (2004) summarized both organizational and instructional conditions associated with increased student performance. These conditions included (a) political and organizational stability at the district level, (b) a coherent and district-wide strategy for education reform, and (c) commitment and focus on addressing both organizational and instructional barriers to improvement.

Specific district-level strategies for instructional reform that yielded gains in student achievement included (a) clear achievement benchmarks and curriculum standards; (b) a coherent strategy and district-adopted curricula and instructional approaches; (c) a district-wide approach to professional development; (d) increased resources, such as professional development, high-quality teachers, and highly motivated administrators in the lowest performing schools; and (e) data-driven decision-making (Snipes & Casserly, 2004). The findings of the NAS initiative were consistent with those of Snipes and Casserly (Berends, 2004).

School Characteristics

Though the relationships between school characteristics and the impact of school reform on student performance have been studied extensively, the body of evidence does not provide a consistent message about these relationships.

In a longitudinal study of 11 elementary schools in one urban district, Ross et al. (2004) found that a favorable school climate, high teacher support, and strong program implementation were predictive of greater success in raising student performance. In a larger study of 130 districts implementing school reform, Berends (2004) suggested that strong principal leadership, as reported by the teachers, was positively associated with increased student performance. Other studies suggested that organizational characteristics at the school level were not in and of themselves associated with student performance gains (Snipes & Casserly, 2004; Supovitz & May, 2004).

One school factor with a seeming relationship to student performance is the role of the teacher. In a longitudinal case-control study of 37 high-poverty elementary schools, researchers found that highly experienced teachers (i.e., those who had taught at the same school for 5-6 years) were more associated with increased student achievement (Ross, Stringfield, Sanders, & Wright, 2003) than teachers who had taught at the study school for only one year. However, a subsequent case-control, mixed-methods study involving 114 high-poverty school districts located in urban areas did not corroborate this finding (Supovitz & May, 2004).

Some studies have investigated the association between teacher effectiveness and student performance outcomes. In their case-control study, Supovitz and May (2004)

found that higher levels of classroom-level implementation among teachers of a particular

intervention were directly related to an increase of one third of a standard deviation point

on student test scores among fourth through sixth graders. They also found a significant

relationship between teachers' reported sense of preparedness to implement new

strategies in the classroom and reading gains among fourth through sixth graders.

Contrarily, a mixed-methods study of 130 schools participating in the NAS initiative

found no association between (a) teacher-reported collaboration, quality of professional

development, and the use of reform-driven instructional practices; and (b) gains in

student performance (Berends, 2000). Because Supovitz and May (2004) did not delve

into specific implementation strategies, it is difficult to explain the differences between

these two findings. However, these differences do suggest that fidelity of implementation,

regardless of the strategies used to achieve that implementation, is a strong indicator of

positive impact on student performance.

Policy Implementation Model Characteristics

In addition to school and district conditions, it is also important to reflect on the

effects of external policy implementation models on student outcomes. When doing so,

researchers have examined both the overall effects and the disaggregated effects of

specific elements of policy implementation models.

In their longitudinal study, Ross et al. (2004) stated that incomplete

implementation hindered student performance. They also parsed out specific components

for which implementation mattered more in raising student performance. Specifically,

they found that inconsistent teacher participation in professional development and waning

district investment over time have significant negative effects on student performance. As

in the study conducted by Ross et al., the meta-analysis on 29 different CSRP models

conducted by Borman et al. (2002) found that the quality and level of implementation, as

a whole, were strongly predictive of student performance.

Though researchers found no specific policy implementation model attributes that

were positively associated with student achievement, Borman et al. (2002) did find that

models which required parents and community members to participate in the governance

or implementation of reform were negatively associated with student performance. Given

that parent and community involvement cannot practically be fully integrated into the

school day, it could be considered a "competing initiative." Thus, this finding might be

related to the suggestion that multiple policy implementation efforts adversely impact

student performance (Berends, 2004; Greene & Lee, 2006).

Because quality of implementation has been found to be such a consistent

predictor for hastening student performance outcomes (Borman et al., 2002), it is also

important to examine the reform model, district, and school characteristics that hasten

quality implementation, setting the stage for improvement in student performance gains.

<div align="center">Implementation</div>

Several studies have closely examined the district, school and policy model

implementation characteristics that facilitate or hinder implementation. In 2002,

Desimone wrote, "In the study of organizational change and policy effectiveness, it has

long been realized that, given a promising practice, the method, type, and pace of

implementation largely determine outcomes" (p. 436). Though the characteristics across

the district, school and policy implementation models are not mutually exclusive, it is

important to review each separately to draw plausible conclusions.

Model Characteristics

Though some specific policy implementation models that focused on student

performance had more successful implementation rates than others, there were no

significant differences when controlling for other contextual issues (Desimone, 2002).

However, the way in which the model was introduced and facilitated by external

developers in school and district settings was associated with levels and quality of

implementation.

Studies suggest that the first step to effective implementation is related to the way

external reform developers "market" their models to district and school personnel. The

natural marketing inclination might be to tout a policy implementation model as "new"

and different," or as "breaking the mold of school designs" (Berends, 2000), as the NAS

initiative did, but this approach has been shown to have had adverse effects on the

acceptance and implementation of systems change among educators and administrators.

A decade of multiple research studies on the NAS initiative suggested that systems

change models described as "breaking the mold" were not marketable and hindered

implementation (Berends, Bodilly, & Kirby, 2002). Similarly, Spillane's (2000)

retrospective qualitative study of nine districts that implemented math reform concluded

that "policies that are considered to be too novel fail to gain the foothold in local school systems necessary to further understanding and incorporation into everyday practice" (p. 171).

One consistent finding across studies is the importance of effectively communicating the systemic nature of the policy implementation model and the components of the model at the onset of implementation. This finding was consistent through all years of the policy implementation process. For instance, in a 4-year study of teachers' perceptions and attitudes towards state-driven policy changes, Conley and Goldman (2000) suggested that "originators of reform" must provide clear and consistent messages about the purposes and parameters of the policy changes. Like Spillane (2000), they also contended that messages about the components of the policy must be delivered to teachers and others in ways that are very tangible and directly related to implementation.

Additional studies suggested that once policy implementation models gain initial acceptance in schools and districts, external providers need to provide strong technical assistance and training (Berends, 2000, 2004). The most cited important technical assistance element for quality implementation has been adaptability of the model to the specific school context (Fuhrman, Clune, & Elmore, 1991). Datnow et al. (2003) described that element as facilitating the "co-construction" of policy implementation— i.e., when the external support provider and local school personnel mutually adapt the policy to fit the local district and school context. In a longitudinal, multimethod study of elementary schools that used external policy implementation models, MacIver (2004)

tested the co-construction concept and found that it was associated with higher levels and sustained implementation.

District-Level Characteristics

School districts have been a central focus of policy implementation research. In 2004, Snipes and Casserly (2004) effectively summarized the extant findings when they stated, "education reforms . . . were preceded and accompanied by substantial efforts on the part of district leadership to build and maintain a context that would support effective reform" (p. 136).

The NAS initiative conducted a series of case studies on implementation for their school reform models across district sites. Several common themes emerged around higher levels of early implementation. First, Datnow et al. (2003) found that higher levels of implementation were associated with district involvement in disseminating information about different policy implementation models and facilitating school-level decision-making on model selection.

Organizationally, higher implementation levels were achieved when districts (a) were supportive of the policy; (b) were perceived to have stable leadership; (c) identified policy implementation as a district priority; (d) dedicated resources to the policy implementation effort; (e) allowed for significant school-level autonomy; and (f) were known for trusting relationships between school, district and union staff (Berends et al., 2002).

The NAS findings were generally supported and expanded upon by another case study conducted by MacIver (2004) on the district role in implementing two school reform models in 11 elementary schools as a part of the CSRP. After conducting a series of interviews over 4 years, MacIver also suggested that the districts play a central role in policy implementation success. In addition to supporting the organizational characteristics identified by Berends et al. (2002), MacIver identified key elements of district-level infrastructure associated with initial and sustained implementation. These elements include (a) ongoing professional development; (b) teacher coaching for instructional reforms; (c) assistance on school-level systems and organizations development, such as the development of small learning communities, budget information and planning assistance, and minimization of staffing transfers; and (d) data-based decision-making.

As reported earlier in this review, the amount of time a policy is in place has a significant impact on gains in student performance, with the strongest gains after 5 years of policy implementation (Borman et al., 2002). The importance of the district role in sustaining reform policy implementation has emerged as a theme in the literature. Hindrances to sustainability of policy in schools included lack of district support for the efforts (Desimone, 2002; Berends, 2004), waning of technical assistance and training over time (Greene & Lee, 2006), and lack of prior planning regarding how to absorb the costs associated with policy implementation (Epstein, 2005). In sum, these obstacles point to a lack of coherence in policy implementation efforts (Berends et al., 2002).

Though at first glance, coherence between district- and school-level efforts might appear easily achievable, researchers have reported several competing demands that have interrupted a consistent message and approach over time. Among the 550 schools involved in the NAS initiative, lack of district funding was the most cited reason for discontinuing policy implementation (Berends et al., 2002). All too often, case studies on these schools revealed that the reason for funding cuts was diversion of funds to a new and consequently competing policy initiative (Berends, 2004). Berends reported that competing policy priorities were negatively associated with implementation because "the numerous reforms overloaded teachers and reduced their capacity to implement . . ." (p. 136).

Waning implementation over time was also attributed to decreased professional development and capacity-building, another hindrance of sustained policy implementation cited in many studies (Berends et al., 2002; Greene & Lee, 2006; Snipes & Casserly, 2004). In their longitudinal study of policy implementation, Ross et al. (2004) also discussed the lack of ongoing professional development as a barrier to sustaining policy and program changes. In addition, they found significant differences in implementation levels in the later years between schools that still participated in related professional development and those that discontinued professional development. In a case study that included a series of interviews, observations and historical document review at one elementary school implementing student performance reform, Greene and Lee (2006) also discussed the importance of capacity-building activities provided by the district as a key factor for sustaining policy initiatives over time.

School Characteristics

Like district characteristics, school characteristics and their relationship with

school-level implementation cannot be fully understood without considering the full

continuum of the policy implementation process—from model selection to sustainability.

Since several studies suggest a link between teacher practices and student performance

gains, researchers have paid special attention to factors that facilitate higher levels of

reform implementation among teachers.

Overall, studies suggest that an appropriate match between the policy

implementation model and school context is very important to implementation (Berends,

2004; Berends et al., 2002; Datnow et al., 2003; Desimone, 2002). This was particularly

true for schools that served predominantly racial and ethnic minority student populations

(Datnow et al., 2003). Datnow et al. argued that establishing the match is related to the

district role in facilitating the selection process. In contrast, Desimone (2002) suggested

that the responsibility rests with the principal and that the principal must engage his or her

entire faculty in the decision-making process.

Other authors reported on the school-level characteristics associated with initial

and sustained implementation. Among schools involved in the NAS initiative, adequate

school-level resources (instructional materials, professional development, teacher

collaboration and planning time, and funding), as reported by the teachers, were

positively related to implementation (Berends, 2000). In their longitudinal study of the

implementation of CSRP-funded elementary school reform, Ross et al. (2004) found that

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common hindrances to full implementation included resource constraints, teachers' lack of involvement in professional development, and an inadequate sense of school ownership of reform. When Ross et al. (2004) reflected on long-term implementation, they reported that when the concerted effort to aid implementation was interrupted too soon, not allowing for full implementation, it negatively impacted the sustainability of reform.

Both Berends (2000) and Supovitz and May (2004) reported that in-school variance of implementation was greater than between-school variance. Berends (2000) reported a 75% to 90% implementation variance within a school, and Supovitz and May (2004) found that 80% to 90% of the variance in implementation was within a school. These findings led both researchers to conclude that policy reforms were not gaining school-wide traction based on varying levels of implementation. As a result, Supovitz and May claimed that teacher-level factors are more central to implementation quality than are school-level factors. They went on to suggest that in the schools they studied, teachers' implementation of reform was variable in both pace and degree. Ross et al. (2003) explained this phenomenon in their implementation study of elementary schools. They found that highly experienced teachers were more likely to fully implement instructional reforms and to sustain these practices than less experienced teachers. Though this finding was somewhat related to the level of professional development offered overall, it held true even when controlling for professional development.

Teachers' attitudes and perceptions were also linked to levels of implementation. In schools involved in the NAS initiative, Berends (2004) found that teachers' views of

consistency and effectiveness of district support were positively associated with implementation. This was particularly true when examining the sustainability of implementation.

Summary of Findings

Overall, studies suggest that increased student outcomes can be attributed to policy implementation models under certain school and district conditions. Several studies have suggested that policy reform is more effective in improving student outcomes at the elementary level than the secondary level (Berends et al., 2002; Snipes & Casserly, 2004; Supovitz & May, 2004). Though this finding is notable, it is hard to determine if policy reforms are more effective with younger students because of the age of the students or because of the differing policy implementation dynamics between elementary and secondary schools. The root of this difference merits further study.

Collectively, data on the impact of school policy implementation on reducing student health or educational disparities are inconclusive. As detailed in this review, there are some policy implementation models that appear to be more effective than others in closing gaps between high- and low-poverty students and between Caucasian students and other racial and ethnic groups (Berends et al., 2002; Datnow et al., 2003; Snipes & Casserly, 2004). However, the findings were not particularly strong and appeared to be contingent on model-specific qualities, with process-oriented models showing more promise in schools serving student populations at risk for low achievement (Datnow et al., 2003).

In addition to examining variance of student demographics on the impact of school reform on student achievement, many researchers explored the relationships between school and district characteristics and improved student outcomes in schools implementing policy reform. According to the broad body of evidence, school-level organizational characteristics accounted for very few significant changes in student outcomes (Berends, 2004; Supovitz & May, 2004). However, several studies have suggested that teachers are integral to the relationship between policy reform and student outcomes (Berends, 2000; Berends, 2004; Supovitz & May, 2004). The explanation of why and under what conditions has also been explored in many studies, but it is less clear.

In contrast, there is strong consensus in the literature that suggests an inextricable link between the degree and quality of implementation of a reform model and its impact on student performance. These findings have transcended specific reform models and settings (Desimone, 2002). The breadth of data to support the relationship between policy implementation and student performance led Epstein (2005) to state, "If a school improvement model is not well implemented, there is no justification for analyzing its effects on achievement" (p. 164).

School Wellness Policy and Education Reform Implementation Themes

There are both convergent and divergent themes on policy implementation in the available literature on school reform and school wellness policy implementation. Both are

instructive for delineating ways in which lessons learned to date can be applied to future policy implementation model development.

<center>Convergent Themes</center>

The body of evidence from the literature on school wellness policy implementation and school reform points to many common themes that focus on effective practices. Both education reform and the reform of school wellness policy implementation point to a clear link between the quality and degree of reform implementation and student outcomes. The review of both bodies of research reveals the importance of a multicomponent approach, with an emphasis on "systemic" in school reform and "multicomponent" in school wellness policy implementation. Though parsed out for study, many of the findings suggest a deep interdependence between support for a policy implementation model and both district and school characteristics. Though beyond the scope of this synthesis, there is also evidence of the importance of alignment of state and national policy for optimal implementation of school-level policy reform focused on student academic performance or student health behaviors (Berends et al., 2002; Desimone, 2002; Moag-Stahlberg et al., 2008).

Interestingly, the body of evidence for both school reform and school wellness policy implementation does not support a correlation between parent and family engagement and student outcomes. In fact, Borman et al. (2002) reported a negative association between student academic performance and parent and family engagement. On the other hand, findings across the board suggest the importance of a strong role

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played by teachers and other school staff in the success or failure of policy implementation, both in education reform and school wellness policy implementation, and these findings warrant consideration in future endeavors (Bauer et al., 2006; Franks et al., 2007; Staten et al., 2005; Supovitz & May, 2004). Teachers' attitudes and beliefs and ensuring that teachers are properly prepared to implement reform strategies in the classroom and beyond are paramount to success (Supovitz & May, 2004).

To improve the disposition of teachers toward reform, Conley and Goldman (2000) suggested that teachers not only need to be trained in all aspects of a new policy, but they also need to have time to discuss the broader implications of policy. To instill a sense of ownership around policy reform, these discussions must be clear about policy reform specifics from the onset and include them in decision-making related to policy reform (Desimone, 2002). Additionally, teachers must have confidence that their districts are fully supportive of the policy reform, which can be evidenced by coherent and consistent messages and focus of efforts on the part of district and school leadership (Berends, 2004; Kelder et al., 2003).

The body of evidence suggests that policy implementation model developers for both education reform and school wellness must devise approaches that are both concrete and tangible, as well as adaptable to many settings (Datnow et al., 2003; Franks et al., 2007; Ross et al., 2004; Spillane, 2000). The juxtaposition of these themes offers model developers a unique challenge in balancing these needs. To rise to the challenge, Spillane (2000) suggested that developers design their models in ways that break down complex systems issues and clearly specify the roles of the district and school personnel. At the

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same time, to successfully implement policy reform, external facilitators must develop an understanding of the school and district contexts in which they are working (Austin et al., 2006; Berends, 2004; Pearlman, et al., 2005; Staten et al., 2005). To that end, co-construction of reform at the school level has been found to be effective in adapting an external model to a local school context (MacIver, 2004; Stokol, 1996).

The challenge of sustainability of policy reform is a pervasive theme in both the education reform and school wellness policy implementation literature (Baranowski et al., 2002; Berends et al., 2002; Borman et al., 2002; Desimone, 2002; Osganian et al., 2003; Peterson & Fox, 2007; Ross et al., 2004; Thomas, 2006). Several researchers have offered explanations. Spillane (2000) contended that reform implementation failure is due to district leaders' lack of understanding of the full continuum of policy implementation, which leads to a tendency to implement the bits and pieces of the specific policy implementation model and to simultaneously introduce bits and pieces of other competing efforts, diluting the benefits of all efforts. Desimone (2002) and Osganian et al. (2003) cited the turnover of district and school leaders and policymakers as a hindrance to full implementation, as new leaders tended to steer the district in another direction because they felt no ownership over prior policy reform efforts. Epstein (2005) and Rohrbach et al. (1996) argued that the lack of appropriate sustainability planning is to blame for much of the incoherence of policy implementation, resulting in a reduction of dedicated funds and the depletion of related professional development over time. Research on sustainability also suggests that the district must also establish policy and

fiscal support to ensure sustainability (Bauer et al., 2006; Berends et al., 2002; Desimone, 2002; Epstein, 2005).

Divergent Themes

A myriad of evidence points to a direct relationship between district-level support and school-level implementation (Datnow et al., 2003; MacIver, 2004; Ross et al., 2004; Supovitz & May, 2004). Longitudinal studies of both the NAS and CSRP initiatives have suggested the importance of district commitment and the development and implementation of support systems in school-level policy reform over time. Specifically, Desimone (2002) found that it is important for districts to send consistent messages about their support for systems change through policies, funding priorities, and curriculum guidance that support implementation. This is not supported in the school wellness policy implementation literature, though there is consistent evidence about the importance of school administrator support (Bauer et al., 2006; Franks et al., 2007; Kelder et al., 2003; Pearlman et al., 2005; Staten et al., 2005). Possible explanations for this difference are that (a) almost all school districts are required to maintain a school district wellness policy by virtue of eligibility requirements for federal school meals funding; (b) wellness policies are generally overseen by district foods service directors who are not perceived as authority figures by most school staff; and (c) the school wellness policy implementation research base is not deep enough to extract this nuance.

Findings from school reform studies investigating the role of schools in facilitating or hindering implementation of school reform are not conclusive. Some

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(Berends, 2004; Supovitz & May, 2004) found that teachers are the most influential school-level factors in implementation, and others (Ross et al., 2004; Greene & Lee, 2006) suggested that all significant school characteristics—e.g., funding levels, accountability and professional development—were actually byproducts of the policy implementation model or district characteristics. Contrarily, there is an extensive body of evidence on the district and school characteristics that predict successful implementation of school wellness policies. Researchers routinely reported that the following characteristics were vital to successful implementation: (a) deep school staff engagement in the planning and implementation of program and policy actions; (b) extensive and ongoing training and technical assistance; (c) a champion within the school to maintain momentum; and (c) a supportive school administrator (Franks et al., 2007; Kelder et al., 2003; Pearlman et al., 2005; Wiecha et al., 2004).

Proposed Study

This study endeavors to contribute to a deeper understanding of effective strategies for improving the implementation of school wellness policies. To that end, this study uses a mixed methods case study approach to explore the results of a technical assistance model led by an external facilitator aimed at implementing a multifaceted school-based obesity prevention program as a vehicle for school wellness policy implementation in two large urban districts. This exploratory case study employs both qualitative and quantitative methods to investigate the following questions:

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1. Is the school-based obesity prevention model effective in increasing the implementation of policies and programs that promote and provide access to healthier foods and more physical activity before, during and after school?

2. Are there particular components of the school-based obesity prevention model that hasten or hinder school-level implementation of policies and programs that promote and provide access to healthy foods and physical activity before, during, and after school?

3. Are there distinctive or common district- or school-level characteristics that hasten or hinder school-level implementation of policies and programs that promote and provide access to healthy foods and physical activity before, during, and after school?

The model, henceforth called the Healthy Schools Program, is based on the available evidence on effective school-based obesity prevention programs and successful implementation of school reform and school wellness policies. The model was developed by the Alliance for a Healthier Generation, a national organization focused on combating the childhood obesity epidemic across the United States.

As noted earlier in this review, the literature suggests that the most effective school-based prevention policy implementation efforts have been rooted in a social ecological approach (Stokol, 1996). The Healthy Schools Program model is based on the set of theoretical principles that comprise the social ecological approach. The intention of this approach is to positively impact the dynamic interactions between individual, systems and environmental change necessary to create a school environment in which physical activity and healthy eating opportunities are available and promoted before, during and after school.

The Healthy Schools Program technical assistance model is comprised of four key components: (a) nine highly structured, school-level train-the-trainer sessions conducted by a trained external facilitator over 4 years; (b) customized technical assistance and training on specific issues, such as physical education or school nutrition, provided by content experts; (c) an online inventory, planning, and resource database that automates the Healthy Schools Program's six-step process and offers tools and success stories aligned with the Healthy Schools Program best practices framework; and (d) eligibility for implementation grants, ranging from $2,000 to $5,000, to support early policy and program implementation efforts.

Within the social ecological approach, there is room for the application of other theories in the design, implementation, and evaluation of school-based prevention programs (Stokol, 1996). Thus, the Healthy Schools Program also employs the two most prevalent theories used within the social ecological approach in effective school-based prevention programs: diffusion of innovation theory (Franks et al., 2007) and social-cognitive theory (Thomas, 2006). Diffusion of innovation theories are inherent within the Healthy Schools Program's six-step systems change process and the district and school recruitment process, both of which are described further in the study procedures. The multiple facets contained within the Healthy Schools Program best practices framework is based on the assertion within social-cognitive theory that change is influenced by social, environmental and individual factors (Bandura, 1986).

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CHAPTER III

METHODOLOGY

Overview

This exploratory case study will explore the results of a technical assistance model led by an external facilitator aimed at implementing a multifaceted school-based obesity prevention program, the Healthy Schools Program. As mentioned in Chapter I, this exploratory case study will use qualitative and quantitative methods to investigate the following questions:

1. Is the Healthy Schools Program effective in increasing the implementation of policies and programs that promote and provide access to healthier foods and more physical activity before, during and after school?

2. Are there particular components of the Healthy Schools Program model that hasten or hinder school-level implementation of policies and programs that promote and provide access to healthy foods and physical activity before, during, and after school?

3. Are there distinctive or common school-level characteristics that hasten or hinder school-level implementation of policies and programs that promote and provide access to healthy foods and physical activity before, during, and after school?

Research Design

I have selected a mixed methods case study approach for this study. Specifically, this case study will explore the implementation of the Healthy Schools Program in two large urban school districts and a national cohort of schools using multiple units of analysis. The two school districts and the national cohort schools began implementation of the same program at different times, making the each case a direct replication of the first case (Yin, 2009). Multiple units of analysis, including policy and systems changes, implementation tactics, and school and district characteristics, were explored within each case. This approach is important to assess the contextual factors found to be inherent in previous school policy implementation studies. The ability to compare and contrast the actual intervention outcomes, as well as facilitators and barriers to implementation, in two urban school settings allowed for cross-case analysis in this study (Yin, 2009). Yin suggests that multiple-case-study design is used most appropriately when "two or more cases are believed to be . . . a set of cases with exemplary outcomes in relation to some evaluation questions . . ." (p. 59). Yin also posits that cases must be selected based on "prior knowledge of the outcomes" (p. 59). Consequently, I utilized extant quantitative and qualitative data collected by RMC Research Corporation from exemplar school districts to complete this study.

Subjects

My subjects are two large urban school districts that have enrolled all of their schools in the Healthy Schools Program, and a national cohort of 4,669 schools. These

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subjects were chosen because: (a) they were the first to adopt the Healthy Schools

Program, and thus have the most history and data to draw from for this case study; (b)

they represent exemplar districts, allowing for the ability to analyze both facilitators and

barriers to policy change; and (c) they represent different implementation contexts, thus

providing an opportunity to draw out salient characteristics of effective policy

implementation.

Urban District Case Study Subjects

Both of the urban school districts that will serve as case subjects in this study

made a formal commitment to enroll every school in their district in the Healthy Schools

Program over a 3-year period. The first school district to agree to district-wide

participation in the Healthy Schools Program was a large urban school district

(henceforth, Urban District 1) in the southeastern United States. There were 351 total

schools in Urban District 1 in 2006, the first year in which Urban District 1 participated

in the Healthy Schools Program. The second large urban district (henceforth, Urban

District 2) included in this study is located in the northeastern United States. The Healthy

Schools Program began its work in Urban District 2 in 2007, at which time there were

147 schools in the district.

National Cohort

The Healthy Schools Program began working with 224 schools in 13 states at the

beginning of the 2006-2007 school year. This pilot cohort was used to refine recruitment

and technical assistance, develop measures of school change, and assess measurement reliability and validity. Based on the pilot experience, the Healthy Schools Program expanded to 20 additional states and the District of Columbia during the 2007-2008 and 2008-2009 school years. These states were targeted because in 2007 they had either an adult obesity rate of 25% or higher, or they had one of the 10 highest obesity rates among children aged 10-17 years. In total, the national cohort included 5,113 schools. The Healthy Schools Program recruited individual schools, not school districts, although four entire urban school districts have also adopted the Healthy Schools Program, including two that are subjects of this study. Beginning in 2007-2008, HSP recruited from feeder webs—that is, all elementary and middle schools that feed into one high school. Thus, HSP recruited many more elementary schools than other levels. Overall, the Healthy Schools Program targeted schools serving predominantly low-income and high-ethnic-minority student populations.

Data Collection and Measures

This study used extant data from the Healthy Schools Program evaluation conducted by RMC Research Corporation. All data were collected by RMC Research Corporation researchers between 2006 and 2011 under contract with the Alliance for a Healthier Generation. A number of data sources were mined to address the stated research questions, including (a) the Healthy Schools Program Inventory database; (b) technical assistance and training logs (henceforth, the Progress Tracker); and (c) qualitative site-

visit data (henceforth, Intensive Study). Table 1 illustrates the relationship between the

research questions and measures.

TABLE 1. Relationship Between Research Questions and Data Sources

Research Question	Data Source	Approach
Is the Healthy Schools Program effective in increasing the implementation of policies and programs that promote and provide access to healthier foods and more physical activity before, during and after school?	Healthy Schools Program Inventory Observations Progress Tracker Focus Groups Interviews	Compare baseline and follow-up data. Data from the Healthy Schools Program Inventory were collected in all schools. Data from the other sources were collected in a subsample of schools.
Are there particular components of the Healthy Schools Program model that hasten or hinder school-level implementation of policies and programs that promote and provide access to healthy foods and physical activity before, during, and after school?	Interviews Progress Tracker Focus Groups	Compare baseline and follow-up data from the listed data sources in a subsample of schools.
Are there distinctive or common school-level characteristics that hasten or hinder school-level implementation of policies and programs that promote and provide access to healthy foods and physical activity before, during, and after school?	Interviews Focus Groups Observations	Compare baseline and follow-up data from the listed data sources in a subsample of schools.

Healthy Schools Program Inventory

The Healthy Schools Program Inventory (henceforth, the Inventory) assesses change in school policies and practices related to physical activity and healthy eating. The instrument is based on the Healthy Schools Program Framework, which is a set of best practice guidelines that promote physical activity and healthy eating among students and staff. The current instrument includes 102 items organized around the eight content areas (see Appendix A). The Inventory includes nine outcome indices: Policy and Systems, School Meals, Competitive Foods and Beverages, Health Education, Physical Education, Physical Activity, Before- and After-School Programs, School Employee Wellness, and Total Score.

To assess change in the participating schools over time, this study identified a baseline Inventory data submission. Many schools collected the necessary information over time to complete the Inventory items in all eight content areas. For the purposes of this study, the first data submission, made within 45 days after completing all of the items in six or more content areas, was considered the baseline Inventory. The next step was to identify the most recent Inventory update to measure policy and program implementation progress since baseline. Like the baseline data, this submission was defined as the one in which all of the items in six or more content areas were completed before August 31, 2011.

The Inventory was used to assess whether schools made policy, program and systems changes consistent with the Healthy Schools Program best practices framework. To reflect emerging research on best practices, the Healthy Schools Program made extensive revisions to the Inventory prior to the 2007-2008 school year and additional revisions prior to 2008-2009. Eighty-three items are included in all versions of the Inventory, including the 20067-2007 version. The measures in this case study include indices derived from those common items. The common-item approach assigns each school a sum score within each content area for the Inventory items that remained the same between 2006-2007 and 2008-2009. In addition, each school received a total score, which was the sum of all common items. Self-reported inventory results were analyzed to measure schools' progress, which was defined as advancing from a lower to a higher total score between baseline and follow-up. In all, there were nine outcome indices: Policy and Systems, School Meals, Competitive Foods and Beverages, Health Education, Physical

Education, Physical Activity, Before- and After-School Programs, School Employee Wellness, and Total Score across all common items.

In the analysis stage, the following served as variables of school progress toward policy, program, and systems change: (a) length of school participation in the Healthy Schools Program, (b) school level, (c) predominant socioeconomic status of the student body, and (d) predominant race/ethnicity of the student body. Because most schools completed their baseline inventory when they started implementing the Healthy Schools Program, years between baseline and follow-up Inventory served as a proxy for the length of school participation in the program. School demographic data were drawn from the National Center for Educational Statistics (2010).

School level was used as a categorical variable and was defined as elementary, middle, high, and other (usually indicating kindergarten through eighth grade). Percentage of Students Eligible for Free or Reduced-Price Lunch was used to indicate the predominant income level of the students, and was treated as a categorical variable which divided percentages into four categories (1 = 0-25%, 2 = 26-50%, 3 = 51-75%, and 4 = 76-100%). Primary Ethnicity was a categorical variable that indicated the primary ethnic enrollment of the school (Caucasian, African American, Hispanic, or Asian).

Progress Tracker

The Healthy Schools Program Progress Tracker was used to measure program engagement indicators for each participating school within the subject districts. The Progress Tracker included the following information about each participating school:

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(a) status of signature on the school's memorandum of understanding, (b) train-the-trainer session participation, (c) number of technical assistance encounters with relationship managers and national content experts, (d) status on the completion of the six-step systems change process, and (e) implementation grant status. Progress Tracker information was updated on a monthly basis by program staff working directly with the schools. Information provided by the program staff was corroborated by artifacts from the schools—e.g., participant sign-in sheets and evaluations from train-the-trainer sessions— as well as from the Healthy Schools Program Builder, the online portal that stored each school's Inventory and action plan. The latter also tracked the completion of each of the six systems change steps for each participating school.

There were two technical assistance variables included in the analysis. The first was the number of train-the-trainer sessions attended by each school's Healthy Schools Program representative. The second was the number of technical assistance encounters with the relationship managers and national content experts. Both were measured by mined date from the Progress Tracker.

Intensive Study

Extant data from the intensive study portion of the Healthy Schools Program evaluation were used to (a) identify facilitators and barriers to implementation, and (b) confirm policy and program changes reported by schools on the Inventory. Included in the Intensive Study was a subset of schools from both urban districts that had begun participating in the Healthy Schools Program during the 2007-2008 school year.

RMC Research Corporation staff conducted two site visits to these schools

between 2006 and 2010. I used the following data from the following sources collected

by RMC Research Corporation during their site visits: (a) interviews with key school

staff, (b) focus groups with school wellness council members, and (c) a variety of food

and physical activity observations.

Interviews

Researchers used a series of interview protocols (see Appendices B through I) to

interview the Healthy Schools Program representative. Interview participants included

principals, school or district food service managers, school or district physical or health

education educators, and Healthy Schools Program representatives. Interview questions

pertained to (a) ascertaining progress made towards policy and systems change;

(b) facilitators and barriers to change; (c) future directions; (d) perception of school

administration support for the efforts; and (e) perception of the value of Healthy Schools

Program training, technical assistance, and resources.

Focus Groups

RMC Research Corporation staff also conducted focus groups with other staff

serving on the school wellness council, such as principals, nurses, cafeteria managers,

counselors, health education teachers, and physical education teachers. The focus group

protocol (see Appendices J and K) included questions similar in nature to those in the

interview protocol, with the goal of comparing and contrasting the responses of the

school wellness council members to those of the Healthy Schools Program representatives.

Observations

To learn more about specific policy and program changes and to corroborate Inventory results, RMC Research Corporation performed observations on key policy and program indicators within the Healthy Schools Program best practice framework. For the purposes of this study, observational data collected on (a) physical education classes, (b) school meals, and (c) foods and beverages available to students and staff in vending machines were used in the analysis (see Appendices L through O for a full set of observation protocols). These protocols contained a combination of objective and subjective questions. The RMC Research Corporation staff who conducted the observations were specially trained by physical activity and nutrition experts on key indicators and administration procedures.

Analytic Methods

Multiple analytic methods were used to explore the three research questions posed in this exploratory case study. This mixed-methods approach allowed for data to be triangulated within the three case study subjects, as well as compared and contrasted between subjects. The quantitative results were triangulated with qualitative analyses in a mixed-methods approach to ensure a robust analysis of themes and factors consistent

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across subjects (Patton, 2002). Table 2 illustrates the relationship between research

questions, key indicators, data sources and analytic methods.

TABLE 2. Relationship Between Research Questions,
Data Sources and Analytic Methods

Research Question	Key Indicators	Data Source	Analytic Methods
Is the Healthy Schools Program (HSP) effective in increasing the implementation of policies and programs that promote and provide access to healthier foods and more physical activity before, during and after school?	Increased number of programs and policies that promote access to healthier foods and beverages. Increased number of programs and policies that promote access to physical activity. Increased quantity and quality of health and physical education programs.	HSP Inventory Observations Progress Tracker Focus Groups Interviews	Use t tests and content analysis methods to measure significance of change between baseline and follow-up results.
Are there particular components of the Healthy Schools Program model that hasten or hinder school-level implementation of policies and programs that promote and provide access to healthy foods and physical activity before, during, and after school?	Frequency of participation in train-the-trainer sessions. Receipt of technical assistance from a content expert.	HSP Inventory Interviews Progress Tracker Focus Groups	Use standardized descriptive statistics procedures, regression analyses, and narrative and content analyses to explore significance of key indicators.
Are there distinctive or common school-level characteristics that hasten or hinder school-level implementation of policies and programs that promote and provide access to healthy foods and physical activity before, during, and after school?	School level. Predominant student race/ethnicity. Predominant student socioeconomic status. Length of enrollment in the HSP.	HSP Inventory School Demographics	Use standardized descriptive statistics procedures, regression analyses, and narrative and content analyses to explore significance of key indicators.

Quantitative Methods

I utilized a variety of descriptive and analytic methods to explore the research questions. I used standardized descriptive statistics procedures to describe the subject demographics. Specifically, I mined data from the National Center for Education Statistics to describe the student populations within the urban school districts and national cohort in terms of representation of school level, student socioeconomic status (as measured by free or reduced lunch eligibility), and primary student race ethnicity.

I also used standard descriptive methods to measure school engagement percentages for the three cases. Schools were defined as "engaged" if they had completed the Healthy Schools Inventory or participated in at least one train-the-trainer session in the past 12 months (since July 2010). Lastly, standard descriptive methods were used to report on train-the-trainer session completion rates, as scheduled based on the schools' tenure in the Healthy Schools Program, and to report Healthy Schools Inventory completion rates.

For each subject, school-level progress on implementing policies, programs, and systems changes called for in the Healthy Schools Program best practice framework was assessed by examining gain scores between the baseline inventory and the most recent inventory each school completed as of August 31, 2011. This assessment included all common items within each of the eight content areas and for schools' total progress across all areas. To compare baseline and follow up results, a series of t tests were performed to assess statistical significance, supplemented by Cohen's d calculations to

examine effect sizes associated with school-level improvement for each content area and total score.

A series of ANOVA tests were performed to determine whether there was a significant difference between schools' gain scores from the two urban districts and the national cohort. A series of follow-up Tukey's *post hoc* tests were conducted to discern the case or cases to which significant findings on the ANOVA tests were related. A regression model was used to identify school characteristics that contribute uniquely to progress in school policies and environment in both urban districts and the national cohort. The dependent variables were common-item gain scores determined by subtracting the baseline Inventory score from the most recent follow-up Inventory as of August 31, 2011. The regression model included baseline Inventory score length of program participation, number of train-the-trainer sessions attended, and engagement with a national content expert. The regression model was repeated to determine the total progress made, as well as progress made in each of the eight content areas.

Qualitative Methods

Qualitative data from the interviews, focus groups, and observations collected as a part of the Intensive Studies were analyzed using well-established methodologies that include narrative and content analyses (Patton, 2002). Specifically, qualitative analyses were used to identify patterns and common themes that emerged from responses to specific questions or that referred to topics of interest, including emphasizing unique and common barriers and facilitators to making the policy, program, systems changes called

for in the Healthy Schools Program best practice framework. Qualitative analyses were used to highlight needs for future investigation and to triangulate findings with corresponding quantitative analyses (Patton, 2002) to determine convergence points in the evidence.

Potential Limitations

Given that this case study is exploratory in nature and investigates only two large urban school districts, the findings are not generalizable to all schools, or even urban schools. There is no intent to generalize the results; instead, they are used to inform future design and development of like efforts. There are also limitations within the design itself that have been anticipated and addressed to the extent possible in the analysis stage.

In relation to the question of the degree to which the Healthy Schools Program results in effective implementation of policies and programs that promote and provide access to healthier foods and more physical activity before, during and after school, the findings have been interpreted cautiously. The Inventory is a self-report instrument, allowing for variability of definitions of questions. The direct observations, interviews, and focus groups that were part of the Intensive Study provided for some triangulation of data, but because they occurred only in a subsample of schools within each urban school district, they could not be used to corroborate all of the quantitative results.

Findings related to the question of whether there are particular components of the Healthy Schools Program model or school characteristics that hasten or hinder school-level implementation of policies and programs that promote and provide access to healthy

foods and physical activity before, during, and after school have also been interpreted

with caution. The analytic methods used suggest associations, not causal relationships.

CHAPTER IV

RESULTS

The results of this study are reported in the following order: (a) a descriptive representation of the subject demographics, (b) quantitative results, and (c) qualitative results. Results are categorized and discussed in alignment with the research questions in the Discussion chapter to follow.

Subject Demographics

The Healthy Schools Program provides intensive support to a total of 5,113 schools across the nation. Of these schools, 310 are located in Urban District 1, while 134 are located in Urban District 2 and 4,669 in other parts of the country.

National Cohort

Of the 4,669 schools participating in the Healthy Schools Program nationally, 61% are elementary schools (kindergarten through fifth grade), 17% are middle schools (sixth through eighth grades), 14% are high schools (ninth through 12th grades), and 8% are configured in other ways or of unknown composition. Schools in the national cohort are generally recruited as feeder patterns—that is, one high school and all of its feeder middle and elementary schools. The majority of the 8% are thought to be schools that span kindergarten through eighth grade. Nearly 66% of schools serve student populations predominantly living in poverty, as measured by free and reduced lunch participation. The

student populations in 56% of participating schools are predominantly African American or Hispanic (33% and 22%, respectively). Table 3 displays the demographic characteristics of participating schools by enrollment year.

TABLE 3. Characteristics of Participating Schools: National Cohort

Characteristic	Initial Year %					Total
	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	
School Level						
Elementary	32	58	62	63	65	61
Middle School	29	19	16	17	15	17
High School	33	16	13	13	12	14
Other/missing	6	7	8	7	8	8
Free or Reduced-Price Lunch						
0-24%	24	8	10	11	13	12
24-49%	21	19	18	25	21	22
50-74%	25	21	33	29	27	28
75-100%	31	51	39	35	39	38
Primary Ethnicity						
Caucasian	48	37	46	45	36	44
African American	24	42	31	33	36	33
Hispanic	25	19	19	22	27	22

Urban District 1 Demographics

Urban district 1 is located in the southeastern United States. In all, 310 schools from Urban District 1 agreed to participate in the Healthy Schools Program. This cohort consists of 205 elementary schools, 55 middle schools, 36 high schools, and 14 combined elementary and middle schools (kindergarten through eighth grade). Eighty-two percent

of the participating schools serve predominantly high-poverty students, as measured by free and reduced lunch eligibility. Ninety-seven percent of the schools serve predominantly Hispanic or African American student populations (63% and 34%, respectively). Table 4 describes the participation of Urban District 1 schools in the Healthy Schools Program.

TABLE 4. Characteristics of Participating Schools: Urban District 1

| Characteristic | Initial Year % | | | | | Total |
	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	
School Level						
Elementary	33	70	70	67	50	68
Middle School	33	17	17	22	0	19
High School	33	13	11	11	0	12
Other/missing	0	0	2	0	50	1
Free or Reduced-Price Lunch						
0-24%	0	3	0	6	0	3
24-49%	17	25	3	21	50	15
50-74%	67	26	28	28	0	28
75-100%	17	46	69	44	50	54
Primary Ethnicity						
Caucasian	0	1	0	7	0	3
African American	0	17	52	24	0	32
Hispanic	100	82	48	68	100	66

Urban District 2 Demographics

The second large urban district included in this study, Urban District 2, is located in the northeastern United States. In all, 133 schools from Urban District 2 are enrolled in

the Healthy Schools Program. Seventy-seven are elementary schools, 16 are middle schools, 28 are high schools, and 12 are combined elementary and middle schools. The vast majority (94%) of participating schools serve predominantly high-poverty students, as measured by free and reduced lunch eligibility. Ninety percent of the schools serve predominantly African American or Hispanic student populations (52% and 38%, respectively). Table 5 describes the participation of Urban District 2 schools in the Healthy Schools Program.

TABLE 5. Characteristics of Participating Schools: Urban District 2

| Characteristic | Initial Year % | | | | |
	2007-2008	2008-2009	2009-2010	2010-2011	Total
School Level					
Elementary	47	72	58	53	58
Middle School	20	13	6	16	12
High School	27	16	19	21	20
Other/missing	7	0	17	11	10
Free or Reduced-Price Lunch					
0-24%	0	0	0	0	0
24-49%	7	0	4	17	6
50-74%	45	28	24	18	30
75-100%	48	72	71	56	64
Primary Ethnicity					
Caucasian	10	3	7	22	10
African American	45	47	60	50	52
Hispanic	41	47	33	28	38

Quantitative Results

Results of the quantitative analyses are reported in the following order for each case: (a) school engagement, (b) school participation in train-the-trainer sessions, (c) school progress in health-promoting policy and program change, (d) comparison of progress, and (e) relationship between participation in training and technical assistance and policy and program change. All participating schools are included in the quantitative analysis.

School Engagement

A school is defined as engaged in the Healthy Schools Program if it has completed at least one train-the-trainer session or has completed the Healthy Schools Program over the past 12 months. Of the 5,113 schools from the national cohort, Urban District 1, and Urban District 2 combined, 93.8% of schools remain engaged in the Healthy Schools Program. Ninety-three percent of the national cohort schools remain engaged, 99% of Urban District 1 schools remain engaged, and 100% of Urban District 2 schools remain engaged.

Train-the-Trainer Session Participation

Schools receiving intensive support from the Healthy Schools Program are scheduled to participate in nine train-the-trainer sessions over a 4-year period. Three sessions are scheduled to occur in the first year of participation, and two sessions are scheduled to occur each year thereafter. As prescribed by the HSP training and technical

assistance schedule, the number of technical assistance sessions completed increases progressively with the number of years of Healthy Schools Program participation. However, some schools progress through the train-the-trainer sessions more quickly and some progress more slowly.

Table 6 shows the percentage of national cohort schools that have completed train-the-trainer sessions on the prescribed schedule. The actual completion rates range from 55% to 78%.

Table 7 shows the percentage of Urban District 1schools that have completed train-the-trainer sessions on the prescribed schedule. The actual completion rates range from 70% to 100%. It is important to note that the 2006-2007 was recruited at the end of the school year, thus this cohort began its train-the-trainer protocol with the Healthy Schools Program at the beginning of the 2007-2008 school year.

Table 8 shows the percentage of Urban District 2 schools that have completed train-the-trainer sessions on the prescribed schedule. The expected completion rates range from 85% to 95%. It is important to note that the 2007-2008 cohort began its work with the Healthy Schools Program halfway through the school year. As a result, the cohort was not yet expected to complete Train-the-Trainer Session 9 at the time of this study.

Healthy Schools Program Inventory

The Healthy Schools Program Inventory assesses school policies and practices across eight content areas. Healthy Schools Program representatives complete a baseline Inventory and are encouraged to complete it annually thereafter. Thus, the instrument

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serves as an evaluation tool for measuring the progress that schools make towards

implementing health-promoting policies and practices over time.

TABLE 6. Schools' Train-the-Trainer Session Completion: National Cohort

Initial Year	Engaged	S1	S2	S3	S4	S5	S6	S7	S8	S9	Completion Rate %
2006-07	212	210	182	166	126	82	113	83	106	112	61
2007-08	686	638	526	490	501	429	415	385	350	303	55
2008-09	1,163	1,115	1,000	817	772	657	622	438	39	54	66
2009-10	1,412	1,334	1,236	1,131	1,020	751	58	21	5	3	78
2010-11	839	725	638	447	64	55	12	12	2	6	71
2011-12	45	12	1	3	3	1	0	0	0	0	NA
Total	4,357	4,034	3,583	3,054	2,486	1,975	1,220	939	502	478	

TABLE 7. Schools' Train-the-Trainer Session Completion: Urban District 1

Initial Year	Engaged	S1	S2	S3	S4	S5	S6	S7	S8	S9	Completion Rate %
2007-08	95	88	59	95	88	58	64	49	60	35	70
2008-09	116	116	115	95	95	56	82	38	2	1	74
2009-10	92	89	83	62	56	41	1	0	0	0	72
2010-11	4	4	4	4	0	0	0	0	0	0	100
Total	307	297	261	256	239	155	147	87	62	36	

TABLE 8. Schools' Train-the-Trainer Session Completion: Urban District 2

Initial Year	Engaged	S1	S2	S3	S4	S5	S6	S7	S8	S9	Completion Rate %
2007-08	30	30	29	29	29	29	29	27	25	0	95
2008-09	32	32	31	28	27	27	25	20	0	0	85
2009-10	52	52	51	51	45	40	0	0	0	0	92
2010-11	19	18	18	18	17	15	0	0	0	0	95
Total	133	132	129	126	118	111	54	47	25	0	

Healthy Schools Program Inventory Reliability

Reliability is strong for the total Healthy Schools Inventory index (Coefficient Alpha = .90) and is fair to good for six of the individual content areas (Coefficient Alphas ranged from .63 to .87). The exceptions are the Policy and Systems and Physical Activity indices (Coefficient Alphas = .57 and .52, respectively). Each of these indices is comprised of only six items for which many schools had high baseline scores. Table 9 summarizes the coefficient alpha reliability of the common Inventory item scales. These coefficients suggest that the Healthy Schools Program Inventory item scales are reasonable proxies for attributing progress made by the schools to participation in the Healthy Schools Program.

Healthy Schools Program Inventory Completion Rates

Table 10 summarizes the Inventory completion rates for all engaged schools in the national cohort. Of the 4,357 engaged schools in the national cohort, 90.6% have completed the inventory at least once and 60.9% have completed at least one follow-up inventory.

Table 11 summarizes the inventory completion rates among schools in Urban District 1. Of the 307 engaged schools, 98% of schools have submitted a completed Inventory once, and 88% of schools have updated their inventories at least once.

Table 12 summarizes the inventory completion rates among schools in Urban District 2. Of the 133 engaged schools, 97% of schools have submitted a completed Inventory once, and 81.5% of schools scheduled to update their inventories have done so

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TABLE 9. Reliability of Content Area Scales Based on Items Common to
Healthy Schools Program Inventory Between 2007-2008 and 2008-2009

Content Area	Number of Items 2007-2008	Number of Items 2008-2009	Common Items	Correlation 2007–2008	Correlation 2008–2009	Coefficient Alpha Reliability
Policy/Systems	12	16	6	.52	.59	.57
School Meals	19	20	17	.70	.74	.78
Competitive Foods and Beverages	12	12	12	.71	.69	.80
Health Education	10	12	10	.79	.76	.74
Physical Education	15	16	14	.60	.62	.71
Physical Activity	8	6	6	.76	.96	.52
Before- and After-School Programs	6	6	6	.97	.94	.83
School Employee Wellness	13	12	12	.71	.66	.87
Total	95	100	83	.81	.85	.90

TABLE 10. Schools' Inventory Completion: National Cohort

Initial Year	Engaged	Baseline	Follow-Up
2006-2007	212	193	146
2007-2008	686	619	533
2008-2009	1,163	1,070	841
2009-2010	1,412	1,293	982
2010-2011	839	740	152
2011-2012	45	33	0
Total	4,357	3,948	2,654

TABLE 11. Schools' Inventory Completion: Urban District 1

Initial Year	Engaged	Baseline	Follow-Up
2007-2008	95	94	91
2008-2009	116	115	110
2009-2010	92	88	69
2010-2011	4	4	1
Total	307	301	271

TABLE 12. Schools' Inventory Completion: Urban District 2

Initial Year	Engaged	Baseline	Follow-Up
2007-2008	30	30	24
2008-2009	32	31	33
2009-2010	52	51	36
2010-2011	19	17	0
Total	133	129	93

at least once. Schools included in the 2010-2011 cohort are not yet scheduled to complete their first follow-up inventory.

School Policy and Program Change Results

School progress towards implementing policy and program changes that promote healthy eating and more physical activity is measured by the Healthy Schools Inventory. The results reported in this section reflect the common item scoring approach to measuring progress, which is described fully in the Methodology chapter. In summary, the common item approach assigns each school a sum score within each content area. In addition, each school receives a total score, which is the sum of all common items. Progress is measured by a school advancing from a lower total score to a higher total score between baseline to follow-up Inventories.

National Cohort Results

Eighty percent of schools in the national cohort made at least one health-promoting policy or program change during their tenure in the Healthy Schools Program. Participating schools made an average of 7.53 policy and program changes. Schools made the most amount of progress in their school employee wellness programs and the least amount of progress in implementing health-promoting policies and systems. Improved policies and programs ranged from 38% to 59% across the content areas.

For each content area, Table 13 presents the number of common Inventory items, the average scores calculated at baseline and follow-up, the gain in content area scores,

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TABLE 13. Change in Healthy Schools Program Inventory Scores Based on Common Items: National Cohort

Content Area	Number of Common Items	Average Baseline Score	Average Follow-Up Score	Gain	Effect Size	% with Improvement
Policy/Systems	6	4.03	4.59	0.56***	0.53	38
School Meals	17	11.27	12.66	1.39***	0.54	52
Competitive Foods and Beverages	12	3.80	4.85	1.05***	0.43	44
Health Education	10	4.37	5.31	0.95***	0.49	45
Physical Education	14	7.23	7.97	0.74***	0.43	42
Physical Activity	6	2.71	3.26	0.55***	0.47	39
Before- and After-School Programs	6	2.95	3.70	0.75***	0.49	41
School Employee Wellness	12	3.93	5.40	1.47***	0.70	59
Total	83	40.30	47.83	7.53***	0.84	80

Note. $n = 271$ schools. All gains statistically significant ($p < .001$).

*$p < .05$. **$p < .01$. ***$p < .001$.

the effect size, and the percentages of schools that reported improvement on these common items. A series of *t* tests were conducted to verify that the changes that occurred were statistically significant. Results of the *t* tests indicate that all changes were significant ($p < .001$). Next, a series of Cohen's *d* calculations were performed to determine effect size. Across content areas the gains can be described as moderate to large. The overall effect size of changes across content areas was moderate to large. The largest effect size was in the area of school employee wellness (effect size = .70), and the smallest effect size was in the area of physical education (effect size = .43). There was a large effect size of .84 across content areas.

Urban District 1

Eighty-nine percent of schools in the Urban District 1 made at least one health-promoting policy or program change during their tenure in the Healthy Schools Program. Participating schools made an average of 10.12 policy and program changes. Schools made the most amount of progress in their school employee wellness programs and the least amount of progress in implementing physical education and before- and after-school programs. Improved policies and programs ranged from 39% to 77% across the content areas.

For each content area, Table 14 presents the number of common Inventory items, the average scores calculated at baseline and follow-up, the gain in content area scores, the effect size, and the percentages of schools that reported improvement on these common items. A series of *t* tests were conducted to verify that the changes were

TABLE 14. Change in Healthy Schools Program Inventory Scores Based on Common Items: Urban District 1

Content Area	Number of Common Items	Average Baseline Score	Average Follow-Up Score	Gain	Effect Size	% with Improvement
Policy/Systems	6	4.25	4.89	0.64***	0.60	42
School Meals	17	12.66	14.34	1.68***	0.65	56
Competitive Foods and Beverages	12	5.07	6.61	1.55***	0.53	50
Health Education	10	5.02	5.98	0.96***	0.45	46
Physical Education	14	8.98	9.59	0.61***	0.43	39
Physical Activity	6	3.27	3.91	0.64***	0.55	44
Before- and After-School Programs	6	4.19	4.89	0.70***	0.55	39
School Employee Wellness	12	4.60	8.09	3.50***	1.02	77
Total	83	48.41	58.53	10.12***	1.11	89

Note. n = 271 schools. All gains statistically significant (p < .001).

*p < .05. **p < .01. ***p < .001.

statistically significant. Results of the *t* tests indicate that all changes were significant (*p* < .001). Further, a series of Cohen's *d* calculations were performed to determine effect size. Across content areas the gains can be described as moderate to large. The overall effect sizes of changes across content areas were moderate to large. The largest effect size was in the area of school employee wellness (effect size = 1.02) and the smallest effect size was in the area of physical education (effect size = .43). There was a large, cumulative effect size of 1.11 across content areas.

Urban District 2

Ninety-two percent of schools in Urban District 2 made at least one health-promoting policy or program change during their tenure in the Healthy Schools Program. Participating schools made an average of 11 policy and program changes. Schools made the most amount of progress in their school employee wellness programs and the least amount of progress in implementing health-promoting policies and systems. Improved policies and programs ranged from 41% to 75% across the content areas.

For each content area, Table 15 presents the number of common Inventory items, the average scores calculated at baseline and follow-up, the gain in content area scores, the effect size, and the percentages of schools that reported improvement on these common items. A series of *t* tests were conducted to verify that the changes were statistically significant. Results of the *t* tests indicate that all changes were significant (*p* < .001). Further, a series of Cohen's *d* calculations were performed to determine effect size. Across content areas the gains can be described as moderate to large. The overall

effect size of changes across content areas ranged from small to large. The largest effect size was in the area of school meals (effect size = .90), and the smallest effect size was in the area of policy and systems (effect size = .21). There was a large, cumulative effect size of 1.09 across content areas.

TABLE 15. Change in Healthy Schools Program Inventory Scores Based on Common Items: Urban District 2

Content Area	Number of Common Items	Average Baseline Score	Average Follow-Up Score	Gain	Effect Size	% with Improvement
Policy/Systems	6	4.26	4.83	.55***	.21	41
School Meals	17	9.93	12.22	2.30***	.90	62
Competitive Foods and Beverages	12	3.30	4.57	1.30***	.50	51
Health Education	10	3.24	4.57	1.33***	.45	58
Physical Education	14	5.32	6.99	1.67***	.54	55
Physical Activity	6	2.67	3.25	.58***	.40	51
Before- and After-School Programs	6	3.26	4.28	1.02***	.56	44
School Employee Wellness	12	3.64	5.42	1.79***	.86	75
Total	83	35.48	46.48	11.00***	1.09	92

Note: All gains statistically significant ($p < .001$).

*$p < .05$. **$p < .01$. ***$p < .001$.

Comparison Across Subjects

Descriptive statistics and an ANOVA were used to determine whether there were variances in progress across cohorts. Figure 1 presents the percentage of schools within each cohort that have implemented at least one policy or program change in each content area since beginning participation in the Healthy Schools Program.
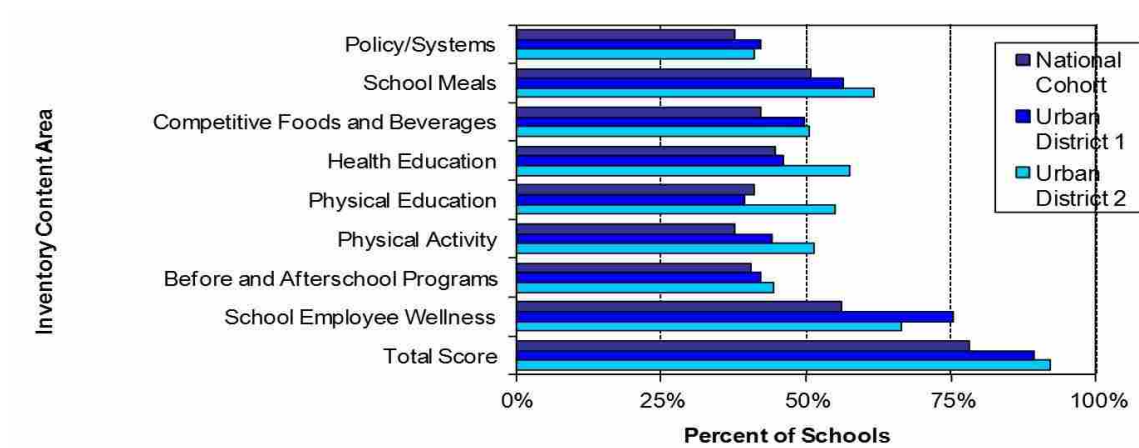
FIGURE 1. Percentage of schools across cohorts showing policy and program improvement in each content area.

A series of one-way between-subjects ANOVAs were performed to compare improvement across the three cases. ANOVA results indicate statistically significant differences between cases in the total progress made and in the Health Education, Physical Education, Physical Activity, and School Employee Wellness content areas. Table 16 presents the ANOVA results and indicates statistically significant differences.

TABLE 16. Variances of School Change Across Cases

Content Area	df	F	P
Policy/Systems		1.273	.280
Between Groups	2		
Within Groups	2,467		
Total	2,469		
School Meals		3.598	.028
Between Groups	2		
Within Groups	2,471		
Total	2,473		
Competitive Foods and Beverages		3.761	. .023
Between Groups	2		
Within Groups	2,471		
Total	2,473		
Health Education		3.354	.035
Between Groups	2		
Within Groups	2,429		
Total	2,431		
Physical Education		4.420	.012
Between Groups	2		
Within Groups	2,454		
Total	2,456		
Physical Activity		5.690	.003
Between Groups	2		
Within Groups	2,466		
Total	2,468		
Before- and After-School Programs		.334	.716
Between Groups	2		
Within Groups	2,182		
Total	2,184		
School Employee Wellness		19.230	.000
Between Groups	2		
Within Groups	2,471		
Total	2,473		
Total Score		11.713	.000
Between Groups	2		
Within Groups	2,120		
Total	2,122		

I conducted Tukey's *B* post hoc tests to compare each case's results to the others. Tukey's *B* results suggest that (a) Urban District 2 made significantly more policy and program changes than Urban District 1 and the national cohort in health education and physical education, (b) Urban District 2 made significantly more progress in physical activity than the national cohort, and (c) Urban District 1 and Urban District 2 each made significantly more progress than the national cohort in school employee wellness and overall change.

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Relationship Between Healthy Schools Program Engagement

and School Change

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To determine whether Healthy Schools Program engagement is related to policy and program outcomes for each cohort, a regression model was used to identify indicators that uniquely contributed to change in policies and practices as measured by schools' baseline and follow-up Inventory data. To assess the contribution of program engagement beyond what would otherwise be seen over time in the Healthy Schools Program, the analyses controlled for the number of months between schools' baseline and follow-up Inventory completion. Specifically, the analyses examined the relationship between schools' progress implementing policies and programs outlined in the Healthy Schools Program best practice framework and the following indicators: (a) baseline Healthy Schools Program Inventory score, (b) number of months between baseline and follow-up Inventory completion, (c) number of train-the-trainer sessions completed, and (d) incidence of Healthy Schools Program national content manager technical assistance.

National Cohort

As presented in Table 17, both the number of train-the-trainer sessions completed and assistance from a Healthy Schools Program national content manager significantly and uniquely contributed to schools' progress implementing health-promoting policies and practices ($p = .001$). After controlling for the number of months of Healthy Schools Program participation and other covariates, I found that schools which had implemented the Healthy Schools Program for longer showed significantly more progress than schools that had implemented the program for less time ($p = .001$). Lastly, schools with lower Healthy Schools Inventory baseline scores made significantly more progress than did schools with higher baseline scores ($p = .001$).

TABLE 17. Regression of Program Implementation Progress on Program
Engagement and School Demographic Indicators: National Cohort

Indicator	b	t
Baseline Healthy Schools Inventory score	-0.33	-20.76***
Number of months between baseline and follow-up	0.12	5.13***
Number of technical assistance sessions	0.40	3.24***
Number of contacts with national content manager	5.02	12.80***

***$p < .001$.

This regression model was repeated for individual content areas. Results indicated that schools that participated in more train-the-trainer sessions and schools that had received assistance from a national content manager were significantly more likely than other schools to make progress in the areas of policy and systems, school meals,

competitive foods and beverages, and health education. In the cases of physical education, physical activity, before- and after-school programs, and school employee wellness, only assistance from a national content manager was a unique contributor to schools' progress, not the number of train-the-trainer sessions attended. The influence of the other covariates had an impact in only one content area. Specifically, the length of Healthy Schools Program implementation (months between baseline and follow-up) was not associated with changes in school employee wellness.

Urban District 1

As presented in Table 18, both of the program engagement indicators (number of technical assistance sessions completed and assistance from a Healthy Schools Program national content manager) significantly and uniquely contributed to schools' progress implementing health-promoting policies and practices, even after controlling for the number of months of Healthy Schools Program participation and other covariates. Schools that completed more train-the-trainer sessions made significantly more progress than schools that had completed fewer sessions *(p = .04)*. Schools that had contact with a Healthy Schools Program national content manager made significantly greater progress than schools that did not have contact *(p = .001)*. Schools with lower Healthy Schools Program Inventory total scores at baseline made significantly greater progress than schools with higher total scores at baseline *(p = .001)*. Years between baseline and follow-up was non-significant once program engagement factors were included in the model.

This regression model was repeated for individual content areas. Results indicated that, after controlling for covariates, schools that participated in more train-the-trainer sessions and schools that had received assistance from a national content manager were significantly more likely than other schools to make progress in the areas of school meals and school employee wellness. Assistance from a national content manager was a unique contributor to schools' progress in increasing physical activity opportunities, but that area was not associated with the number of train-the-trainer sessions attended. In the area of policy and systems, only participation in train-the-trainer sessions was a unique contributor to schools' progress.

TABLE 18. Program Implementation Progress Related to Specific Indicators: Urban District 1

Indicator	b	t
Baseline Healthy Schools Inventory score	-0.53	- 0.06***
Months between baseline and follow-up	0.31	1.12
Number of technical assistance sessions	0.84	0.41*
Contact with national content manager	4.63	1.37***

*$p < .05$. **$p < .01$. ***$p < .001$.

Urban District 2

As presented in Table 19, the number of train-the-trainer sessions completed and assistance from a Healthy Schools Program national content manager were not significantly associated with schools' progress in implementing health-promoting policies and practices. After controlling for the other covariates, I found that schools with higher total scores on the Healthy Schools Program Inventory at baseline made significantly

greater progress than schools with higher total scores at baseline ($p < .001$). The months

between baseline and follow-up were also a moderately significant factor in progress,

after controlling for other covariates ($p < .05$). This regression model was repeated for

individual content areas. After controlling for covariates, I found no significant

association between any of the content areas and participation in train-the-trainer sessions

or national content manager assistance.

TABLE 19. Program Implementation Progress Related to Specific Indicators: Urban District 2

Indicator	b	t
Baseline Healthy Schools Inventory score	0.61	6.14***
Months between baseline and follow-up	0.36	2.06*
Number of technical assistance sessions	-0.97	-0.84
Contact with national content manager	-0.68	-0.32

*$p < .05$. **$p < .01$. ***$p < .001$.

Qualitative Results

Results of the qualitative analyses are reported in this section in the following

order: (a) subsample description; (b) baseline interview, observation, and focus group

findings per policy and program domain and by cohort; and (c) follow-up interview,

observation, and focus group findings per policy and program domain and by cohort. Data

reported are drawn from the raw data collected by RMC Research Corporation from

baseline and follow-up site visits conducted in all schools that were a part of the

subsample for each cohort, as described below.

Subsample Description

A subsample of participating schools in the national cohort, Urban District 1 and Urban District 2 are included in the qualitative analysis. For each cohort, the subsamples were selected to be representative of key demographic indicators of the cohort population.

National Cohort

There are 21 schools in the national cohort subsample. Subsample schools are located in eight school districts. Subsample schools were selected to reflect the predominant ethnicity and socioeconomic status of the student body population enrolled in the entirety of the 2006-2007 Healthy Schools Program cohort. To assess how well subsample schools represented all 224 schools in the 2006-2007 cohort, I compared the characteristics of selected schools to the nonselected schools in the cohort. There were no significant differences between the subsample and overall 2006-2007 cohort schools in terms of percentage of socioeconomic status or ethnicity.

Urban District 1

There are 13 subsample schools in the Urban District 1 cohort. To assess how well subsample schools represented the Urban District 1 schools as a whole, I compared the student body demographics of the 13 subsample schools to other participating Urban District 1 schools. Analyses indicated no significant differences in the socioeconomic status of students. The subsample did, however, differ significantly from other Urban

District 1 schools in regards to the ethnicity of the student body. Overall, in comparison to the overall student body composition of Urban District 1, subsample schools served a higher percentage of African American students and a smaller percentage of Hispanic students. This trend was especially true at the elementary school level.

Urban District 2

There are 15 subsample schools in the Urban District 2 cohort. To assess how well subsample schools represented the other participating Urban District 2 schools, I compared the demographic characteristics of the subsample schools to those in the broader cohort. Analyses indicated no significant differences in student body socioeconomic status or ethnicity between the subsample and the broader cohort.

Baseline Site Visit Results

Interviews, observations, and focus groups were conducted in each of the cohorts, using the procedures described earlier in the Methodology section (Chapter III). Results are reported for the following areas: (a) policy and systems; (b) school meals; (c) competitive foods and beverages sold outside of the school meals programs; (d) physical activity opportunities before, during, and after school; (e) physical education; (f) health education; (g) before- and after-school programs; and (h) school employee wellness programs. Patterns and common themes that emerged from the interviews, focus groups, and observations for each domain are reported below. This analysis particularly

focuses on common barriers and facilitators to making the policy, program, systems changes called for in the aforementioned areas.

Policy and Systems

Baseline data on school health policy and infrastructure were collected through interviews and focus groups in all three cohort sites. In all cases, a policy audit was also conducted. Patterns and themes are reported below.

National Cohort

School representatives were asked a series of questions regarding their district wellness policies, including the implementation and monitoring plan for the policy and whether there were any funds allocated to implementation of the policy. Representatives from all 21 subsample schools reported that their districts had a wellness policy in accordance with the Child Nutrition and WIC Reauthorization Act of 2004. A review of these district wellness policies revealed that seven of the eight policies lacked detail in terms of physical education requirements. The remaining district wellness policy specified the number of minutes of physical education students were to receive over a 10-day period and the number of minutes of daily recess that elementary school students were to receive. Four of the eight district wellness policies directed schools to integrate health education into classroom instruction, and a fifth stated that schools were required to offer nutrition and health education at each grade level as part of a "sequential, comprehensive, standards-based program."

One of the eight district wellness policies required schools to follow state nutrition requirements, which were more stringent than federal requirements for school meals, and two other district wellness policies required schools to meet the 2005 Dietary Guidelines for Americans, which were also more stringent than federal requirements for school meals. Two district wellness policies provided some specific guidance regarding the types of competitive foods and beverages that could be sold in schools.

Most of the principals interviewed stated that their role was to monitor the implementation of the policy at their school and to disseminate information about the wellness policy to their staff. Some, however, were unfamiliar with the contents of their district wellness policy, and one principal was unaware that his district had such a policy.

Fourteen of the 21 subsample schools had formed a school wellness council. One rural school district decided to develop a district-level council instead. The size and composition of the school wellness councils varied greatly across the subsample schools. Principals, vice principals, physical education teachers, health education teachers, school nurses, counselors, and food service personnel were among those staff who most frequently served on the committees. A few successfully included parents, students or both. The committees ranged in size from three to 12 people.

School representatives described the prevailing challenges to implementing school wellness policy and systems changes as reduced school funding and limited time for the school wellness council to meet. School representatives also reported that facilitators of change included parent and student engagement, stipends for teachers to participate in

related professional development, and the inclusion of a health and wellness goal in the

school's school improvement plan.

Urban District 1

At the time of the baseline site visit, Urban District 1 had a district-level school wellness policy that was aligned with the minimum requirements of the Child Nutrition and WIC Reauthorization Act of 2004. Specifically, the district policy mandated that school administration make regulatory changes in policy, curriculum, and operating procedures to promote a healthy lifestyle for all students. All schools in the district were required to provide a specified number of physical education minutes to its students: 150 minutes at the elementary school level; 225 minutes at the middle school level; and two semesters for high school graduation.

At the school level, all school representatives interviewed reported that there was a school wellness council in place, which met on a regular basis. Principals, physical educators, cafeteria managers, and classroom teachers were the most commonly cited members of the school wellness councils. School representatives cited challenges in recruiting or engaging parents in school wellness efforts. When asked what factors were most instrumental in facilitating progress in the implementation of policies and systems, school representatives cited a supportive school administrator and release time to conduct school wellness-related work. Several school representatives also indicated that district-level expectations regarding participation in the Healthy Schools Program also served as a driver for change in their schools.

Urban District 2

At the time of the baseline site visit, Urban District 2 had a district-level school wellness policy that was aligned with the minimum requirements of the Child Nutrition and WIC Reauthorization Act of 2004. Specifically, the district policy mandated changes in policy, curriculum, and operating procedures to promote a healthy lifestyle and appropriate nutritional and physical fitness practices for all students. All schools in the district were required to provide nutrition education, healthy foods, physical education and activity opportunities, and other wellness activities.

At the school level, all school representatives interviewed reported that there was a school wellness council in place, or that their schools were in the process of establishing a school wellness council as a result of early engagement in the Healthy Schools Program. Principals, physical educators, and school nurses were the most commonly cited members of the school wellness councils. Food service personnel, students, and parents were cited as members in some cases, but not the majority of cases. Several school representatives cited challenges in recruiting or engaging parents in school wellness efforts. When asked which factors were most instrumental in facilitating progress in the implementation of policies and systems changes, school representatives cited a supportive school administrator, school board support, and release time to conduct school wellness-related work.

School Meals Programs

Baseline data on school meals programs were collected through interviews and focus groups in all three cohort sites. Patterns and themes are reported below.

National Cohort

School representatives and district food service directors reported making a variety of changes in recent years to improve the nutritional quality of school meals. In most cases, decisions about school meals were made at the district level, although schools in some districts were able to provide feedback. Common school meal program changes reported by school representatives included (a) reduction in fat or trans-fats in food items served; (b) changed food preparation methods to reduce fat (e.g., rinsing and draining ground beef prior to cooking, baking rather than frying); (c) increase in the number of whole-grain foods available; (d) increase in the variety of fruits and vegetables offered; and (e) addition of a daily salad bar, or entrée salads.

A few school representatives reported that their schools eliminated or reduced foods of minimal nutritional value or high in sugar, and a few schools limited milk options to 1% or skim milk. Other cited changes included instituting portion control, adding a weekly fish entrée, introducing more locally grown foods, and offering more foods made from scratch. Several school representatives reported that they had little or no control over the foods and beverages served because meals were planned, and often prepared, at the district level.

School representatives cited several barriers to shifting to healthier school meals, such as cost, student receptivity, and limited availability of healthier products. Most food service directors reported that the high cost of fresh fruits, vegetables, and other healthy foods, particularly in comparison to the cost of processed foods, was an obstacle to serving healthier meals. For example, healthier food items such as yogurt, lean meat, cheese, and eggs were mentioned as more costly than more heavily processed foods.

School representatives also reported the limited availability of healthier options as a barrier. A few schools reported that the quality of fresh fruits and vegetables was affected by growing seasons and weather conditions. Others expressed dissatisfaction with the lack of quality foods available through the United States Department of Agriculture's Commodity Program. Limited availability was particularly cited among rural school representatives.

Student preference was also cited as a barrier by school representatives. One school reported low student interest in a breakfast program or a salad bar. Another school had difficulty meeting the Healthy Schools Program guideline of offering a weekly fish entrée because the students were accustomed to eating fresh fish at home, and processed or frozen fish held little appeal. An elementary school reported that offering the recommended number of fruit and vegetable options was challenging because the children had difficulty choosing from multiple options. In another district, the challenge was the perception held by food services staff that students would not be interested in healthy foods.

The most prevalent facilitators of change included policy changes and advocates within and external to the school community. A number of school representatives mentioned that the changes in school meals were precipitated by state legislation or district policy mandates. Some were also motivated by a desire to achieve the Alliance's Healthy Schools Program recognition. District food service directors were also mentioned as important catalysts for change. Administrators, teachers, school nurses, and counselors were also identified as active in changing school culture around food. Some schools successfully generated student support for healthier options. A few schools that had anticipated student resistance to change found that students were more supportive when they were included in the process of making changes in the foods and beverages offered. A few schools allocated funds for the cafeteria to engage students in sampling healthier foods 2 days per week. One interviewee commented, "The main challenges have come from my staff not expecting kids to like or go along with the changes. They perceive that kids won't like healthy things, but the kids are surprising them."

Most schools and districts had general plans to continue improving the nutritional quality of school meals. Some planned to eliminate trans-fats; introduce more whole-grain foods; offer a wider variety of fruits and vegetables; offer nonfat or 1% milk only; or reduce the availability of breaded meats, starchy vegetables, and pizza. Other plans in support of healthier school meals included training food services staff on food preparation techniques that reduce fat and sodium, implementing a breakfast program or increasing breakfast program participation, and promoting appreciation for fruits and vegetables among students.

Urban District 1

School representatives reported that changes to the school meals program had already begun to take place. Most of the elementary school cafeteria managers reported that the district had increased the availability of healthier foods such as low-fat cheese and meats, nonfried foods, and whole grains. The entrées available on the days of the baseline site visits included baked chicken, baked fish, low-fat cheese pizza with whole-wheat crust, corn dog nuggets, a chicken salad sandwich on whole-wheat bread, and a chicken fajita with peppers and tomatoes and a whole-wheat roll. Elementary cafeteria managers indicated that, because of budget constraints, they were able to offer fresh fruit only twice per week.

The quality and types of school lunch options varied greatly at the subsample middle schools. One middle school reported offering fresh hoagie sandwiches and chef's salads daily. One school offered a salad bar every day, but another school had eliminated its salad bar due to budget cuts. In lieu of the salad bar, chef's salads were available weekly and small green salads were available two to three times per week. Entrées available on the days of the baseline site visits included spaghetti with ground beef and marinara sauce; roasted chicken; a chicken sandwich on white or whole-wheat roll; chili con carne; macaroni and cheese; and cheeseburgers.

The subsample high school meals programs also varied greatly at baseline visit. One of the schools had two cafeterias, one of which was serving pizza or Cuban pork with black beans and rice as the reimbursable meal. The other cafeteria was serving

spaghetti and hamburgers. Another subsample high school served beef casserole with whole-wheat noodles as the reimbursable meal on the day of the site visit. Additionally, a variety of other options were available either as part of the reimbursable meal or through a fee-based à la carte line, including turkey, tuna, or chicken sandwiches; tuna or chicken salad on a green salad; pizzas prepared by a national fast food chain; and a hot dog or fish on a white bun.

Urban District 2

Descriptions and perceptions of the school meals program varied greatly among the school representatives who participated in the interviews and focus groups. Most respondents reported that their schools did not have kitchen facilities, and that breakfasts and lunches were prepared offsite, either at the district central kitchen or through an outside vendor. Those school representatives whose schools used an outside vendor reported healthier and fresher options than did those who received food from the central kitchen. One middle school respondent reported that her school refrained from serving the chocolate milk delivered by the district as a means to manage the caloric intake of their students. Of the subsample schools, only one middle school and one high school reported having kitchen facilities onsite. In both cases, school representatives reported that the meals were "greasy and unappealing." These school representatives went on to report that they believed that student participation in the breakfast and lunch program was low due to the quality of food. They cited requests to the district food service for healthier options that were not honored.

In addition to key school representatives, the district food service director was interviewed as a part of the site visit. She reported plans to improve the nutritional quality of the school meals programs in future years, including the incorporation of more whole grains, reduction of fried foods, and introduction of 1% milk. She cited the district's annual food supply bid process as a barrier to making changes quickly. She also indicated that the outside vendors who contracted to provide meals for some of the district schools charged more than the federal reimbursement for feeding kids, and speculated that the current vendors may not be selected in future years.

Competitive Foods and Beverages

Baseline data on competitive foods and beverages were collected through interviews, observations, and focus groups in all three cohort sites. Patterns and themes are reported below.

National Cohort

The majority of the middle and high schools had vending machines that were accessible to students, whereas only some elementary schools had vending machines that were accessible to students. Less than 3% of vending machine beverages accessible to students were carbonated. Also, less than 3% of the vending machines accessible to students contained candy or candy bars. Most vending machines were operational before, during and after school, with the exception of one middle school and one high school that had one or more beverage vending machines that were accessible to students only after

school hours. These machines, which were located near the schools' sports facilities, offered soda, iced tea, and water products.

Through observation, the site visitors documented a total of 328 different beverages available across the 21 subsample schools. The elementary schools offered 20 beverages, averaging 2.5 choices per school; the middle schools offered 92 beverages, averaging 13.3 choices per school; and the high schools offered 216 beverages, averaging 36.2 choices per school. Table 20 lists the types of beverages offered by school level. At both the subsample elementary and middle schools, 100% fruit juice was the most common type of beverage offered, whereas sports drinks were the most common type of beverages offered at the subsample high schools. Across all school levels, carbonated beverages accounted for only a small proportion of the beverages available.

The snack food vending machines accessible to students in the subsample schools offered 133 different food items. At the subsample elementary schools, no vending machines that sold food were accessible to students. The vending machines in the subsample middle schools offered 36 items, averaging 5.1 choices per school, and the subsample high schools offered 97 items, averaging 16.2 choices per school. Table 21 lists the types of foods available in vending machines by school level. The vending machines in the subsample middle schools did not offer candy. Of the items that were offered in middle school vending machines, 56% were chips, crackers, or pretzels, approximately half of which were reduced fat or baked or offered in 100-calorie packs. Thirty-nine percent of the items offered in the vending machines in the subsample high schools were chips, crackers, or pretzels, of which 8% were reduced fat or baked or

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offered in 100-calorie packs. Cookies and bars made up the second largest category

(32%) in high school vending machines, of which 3% were offered in 100-calorie packs.

TABLE 20. Vending Machine Beverages Available
at Baseline in National Cohort Schools

Vending Machine Beverage	School (%)		
	Elementary	Middle	High
Iced tea, diet	0	3	2
Iced tea, regular	0	3	2
Juice, 100%	50	37	12
Juice, less than 100%	25	3	20
Milk, flavored 1% or nonfat	0	0	1
Milk, unknown type or other dairy beverage	0	0	0
Soda, diet	0	10	2
Soda, regular	0	3	1
Sports drink, regular	0	10	44
Sports drink, light or low calorie	0	0	0
Water	25	20	8
Water, flavored	0	10	9

Note. Percentages may not sum to 100 due to rounding.

The subsample school representatives reported numerous efforts to improve the

nutritional quality of the competitive foods and beverages offered. These efforts included:

offering more whole-grain foods and a wider variety of fruits and vegetables; reducing the

availability of processed and high-fat, high-calorie foods, eliminating trans-fats and high-

sugar foods, and offering only 100% fruit juices and bottled water. Some schools had

renegotiated vending machine contracts to offer healthier foods and beverages, and others

removed vending machines altogether.

TABLE 21. Vending Machine Foods Available at Baseline in National Cohort Schools

	School (%)	
Category	Middle	High
Candy/candy bars	0	4
Cereal/granola/granola bars/ breakfast bars	11	0
Chips/crackers/pretzels	30	31
Chips/crackers/pretzels, baked or reduced fat	26	8
Cookies/bars	18	29
Cookies/bars, 100-calorie snack packs	4	3
Fruit candy	0	3
Fruit, packaged or fresh	0	2
Meat, packaged	0	6
Pastry	6	6
Popcorn	6	2
Seeds, nuts, trail mix	0	5

Note. Percentages may not sum to 100 due to rounding.

Despite these changes, school representatives reported that they struggled to improve the healthfulness of the foods served at fundraisers and school-sponsored events. And some school representatives shared that their principals persisted in offering students and staff foods and beverages that did not meet the Alliance competitive food and beverage guidelines. Key barriers to doing so were lack of control over the options because the vending machines were managed by the district or other outside entity, concern about revenue loss, and staff resistance.

Urban District 1

The availability and nutritional value of competitive foods and beverages sold on school grounds varied by school level and school site at baseline. At baseline, all subsample elementary schools offered a small number of competitive foods, and one elementary school offered competitive beverages. Competitive foods available in the elementary school cafeterias included multigrain chips, baked potato chips, and low-fat ice cream.

No competitive foods or beverages were available at one subsample middle school, but the remaining three middle schools offered varying types and amounts of competitive foods and beverages. One of the schools had two beverage vending machines and two food vending machines; another school had two beverage vending machines and a small variety of competitive food items, such as cookies and multigrain chips, available for purchase in the cafeteria. The beverage machines were most often stocked with water, 100% fruit juice, juice drinks, and sports drinks. The snack food machines were stocked with baked and regular chips, cookies, and toaster pastries. One of the three middle schools limited student access to vending machines by turning off their machines during the school day.

The two subsample high schools had an abundance of competitive food and beverage items available before, during and after school at the time of baseline site visits. One high school had 15 vending machines located around campus and the other high school had seven machines. A variety of beverage options were available, including full-calorie sports drinks, flavored water, 100% fruit juice, and water. Snack foods in the

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vending machines included baked and reduced-fat chips, granola bars, and low-fat ice cream bars.

Observations on what beverages and foods were sold in vending machines were also conducted (see Table 22 for more detail). On baseline site visit days, the subsample elementary school vending machine was stocked with sports drinks and water. The most common item available in the subsample middle school vending machines was less than 100% juice, and the most common beverage available in high school vending machines was 100% fruit juice.

TABLE 22. Vending Machine Beverages at Baseline in Urban District 1 Schools

Beverage	School (%)		
	Elementary	Middle	High
Iced tea, diet	0	0	0
Iced tea, regular	0	0	0
Juice, 100%	0	20	45
Juice, less than 100%	0	54	11
Milk, flavored 1% or nonfat	0	0	0
Milk, unknown type or other dairy beverage	0	0	0
Soda, diet	0	0	0
Soda, regular	0	0	0
Sports drink, regular	50	20	28
Sports drink, light or low calorie	0	0	0
Water	50	7	17
Water, flavored	0	0	0

Note. Percentages may not sum to 100 due to rounding.

At the time of the baseline site visits, an average of 38 different food items were available in middle school vending machines, and an average of 46 different food items were available in high school vending machines. The percentages of foods by category are reported in Table 23. The most common food items available in the middle school vending machines were reduced- or baked-fat chips, ice cream bars, or hard pretzels. The most common food items in the high school vending machines were regular chips and crackers.

TABLE 23. Vending Food Items at Baseline in Urban District 1 Schools

Food Category	School (%)	
	Middle	High
Candy bars	3	0
Chips/crackers	16	17
Chips/crackers/hard pretzels reduced fat or baked	18	17
Chips/crackers/pretzels: 100-calorie snack pack	0	0
Cookies/bars, packaged	18	11
Cookies/bars, 100 calorie snack packs	0	2
Dessert: cake, pie, donuts	5	7
Granola Bars	5	2
Nuts	2	2
Popcorn	5	2
Ice Cream Bars	21	37
Other	8	0

Note: Percentages may not sum to 100 due to rounding.

Urban District 2

There was great variance in the availability and nutritional value of competitive foods and beverages sold in subsample school vending machines. All elementary school representatives reported that they had no vending machines, nor did they sell any foods and beverages outside of the school meals program. Most of the subsample middle school and all of the high school representatives reported that competitive foods and beverages were sold on their campuses. In the cases where competitive foods were sold, the most common items cited as available were chips, crackers, cookies, and candy. In the cases where competitive beverages were sold, respondents reported that the options consisted of 100% fruit juice, water, and 1% flavored milk. The district food service director reported that all competitive food and beverage options were ordered through the district and made available to schools that hosted vending machines and school stores.

Observations on what beverages and foods were sold in vending machines in middle and high schools that sold competitive foods and beverages were also conducted during the baseline site visit (see Table 24 for more detail). On the days of the site visit, the most common beverage available in middle school vending machines was less than 100% fruit juice, and the most common beverage available in high school vending machines was water.

At the time of baseline observation, an average of 56 different food items were available in middle school vending machines, and an average of 39 different food items were available in high school vending machines. The percentages of foods by category are reported in Table 25. On the days of the observations, the most common food items

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TABLE 24. Vending Beverages at Baseline in Urban District 2 Schools

	School (%)	
Beverage	Middle	High
Iced tea/green tea	0	1
Juice 100%	18	31
Juice, less than 100%	55	0
Milk, unknown type or other dairy beverage	0	0
Soda, diet	0	1
Soda, regular	0	1
Sports or fitness drink	0	1
Water	27	60

TABLE 25. Vending Food Items at Baseline Available in Urban District 2 Schools

	School (%)	
Food Category	Middle	High
Cereal/breakfast bar (does not include granola bar)	2	0
Chips/crackers	23	36
Chips/crackers/hard pretzels reduced fat or baked	48	28
Chips/crackers/pretzels: 100-calorie snack pack	0	0
Cookies/bars, packaged	13	18
Cookies/bars, 100 calorie snack packs	2	0
Dessert: cake, pie, donuts	0	3
Granola Bars	5	5
Nuts	2	3
Popcorn	5	8
Other	0	0

available in the middle school vending machines were reduced- or baked-fat chips,
crackers, or hard pretzels. The most common food items in the high school vending
machines were regular chips and crackers.

Physical Activity Opportunities

Baseline data on physical activity opportunities were collected through interviews and focus groups in all three cohort sites. Patterns and themes are reported below.

National Cohort

The majority of subsample schools offered students physical activity opportunities before, during, or after school. The most commonly reported physical activity opportunities included recess, exercise or movement breaks, and extracurricular activities. Seven of the eight elementary schools offered recess, although at one school recess was offered only on the days that students did not participate in physical education. The length of recess ranged from 10 minutes to 50 minutes (broken into two 25-minute sessions). Two elementary schools offered structured recess and asked monitors to lead cooperative games to encourage activities. Although several of the elementary schools intended to offer physical activity breaks in the classroom, only two school representatives reported routinely doing so. Five elementary schools had either before- or after-school programs, described in the before- and after-school section to follow.

Approximately half of the middle school representatives reported offering physical activity breaks throughout the school day. All of the middle schools offered intramural sports after school, as described in the before- and after-school section of this chapter. Two high school representatives reported that their high schools provided physical activity breaks during the school day. Other physical activity opportunities at these high schools included opening the gymnasium at lunch time. Several high schools

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offered competitive and intramural sports after school, as described in the before- and after-school section of this chapter.

Challenges to providing physical activity opportunities included an emphasis on academics to the exclusion of other activities; a lack of funds for equipment and staff time to monitor activities; and, at one school, and a lack of support on the part of school administration. School representatives from schools that included physical activity breaks in the classroom pointed to a reduction in behavioral referrals as a positive reinforcement for teachers who were once recalcitrant about offering these breaks. Representatives from elementary schools with structured recess also mentioned improved student behavior as a facilitator for sustaining these recess activities.

Urban District 1

School representatives reported different physical activity opportunities offered to students based on school level. All of the elementary school representatives reported that their schools offered a 20-minute recess each day. Most of the subsample elementary schools offered additional physical activity opportunities in the forms of weekly walking events, physical activity breaks, or sports activities during the after-school program. All of the subsample middle schools offered either intramural or interscholastic sports after school. One high school offered interscholastic sports and one high school did not. The latter high school was a magnet school serving students from all over the city, and as a result, the school could not provide transportation for interscholastic sports. School representatives from the other high school reported high rates of participation in the wide

variety of interscholastic sports offered. Focus group respondents cited lack of transportation options and the cost of supervisory staff time as key barriers to offering physical activity opportunities before, during and after school.

Urban District 2

School representatives reported different physical activity opportunities offered to students based on school level. All of the elementary schools offered a 20-minute recess each day, and one of the elementary schools also offered yoga to kindergartners, and extended day activities, such as martial arts and ballet to their students. In all but one case, middle school representatives reported that physical activity opportunities outside of physical education were not available to students. The high school representatives also reported no physical activity offerings for students, with the exception of after-school sports open to those students who were strong enough athletes to make their competitive teams. Respondents cited lack of facilities and constraints on staff time as key barriers to offering physical activity opportunities to their students.

Physical Education

Baseline data on physical education programs were collected through interviews, observations, and focus groups in all three cohort sites. Patterns and themes are reported below.

National Cohort

The interviews, focus groups, and observations conducted on physical education revealed considerable variation in terms of the frequency of physical education classes, the number of physical education teachers, and the quality and size of physical education facilities. Five of the subsample elementary schools offered physical education two to three times per week for 30 to 35 minutes. Classroom teachers were responsible for delivering physical education at the five aforementioned schools. Two of the elementary schools offered physical education to all students 4 to 5 days per week for 30 minutes. Physical education at these schools was taught by certified physical educators. A school representative from a school with limited physical education reported that several staff at his school were not comfortable being physically active, and that as a result, physical education instruction was sporadic.

The elementary physical education class sizes ranged from seven to 30 students ($M = 17.1$) per school staff. Fifty percent of the elementary schools had gymnasiums, five schools had playing fields and playgrounds, four schools had basketball hoops, and two schools had climbing walls. A few school representatives mentioned that their equipment was run down, and they were concerned about safety when teaching physical education.

The majority of subsample middle schools reported that their students participated in physical education 2 to 3 days per week for 45 minutes each day throughout the school year. There were two exceptions: Physical education was an elective at one middle school; and another school required physical education for one semester per year. The middle school class sizes ranged from 10 students to 47 students ($M = 26.4$). All middle

school representatives reported that physical education was taught by certified physical educators. All of the subsample middle schools had a gym, and half of the subsample middle schools had an outdoor playing field or activity area.

Physical education delivery varied widely at the subsample high schools, but the commonality, as all of the high school representatives reported, was that their programs were designed to meet high school graduation requirements. The array of requirements were as follows: (a) Two subsample high schools required students to complete a half credit of physical education to graduate; (b) one high school required students to take a semester of physical education; (c) one high school required students to take three semesters of daily, 90-minute physical education classes; (d) one high school required ninth graders to take physical education 3 days per week: and (e) one high school required ninth and 10th graders to participate in a 50-minute physical education class daily.

School representatives reported that certified physical education teachers delivered physical education at all of the subsample high schools. The high school physical education class sizes ranged from eight to 43 students ($M = 22.2$) per school staff. All of the high schools had a gymnasium, track, and outdoor playing field. Several had additional facilities, such as basketball hoops, tennis courts, and weight rooms.

The site visitors observed 78 physical education classes at the 21 subsample schools.

The physical education classes observed ranged in length from 15 to 90 minutes, and averaged 43 minutes. Physical education classes were longest at the high school level, ranging from 40 minutes to 90 minutes, with a mean time of 52.3 minutes. Middle

school classes ranged from 30 minutes to 55 minutes, with a mean time of 43.7 minutes.
Elementary school classes were the shortest in duration, ranging from 15 minutes to 40
minutes, with an average of 33.6 minutes.

The observations revealed a great deal of variation in how students in subsample
schools spent physical education class time. Table 26 shows the average amount of time
students were engaged in various activities and the range among all of the physical
education classes observed. The site visitors estimated that an average of 64% of the
students participated in the majority of the moderate or vigorous activity that took place
in the physical education classes; the range was 11% to 100% of students. In most cases,
the majority of instructional time ($M = 71\%$) was spent on moderate to vigorous physical
activity, with the range being 17% to 95% of time. The second highest amount of time (M
$= 16\%$) observed was preparation for or waiting for a turn to do an activity, with the range
being no time to 67% of time. Physical educators spent an average of 9% and 8% of time
on lecture and instruction and low-level physical activity, respectively.

TABLE 26. Activities and Percent of Time Spent During
National Cohort Physical Education Classes

Percentage of class time students spent	%		
	M	Min	Max
Waiting or preparing	16	0	67
Listening to lecture or general instruction	9	0	80
Performing low level physical activity	8	0	25
Performing moderate or vigorous activity	71	17	95

Note. Percentages may not equal 100 due to rounding.

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School representatives and physical educators in subsample schools cited large class sizes, lack of equipment, and inadequate facilities as barriers to providing quality physical education. When probed further about the facilities, school representatives indicated that their facilities were too small to accommodate their class sizes, making it difficult to allow all students to actively participate for the duration of the class time, and some said that their facilities were very run down. Several factors limited the usefulness of these facilities. School representatives, particularly at the elementary school level, indicated that their schools had limited funding to purchase equipment, which created "monotony" in the types of activities that could be offered.

Urban District 1

School representatives reported varied times dedicated to physical education at all school levels. All elementary school representatives reported that their students attended physical education classes for 150 minutes per week. Two of the three subsample middle school representatives reported that physical education was taught an average of 225 minutes per week. Physical education was an elective at the other middle school. Students at the two subsample high schools were all required to take one semester of physical education and one semester of personal fitness, though the delivery of instruction varied at each school. One high school required a full year of physical education at the 11th-grade level. One high school delivered three 110-minute classes of physical education each week. In that school, school representatives reported that students often spent significant portions of physical education time waiting to be active because of

overcrowding. Students at the other high school attended a 90-minute physical education class daily during the year they took physical education. Facilities at this school included a large gymnasium, weight room, and fitness room with stationary bikes and treadmills, a climbing wall, and other equipment. Students taking the personal fitness class were challenged to use stationary bicycles or treadmills to "walk to Cuba"—a distance of 100 miles—by the end of the class. Students also reportedly completed individual health assessments at the beginning and end of the class.

Site visitors observed 13 physical education classes at eight subsample schools. The observations spanned across school levels. On average, the classes observed were comprised of a ratio of 25 students to 1.5 teachers and aides (ranging from eight to 43 and one to four, respectively). The physical education classes observed ranged in length from 30 to 110 minutes, and averaged 68 minutes. Site visitors also collected information on how students spent physical education class time. Table 27 shows the average percentage of class time students were engaged in various activities. The site visitors estimated that an average of 84% of the students participated in the majority of the moderate or vigorous activity that took place in the physical education classes, ranging from 5% to 100% of students. In most cases, the majority of instructional time ($M = 40\%$) was spent on waiting and preparing to be active, with the range being 17% to 75% of time. The second highest amount of time ($M = 33\%$) observed was spent on performing low-level physical activity, with the range being from 15% to 61% of time. Physical educators spent an average of 8% and 19% of time on lecture and instruction and moderate to vigorous physical activity, respectively.

TABLE 27. Activities and Percentage of Time Spent During
Urban District 1 Physical Education Classes

Percent of class time students spent	M	Min	Max
Waiting or preparing	40	17	75
Listening to lecture or general instruction	8	0	18
Performing low level physical activity	33	15	61
Performing moderate or vigorous activity	19	0	39

Note. Percentages may not equal 100 due to rounding.

Urban District 2

School representatives reported varied times dedicated to physical education at all school levels. The majority of elementary school representatives reported that their students attended physical education classes for 45 minutes once per week, with the exception of one school in which kindergartners participated in physical education three times per week for 45 minutes. All middle school respondents reported that physical education was an elective course, but that most students took it for at least one quarter every year. In one middle school, physical education and health education were combined into one elective course. Respondents reported that physical education requirements in the subsample high schools also varied. One high school required a full year of physical education at the 11th-grade level. One required that both ninth and 10th graders take a half year of physical education, and one required that 10th graders take a combined health and physical education course for one semester. No physical education electives were offered in the subsample high schools.

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Respondents also noted that their schools were not meeting district physical education requirements. There was general recognition among respondents that these requirements were not monitored or enforced and that as a result, their administrators were not taking action to remedy the situation. School representatives reported staffing and space constraints as the prevailing barriers to offering more frequent physical education. Several school representatives, especially from elementary and middle schools, shared that their schools did not have formal gyms or playing fields, making physical education space a challenge. The majority of representatives at all school levels cited staffing capacity as a key barrier to more frequent physical education.

Site visitors observed one to two physical education classes at every subsample elementary and middle school. Observations at the high schools were not possible because there were no physical education courses in session on the day of the baseline site visit. Classes at the elementary and middle school levels had, on average, a little over one instructor per class. At the elementary school level, there were an average of 18 students in the physical education classes. Middle school physical education classes averaged 22 students. Elementary physical education classes lasted for an average of 45 minutes, and middle school physical education classes lasted an average of 67 minutes.

Site visitors also collected information on how students spent physical education class time. Table 28 shows the average percentage of class time students were engaged in various activities observed by school level. At the elementary school level, the percentage of class time spent waiting or preparing to do activities ranged from 0% to 42% of class time. The percentage of class time that elementary school students spent listening to

TABLE 28. Activities and Percentage of Time Spent During
Urban District 2 Physical Education Classes

Percent of class time students spent	Elementary School		Middle School	
	M (%)	SD	M (%)	SD
Waiting or preparing	17	14.3	21	17.3
Listening to lecture or general instruction	18	11.3	6	9.0
Performing low level physical activity	34	28.7	12	4.0
Performing moderate or vigorous activity	31	17.5	46	3.1

Note. Percentages may not equal 100 due to rounding.

lectures or general instruction ranged from 11% to 40%. The percentage of class time that

elementary school students spent performing low-level physical activity ranged from 0%

to 69%. The percentage of class time that elementary school students spent performing

moderate or vigorous activity ranged from 0% to 49%. Site visitors also estimated the

percentage of students who participated in the majority of the moderate to vigorous

activities offered during class. Virtually all of the elementary school students were active

participants in these activities.

At the middle school level, the time spent waiting or preparing ranged from 2% to

36% of class time. Middle school students spent from 0% to 17% of their physical

education time listening to lectures or general instructions. At the middle school level, the

percentage of class time spent performing low-level physical activity ranged from 8% to

16%. At the middle school level, the percentage of class time that students spent

performing moderate or vigorous activity ranged from 44% to 50%. Site visitors reported

that all of the middle school students participated in the majority of the moderate to

vigorous activities offered during physical education classes.

Health Education

Baseline data on health education programs were collected through interviews and focus groups in all three cohort sites. Patterns and themes are reported below.

National Cohort

The quantity and mode of health education delivery varied greatly among subsample schools. However, there were some trends by school level. For example, all of the elementary schools, except for one, reported that they integrated health information into other curricular areas, whereas all of the high schools offered stand-alone health education classes. At the elementary and middle school levels, health education was generally taught by a classroom teacher, nurse, or physical educator, whereas in the majority of the high schools health education was taught by a certified health educator. Approximately half of the middle schools and all of the high schools reported using a formal, published health education curriculum. Elementary school representatives reported that classroom teachers used outside speakers or developed their own health education content.

Most school representatives were satisfied with the quality of the health education provided, but they expressed dissatisfaction with the frequency and variety of the offerings. One representative commented that "I would like more opportunity for students to have courses in lifelong health, ways to be healthy and handle stress, learn ways to be engaged physically throughout life, healthy lifestyle, diet, blood pressure, etc." School representatives mentioned several issues that negatively impacted the quantity and quality

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of health education. A few expressed disappointment that their school did not have a designated health education teacher who was truly knowledgeable about the topic. Some were concerned about the large size of health classes. Other school representatives personally objected to providing health education at the expense of physical education. Reductions in overall education funding reportedly impacted health education in terms of both staffing and offerings. For example, one school's stand-alone health education classes were discontinued due to budget cuts, and health topics were incorporated into physical education classes. School representatives reported that decisions regarding health education offerings were generally made at the district level. Another challenge was competing priorities at the state, district, and school levels. Efforts to increase student achievement in reading and mathematics often resulted in students being pulled from health education classes for remediation or testing.

A committed school wellness council or individual advocate at the school or district level was the most commonly cited as the catalyst of efforts to improve health education. "The commitment and passion of the Healthy Schools Program contact is the driving force behind changes that have been made," observed one school representative. State health education mandates were credited with prompting improvements by representatives of a school that was located in a state with a governor who was a staunch proponent of health and physical education.

Urban District 1

Quality and quantity of health education varied greatly across subsample schools. None of the subsample elementary schools had a stand-alone health education class or used a formal curriculum. In general, the schools integrated health-related topics into other classroom subjects. At one school, the school representative periodically taught students at all grade levels about health, nutrition, hygiene, and bullying. All middle school respondents indicated that health education was taught in various forms and at different frequencies. At one subsample middle school, the physical education teacher taught health education to sixth-grade students during the first 45 minutes of physical education class. At another subsample middle school, science teachers taught a 9-week health education unit during science class, and students received information about nutrition in their physical education classes. Students participated in a 3-week health education unit at the beginning of the school year in their physical education class in another middle school. School representatives reported that a formal curriculum was not used for health education at the middle school level. Neither of the subsample high schools required health education. School representatives reported that in one case, health education was a component of driver's education, and that in the other, health education topics were periodically integrated into physical education.

Urban District 2

Quality and quantity of health education varied across subsample schools. All of the elementary school representatives reported that there were no certified health

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educators in their buildings, and that there was not a stand-alone health education curriculum. Elementary school representatives reported a range of health education activity in their schools, including (a) no instruction at all, (b) weekly lessons at the fourth- and fifth-grade levels, and (c) instruction at the sixth-grade level only. Middle school representatives indicated that health education was either an elective or integrated into physical education classes. They also reported that their schools had at least one certified health educator in their building.

All subsample high schools offered at least one quarter of health education, which met the district graduation requirement. One high school offered a second quarter of health education, in which the majority of their students reportedly enrolled. High school representatives indicated that all health education courses were taught by certified health educators. However, one high school representative indicated their two health educators were due to retire at the end of the school year, and that their school administrator did not intend to replace them. The most commonly cited barriers to offering more health education were staff comfort and qualifications with the information and competing demands for class time.

Before and After-School Programs

Baseline data on before- and after-school programs were collected through interviews and focus groups in all three cohort sites. Patterns and themes are reported below.

National Cohort

Principals and school representatives from subsample schools were also asked about the incorporation of healthy food options and physical activity into before- and after-school programs. Five elementary schools offered either before- or after-school programs that provided physical activity opportunities, and one elementary school offered open gymnasium sessions before school, as well as wrestling, volleyball, dance, and basketball after school.

All subsample middle schools offered intramural sports such as basketball, football, baseball, and volleyball after school. One middle school also had an outdoor program that provided students the opportunity to take part in activities, such as hiking. Four of the six high schools offered intramural or intermural sports. One high school that did not have extracurricular sports opened the gymnasium to students before and after school, and during lunch.

Several subsample schools did not offer formal before- and after-school programs, but chose to open their facilities for physical activity opportunities. Cited challenges to providing these physical activity opportunities were a lack of funds for staff time to monitor activities and a lack of district support. Several school representatives shared that they or their colleagues volunteered their time to supervise or run after-school intramurals. They pointed to this volunteerism as well as the ability to open facilities as the levers for before- and after-school opportunities.

Urban District 1

Formal after-school programs were offered only at the elementary school level. School representatives reported that all elementary school after-school programs had a physical activity component. As described in the physical activity section, the majority of middle and high schools offered intramural and interscholastic sports, but they were not tied to a formal after-school program. School representatives who were interviewed were not familiar with the after-school program snack options, as these programs were run by an external organization.

Urban District 2

After-school programs were offered at all of the subsample middle and high schools, but none of the elementary schools. Middle school representatives reported that their schools' after-school programs dedicated 1 of 3 hours to physical activity opportunities, such as dance, yoga, or martial arts. Middle school representatives were not able to speak to the quality of after-school snacks because the after-school programs were provided by an external organization with which there was not strong coordination. High school representatives reported that their schools opened their gym facilities and fields to kids for intramural basketball, dance, weight training and yoga. Though there was a faculty advisor for each of these activities, these were not a part of a formal after-school program. After-school snacks were not served to high school students who participated in the aforementioned opportunities.

School Employee Wellness

Baseline data on school employee wellness programs were collected through interviews and focus groups in all three cohort sites. Patterns and themes are reported below.

National Cohort

Most of the subsample schools reported implementing school employee wellness activities. Some schools utilized surveys and health assessments to identify needs and plan wellness efforts. Employees at these schools had the opportunity to participate in a variety of health and wellness activities, including a statewide exercise and weight loss initiative, a walking competition, a weight loss competition (modeled after the television show *The Biggest Loser*), a healthy breakfast challenge, and a health fair for employees. In one district, employees involved in a weight loss program reportedly lost a combined total of 350 pounds during one school year. In addition, many schools reportedly created exercise opportunities for employees on school grounds, including instructor-led exercise classes, walking programs, open gymnasium time, and organized sports, such as volleyball, basketball, and softball. Some school representatives reported that their school or district subsidized gym memberships for employees, and others provided exercise equipment and facilities for employee use on school grounds.

Many school representatives reported efforts to improve the nutritional quality of the food served to employees in meetings and the cafeteria (adding a salad bar was a common approach), and some schools reportedly offered more healthy food and beverage

options in the vending machines accessible to employees. Schools also reported

disseminating information on a variety of health-related topics and offering employee

health screenings and vaccinations. Schools reportedly used a variety of media to

publicize these employee wellness opportunities, including e-mail, newsletters, flyers,

bulletin boards, meetings, and word of mouth.

According to school representatives, many of the challenges to implementing

employee wellness activities were directly related to the employees themselves. Several

school representatives reported that employee participation and engagement in wellness

activities was low. The lack of participation was often attributed to time constraints.

"Getting staff involved is hard because they don't have enough time and are too tired,"

commented one teacher. Turnover among employees also negatively impacted wellness

activities at some schools. Other common challenges pertained to limited resources. A

lack of funds to purchase exercise equipment for employee use was often cited as a

barrier to offering on-site exercise opportunities for staff. A lack of space for exercise

equipment was another barrier. For example, the employee exercise room at one school

was well equipped but poorly ventilated and cramped.

School representatives reported factors at both the school and district levels that

facilitated efforts to support employee wellness. At the school level, a committed school

wellness committee or individual who advocated for employee wellness activities was

cited as a facilitator. At the district level, support provided by a wellness committee, a

wellness coordinator, or a food services manager was identified as helpful. One school

district, for example, hired a full-time wellness coordinator to develop, implement, and

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evaluate a district-wide employee wellness program. Another district budgeted $2,000 annually for employee wellness activities. Many school representatives indicated the intention to continue efforts to support employee wellness. Some had already formulated specific ideas, whereas others were still in the planning stage.

Urban District 1

All of the subsample schools either had some employee wellness activities underway, or were planning to launch school employee wellness activities in the near future. All elementary school representatives indicated that their schools' employee wellness activities were underway. Available activities included belly dancing classes, walking programs, and Weight Watchers at Work groups. Three subsample elementary schools had switched to providing healthier snacks and beverages during staff events. One elementary school launched a Caught Eating Healthy campaign that resulted in photos of staff eating healthier foods being posted on the school bulletin board in order to model positive health behavior to their students.

School representatives from three subsample middle schools reported employee wellness activities were underway. One subsample middle school reported holding a *Biggest Loser* competition that staff planned to transform into a "more positively framed" fitness challenge during the following school year. The physical education teacher at this school had committed to help staff members develop personal fitness and nutrition plans for the fitness challenge. At another middle school, staff reportedly tracked their physical activity each month and those who logged the most activity received incentives, such as

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pedometers, water bottles, and gift certificates for their efforts. This school also planned to hire a trainer to teach staff to use the equipment in the school's weight room. Another middle school had formed a staff walking club, and another school was in the process of purchasing workout equipment for staff exercise classes.

At the time of the baseline site visit, one high school representative indicated that his wellness council was planning to launch an employee wellness program the following school year that would include exercise classes led by teachers, healthy cooking classes led by the culinary arts teacher, and guest speakers who would address various health topics of interest. The other high school had already conducted a staff weight loss challenge, and healthier foods were being provided at faculty meetings. The school representative from this high school also planned to start a monthly health newsletter for staff.

Urban District 2

School representatives reported that employee wellness programs were being planned for the next school year, or in one case, in early stages of implementation. Most of the planned activities were fitness-related, such as developing a staff fitness room, starting walking groups, or yoga classes. One school had already started a staff walking club and had decorated the stairwells in order to encourage the use of the stairs. School representatives indicated that their colleagues were enthusiastic about the prospect of school employee wellness efforts. Because most of the activities were in the planning

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stages, school representatives did not cite specific barriers, though they did express concern about sustainability of activities with no formal staffing capacity.

Follow-Up Site Visit Results

Interviews, observations, and focus groups were conducted in each of the cohorts using the procedures described earlier in the Methodology section (Chapter III). Like baseline results, follow-up results are reported for the following domains: (a) school health policy, infrastructure and systems development; (b) school nutrition programs; (c) competitive foods and beverages sold outside of the school meals programs; (d) physical activity opportunities before, during, and after school; (e) physical education programs; (f) health education programs; and (g) school employee wellness programs. Follow-up results report the policy and program differences found between the baseline and follow-up visits, and also present themes and patterns related to facilitators and barriers to change.

Policy and Systems

Follow-up data on school health policy and systems were collected through interviews and focus groups in all three cohort sites. In all cases, a policy audit was also conducted. Patterns and themes, as well as key differences in policy and program outcomes between baseline and follow-up visit, are reported below.

National Cohort

A follow-up policy audit of the wellness policies in the eight districts from which the subsample schools were drawn revealed no formal changes to these policies between baseline and follow-up visits. When school and district representatives were asked if any policy changes had occurred since the initial visits, they confirmed that there had been none. One district representative reported that the county's School Health Advisory Committee, which served as the steering committee for the development of the district wellness policy, had reviewed the policy annually but had not made any changes.

At the time of the baseline site visits, 19 of the 21 subsample schools had convened a school wellness council that met regularly. At the time of the follow-up site visits, a school wellness council continued to function in 13 schools. In two other cases, a school site council had assumed responsibility for wellness efforts, and reportedly, wellness continued to be a primary focus for the school. Representatives of schools that did not have a school wellness council at the time of the follow-up visit cited a variety of reasons. One high school had ceased its participation in the Healthy Schools Program, and one school had a new administrator who had made school wellness a low priority. Time constraints overwhelmed another school wellness council, and one middle school's wellness council had reportedly disbanded shortly after the baseline site visit due a move to a different building with new staff and a new principal.

Urban District 1

At baseline, Urban District 1 had adopted a school wellness policy in accordance with the Child Nutrition and WIC Reauthorization Act of 2004. At the time of the follow-up site visit, a policy audit indicated 2010 revisions to the district wellness policy that required all of its schools to (a) maintain a school-based wellness council, (b) use the Healthy Schools Program Inventory to annually assess wellness-related policies and program implementation, (c) identify school wellness goals and develop an annual action plan, and (d) sell only foods that meet the Alliance competitive food and beverage guidelines on school grounds. Additionally, district physical education requirements remained the same as those that were reported in the baseline site visit results.

At the time of the baseline site visits, all subsample schools reported having a school wellness council, and all school representatives reported that their schools had maintained their school wellness councils at the time of the follow-up visits. All school representatives credited the school wellness councils as the implementation arm of health-related policy and program changes in their schools. A few elementary school representatives shared that they had expanded their councils to include community members, and that as a result, they were tapping many external resources. High school representatives mentioned the positive impact of having students on their councils. However, several school representatives reported that their wellness councils were meeting less frequently and included fewer or less engaged members than at the time of the baseline site visits. School representatives cited workload and staff turnover as the prevailing barriers for the reduced effectiveness of the school wellness councils.

Urban District 2

At the time of the baseline site visits, Urban District 2 had adopted a school wellness policy in accordance with the Child Nutrition and WIC Reauthorization Act of 2004, mandating changes in policy, curriculum, and operating procedures to promote healthy lifestyles and appropriate nutritional and physical fitness practices for all students. A follow-up policy audit revealed that revisions to the district wellness policy were made in 2010 that required all district schools to take several actions, including (a) development and maintenance of a school-based wellness council, (b) annual school-level assessment of wellness-related policies and program implementation, (c) identification of school wellness goals and an accompanying action plan, (d) standards-based health education instruction, and (e) standards-based physical education instruction and at least 90 hours of instruction per school year.

At the time of the initial site visits, most subsample schools were in the process of forming a school wellness council. All school representatives reported that their schools had formed a school wellness council between baseline and follow-up site visits. At the time of the follow-up site visit, six school representatives reported that their schools had sustained their wellness councils. Neither of the middle schools had a school wellness council at the time of the follow-up site visit. One middle school had transitioned to a K-8 school, and because of increased workloads, staff reportedly no longer felt they had time to participate in a school wellness council. The school wellness council had also disbanded at one high school.

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School representatives cited workload and staff turnover as the prevailing reasons for the disintegration of the school wellness councils. School representatives from the six schools with active wellness councils cited administrative support and, in some cases, stipends as the reasons for sustained school wellness councils. Several of these representatives acknowledged that they took on most of the burden for the meetings and action plan implementation.

School Meals Programs

Follow-up data on school nutrition programs were collected through interviews and focus groups in all three cohort sites. Patterns and themes, as well as key differences in policy and program outcomes between baseline and follow-up visit, are reported below.

National Cohort

During follow-up interviews, school and district representatives reported making a variety of changes since baseline site visits to improve the nutritional quality of school meals. Decisions about school meals were usually made at the district level, although schools in some districts were able to provide feedback. For the most part, subsample schools were able to sustain changes that had occurred at the time of the baseline visit, and many schools had made additional changes by the time of the follow-up visit.

Many school representatives reported that their cafeterias had (a) reduced the trans-fat or fat content of foods by substituting turkey for beef and pork, (b) switched to

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reduced-fat cheese, (c) decreased the serving size of French fries, and (d) changed food preparation methods to reduce fat. Many schools reportedly increased the number of whole-grain foods available to students and also increased the variety of fruits and vegetables available. Several schools added a daily salad bar or entrée salads as meal options. Nine schools limited milk options to 1% or skim milk. Of these nine schools, one middle school served only unflavored milk and one elementary school limited flavored milk to one day per week. A few schools cited eliminating or limiting foods of minimal nutritional value or high in sugar, and adding a weekly nonfried fish entrée. In addition to these improvements, schools in four districts reported cooking more meals from scratch or increasing the proportion of meals cooked from scratch to better control the sodium and fat content of foods. Four districts reported participating in state or federal programs to increase the quality and quantity of seasonal fresh produce offered at schools, such as local-farm-to-school programs.

Improvement and maintenance of change was not universal. One district that had offered students two fruits and two vegetables daily at the time of the initial site visit was offering only one fruit and one vegetable daily at the time of the follow-up visit due to budget cuts. One school shifted its strategy for providing more fruits and vegetables. After the initial site visit, one high school discontinued its salad bar due to lack of student interest and replaced it with a fruit and vegetable bar that included at least one choice of prepared salads in both entrée and side sizes. This appeared to be a shift in approach to encourage fruit and vegetable consumption to accommodate student response to the salad bar.

Since the baseline site visit, the majority of subsample school representatives reported that their schools had introduced cafeteria practices designed to bolster student acceptance of healthier foods. The most commonly reported practices included gradually transitioning to healthier options; conducting taste tests to encourage students to try new, healthy items; and encouraging students to select fruits and vegetables with reimbursable meals. Two schools attempted to influence students' eating habits by limiting the number of desserts students could purchase and enforcing a policy restricting à la carte snack purchases to the last 10 minutes of the lunch hour. Another district reported offering healthy items at a lower price than unhealthy à la carte snacks, despite the risk of losing profit. Two schools offered incentives to elementary school students who ate the fruits and vegetables served with school meals.

School representatives also reported the introduction of activities that fostered student and parent involvement in creating a healthy food culture in the school and community. One district food service director included student representatives in the district menu-planning process. Many schools disseminated healthy eating tips, healthy recipes, and information about changes to improve school meal offerings by mail or at Parent Teacher Association meetings. Some schools developed programs that encouraged healthy eating at home. For example, one school provided students with a fruit to take home and share with their families each week, and implemented an annual farmers market where students were invited to select 10 fruits or vegetables to share with their families. At another school, students and parent volunteers planned and conducted weekly taste tests.

School and district representatives reported numerous challenges to improving the quality of school meals. Most reported that the high cost of fresh fruits, vegetables, and other healthy foods, particularly in comparison to the cost of processed foods, was still an obstacle to serving healthier meals. Specifically, fresh fruits and vegetables and whole-grain breads were reported to be more costly than canned produce and white breads. One district food service director reported that the high cost of nonfried foods was an "insurmountable barrier" to meeting Alliance Healthy Schools Program standards for sodium and fat. She maintained that in order to meet the criteria, staff would need to serve virtually the same meal every day, risking a decrease in student participation in the school meals program. Another district replaced low-fat cheese with beans as its primary, low-cost source of protein to meet the Healthy Schools Program criterion for sodium, and cafeteria staff consequently had to contend with students' dislike of beans. Two districts expressed a desire to offer more meals made from scratch but lacked the resources to do so.

Another widely reported challenge to improving school meals was the limited availability of healthy food items in the school foods marketplace. In some cases, the availability of local and high quality fresh fruits and vegetables was affected by growing seasons and weather conditions. In other cases, the challenge lay with the food vendors. Two district food service directors reported that although they were able to obtain some whole-grain bread items, their food vendors offered only white bread for certain items such as rolls or buns. Another district food service director had difficulty locating a

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vendor that offered portions of certain items—e.g., strawberry-flavored milk—small enough to meet the Healthy Schools Program criteria.

The challenge of student preferences was cited by all but one school representative. Menu planning was described by one district food service director as "a balancing act that involves offering both healthy foods and foods that students will eat." Most district staff reported a perception that students prefer less healthy foods, and several cited as evidence the fact that reimbursable meal sales decrease on days when healthier meals are served and increase on days when student favorites, such as pizza and hamburgers, are served. For example, one cafeteria manager reported losing approximately $100 in daily sales as a result of switching from fried to baked French fries. School representatives from three districts attributed students' preference for the high-carbohydrate, high-fat foods traditionally offered to students' reluctance to accept change. "Once the students see a different color in the bread, they know something's changed," remarked one district food service director, "so you've got to gradually bring it in." In contrast, one district reported that students were used to eating fresh fish and did not like the taste of the processed, frozen fish products available through the food vendor.

School and district representatives reported a variety of other challenges to improving school meals. Time, staff, and space constraints precluded the preparation of more meals from scratch. Two district food service directors mentioned difficulties collecting the necessary paperwork from students eligible for free or reduced-price meals, resulting in low School Breakfast Program and National School Lunch Program participation. One interviewee believed that the stigma "extends beyond the students to

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parents who do not want to admit that they need help." Additionally, a few school representatives encountered district-level resistance to their efforts to serve healthier foods and beverages, although in most cases district-level staff were cited as a driving force for change.

State policy changes, as well as the Alliance's Healthy Schools Program criteria, were credited as drivers for change. Advocates of healthy eating at the school and district levels were important catalysts for change. The district food service director often assumed this role, but administrators, teachers, nurses, and counselors were also reportedly active in changing the food culture, influencing staff, students, and parents. School representatives from four districts mentioned federal or state programs—e.g., the Farm to School Network and the Department of Defense Fresh Fruit and Vegetable Program—as instrumental in accessing healthier options. Partnerships with local produce companies and farmers, which allowed schools to offer more fresh organic produce, were reported by at least two district food service directors. Additional districts or schools might have participated in such federal, state, or local programs, but school representatives who participated in the site visit interviews and focus groups did not always have specific information about program participation.

Most school and district representatives indicated that they had general plans to continue improving the nutritional quality of school meals. These plans included training food service staff on food preparation techniques that reduce fat and sodium, implementing breakfast programs, increasing breakfast program participation, promoting

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appreciation for fruits and vegetables among students, and initiating parent nutrition education efforts.

Urban District 1

School representatives reported that changes to the school meals program had continued to take place since the baseline visit. All of the elementary school cafeteria managers reported that they now served a salad option and fresh fruits and vegetables on a daily basis. Other commonly cited changes at the elementary level were the introduction of brown rice, the elimination of desserts, and a reduction in fried food options. Elementary cafeteria managers also discussed the use of taste testing with students as a means of finding healthy options that their students would eat. One cafeteria manager indicated that lunch participation had greatly increased among students who were not eligible for free or reduced lunch.

The quality and types of school lunch options had seemingly declined at the middle school level. At the time of the follow-up visit, all middle schools had eliminated their salad bars due to budget cuts or lack of student interest. Middle school cafeteria managers did report that they had increased fresh fruit options from a "few" times per week to every day. Entrées available on the days of the follow-up site visits included black beans and rice, a chicken sandwich on white or whole-wheat roll, and a chef's salad. As a result of the district changing its menus, the subsample high schools were reportedly offering healthier items at follow-up visit than at the time of the baseline site visits. Cafeteria managers reported changes such as the introduction of leaner meats,

darker greens in salads, and more whole grains into school meals options. These managers also shared that they had reduced sugar-sweetened options for students, often serving fruits as a dessert instead of baked goods. Cafeteria managers marketed healthier options through posters, ensuring their food lines looked "colorful," and enlisting other staff to push healthier items.

School representatives cited changes in the district menu and food supply as facilitators to offering healthier options for kids. Several cafeteria managers also shared that the overall emphasis on health in their buildings made it easier for them to enlist staff to help promote fruits and vegetables, as well as other healthier options. Staffing costs served as a barrier at the middle school level to maintaining daily salad bars.

Urban District 2

At the time of the follow-up visit, six schools did not have kitchen facilities and still relied on the district's contracted food services provider to supply breakfast and lunch. However, the outside vendor had changed since the baseline site visit. Healthy Schools Program criteria were reportedly used to set the standards for meals in the bidding process. Due to a move to another school building, one elementary school gained kitchen facilities by the time of the follow-up site visit. The other schools had full kitchens and most of the food was prepared on site, although the district's food services department planned the menus.

School representatives reported improvements in the school meals since the initial visits. They cited changes, such as offering more fresh fruits and vegetables; serving more

non-fried food items, lean meats, and whole-grain products; using oil without trans-fats; and serving only skim and 1% milk. In addition, four school representatives reported participating in the district's Farm to School Program, through which the school received fresh, local fruits and vegetables. However, some school representatives reported being dissatisfied with the quality of the school meals. Specific concerns were the lack of lean protein options that were palatable to students and the infrequency of a fruit option at breakfast and lunch.

When asked what they believed to be facilitators and barriers to serving healthier meals, school representatives mentioned positive parent and staff response; cafeteria staff engagement in the school wellness council; student acceptance; and administrator support as facilitators of change. Respondents perceived the barriers to be lack of training among cafeteria staff, student attitudes, and the district.

A follow-up interview with the district food service director revealed that several district-level practices had been changed since the initial site visit. Specifically, she pointed to the inclusion of more fruits and vegetables in the menu, introduction of nonfat or low-fat cheeses for entrées, and the replacement of French fries with baked fries. She also discussed the facilitators and barriers to change from the district perspective. She identified the cost of healthier products, complexity of preparation, and staff training as barriers to making meals healthier.

Competitive Foods and Beverages

Follow-up data on competitive foods and beverages sold in schools were collected through interviews, observations, and focus groups in all three cohort sites. Specifically, district food service directors, cafeteria managers, and school representatives were interviewed about the schools' competitive food and beverage offerings. Observational data on the contents of the vending machines accessible to students were also collected. Patterns and themes, as well as key differences in policy and program outcomes between baseline and follow-up visits, are reported below.

National Cohort

School representatives reported several efforts to improve the nutritional quality of the competitive foods and beverages sold in their schools between baseline and follow-up visits. At baseline, two districts had reported renegotiating their vending machine contracts to incorporate healthier food and beverage items into vending machines accessible to students, and both districts had sustained this change at the time of the follow-up visit. The food service director in one of these districts reported that the changes included offering one-ounce cookies, low-fat ice cream, and baked and low-fat chips. Changes to competitive beverage items included offering only 100% fruit juice, water, and flavored water at the middle school level, and only diet soda, 100% fruit juice, water, and flavored water at the high school level. No vending machines were accessible to students at any of the subsample elementary schools at the time of the follow-up site visits. At baseline, the food service director in the other district that reported a

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renegotiated contract allowed only water, sports drinks, and 100% fruit juice in the beverage vending machines accessible to students. At the time of the follow-up visit, this district had recently contracted with a new vendor that had been instructed by the food service director to stock all student-accessible food and beverage vending machines exclusively with items that met the Alliance competitive food and beverage guidelines. The district food service director and school administrators reportedly monitored the student-accessible vending machines to ensure that the items available were in compliance with these guidelines.

Several other school representatives reportedly made changes since the baseline site visits. Two schools and three districts implemented policies restricting the sale or distribution of competitive foods on campus. For example, at the time of the follow-up site visit, one district allowed only after-school sales of competitive foods on campus. This district had also eliminated the sale of à la carte foods and carbonated beverages on all school campuses since the baseline site visit. At another subsample high school, the Healthy Schools Program representative had reportedly worked with his vendor to ensure that all items in the student-accessible vending machines were in compliance with Alliance competitive food and beverage guidelines. When the vendor could not offer enough items to fill the two existing vending machines, the school representative reported obtaining permission from the school principal to have one of the machines removed.

Schools and districts reported using a variety of strategies to encourage the consumption of healthy snacks at school. For example, one district reportedly provided healthy snacks prepared by district food service staff for classroom parties, such as yogurt

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parfaits, fresh fruit, and vegetables with low-fat dips. Elementary school representatives from another district distributed healthy food suggestions to parents for classroom parties via newsletters and presentations at PTA meetings. One middle school reportedly implemented a pricing strategy whereby healthy competitive foods (e.g., fruit snacks) cost less than unhealthy competitive foods (e.g., cookies), and one high school representative provided students with healthy snacks before final exams and at the end of academic quarters. In addition, one district appointed a district food service staff member to ensure all that incoming competitive food requisitions met Alliance guidelines prior to approval. In another school, a school representative reported appointing their middle school's bookkeeper to vet competitive food requisitions for compliance.

The site visitors also collected observational data on the competitive foods and beverages available to students through vending machines in all subsample schools. At the time of the follow-up site visits, no elementary school students could access any vending machines in the subsample elementary schools. There was a beverage vending machine in one subsample elementary school at the time of the baseline visit. The majority of the middle and high schools continued to make vending machines accessible to students at the time of the follow-up site visits. Beverage vending machines were more common than food-vending machines in subsample middle and high schools. Table 29 lists the types of beverages available in student-accessible vending machines during baseline and follow-up site visits. The table shows the percentage of each type of beverage available by school level at the time of baseline and follow-up visits. At the time of the follow-up site visit, no beverages were available to elementary school students

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in subsample schools. The most common beverage available to middle school students was less than 100% fruit juices. The most common beverage available to high school students remained regular sports drinks, though the overall percentage of these drinks had declined from 44% to 24% between baseline and follow-up site visits. Across all school levels, carbonated beverages accounted for only 7% of the beverages available at the time of the follow-up site visits.

TABLE 29. Vending Machine Beverages at Baseline
and Follow-Up in the National Cohort

| | School (%) | | | | | |
| | Elementary | | Middle | | High | |
Beverage	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Iced tea, diet	0	0	3	3	2	1
Iced tea, regular	0	0	3	7	2	6
Juice, 100%	50	0	37	7	12	13
Juice, less than 100%	25	0	3	33	20	23
Milk, flavored 1% or nonfat	0	0	0	0	1	1
Milk, unknown type or other dairy beverage	0	0	0	1	0	2
Soda, diet	0	0	10	4	2	2
Soda, regular	0	0	3	0	1	1
Sports drink, regular	0	0	10	16	44	24
Sports drink, light or low calorie	0	0	0	0	0	2
Water	25	0	20	13	8	11
Water, flavored	0	0	10	16	9	15

Note. Percentages may not sum to 100 due to rounding.

Table 30 lists the types of foods available in vending machines by school level at baseline and follow-up site visits. No food-vending machines were accessible to students at the elementary school level at the time of the follow-up site visits. Chips, crackers, and

TABLE 30. Vending Machine Foods at Baseline and Follow-Up
in National Cohort Schools

| | School (%) | | | |
| | Middle | | High | |
Category	Time 1	Time 2	Time 1	Time 2
Candy/candy bars	0	7	4	6
Cereal/granola/granola bars/ breakfast bars	11	20	0	15
Chips/crackers/pretzels	30	25	31	29
Chips/crackers/pretzels, baked or reduced fat	26	10	8	11
Cookies/bars	18	19	29	18
Cookies/bars, 100-calorie snack packs	4	7	3	3
Fruit candy	0	2	3	1
Fruit, packaged or fresh	0	0	2	0
Meat, packaged	0	2	6	1
Pastry	6	7	6	9
Popcorn	6	0	2	0
Seeds, nuts, trail mix	0	2	5	7

Note. Percentages may not sum to 100 due to rounding.

pretzels were the most common type of food in the vending machines at the middle and

high school levels at baseline and follow-up visits. Cookies or bars were the next most

common item in subsample high schools at follow-up visit, although the overall

proportion of these items reduced from 29% at baseline visit to 18% at follow-up visit.

Cereal, granola bars, and breakfast bars were the second most popular item at the

subsample middle schools at the time of follow-up visit and had increased in proportion

by 9% from baseline visit to follow-up visit. These items increased in high school

vending machines. At the time of baseline visits, no subsample middle schools offered

candy or candy bars, whereas at the time of follow-up visits, they comprised 7% of the

items available in the middle school vending machines. The presence of candy and candy

bars in subsample high school vending machines also slightly increased between the baseline and follow-up visits.

School and district representatives cited a variety of challenges to improving competitive foods and beverages. Three district food service directors reported inconsistent implementation of guidelines for competitive foods and beverages across schools. In these cases, the district food service department owned some of the vending machines in schools, while athletic departments and other organizations owned others, and reportedly, the competitive foods and beverages in the district-owned machines complied with the Alliance guidelines, but some of the items selected by the outside entities did not. School representatives indicated that it was difficult to convince the outside entities to voluntarily change their options. Sales of healthier competitive foods and beverages in these schools were reportedly low because students tended to choose the high-sugar, high-fat options from the competing machines. Another district food service representative observed that the district's policy that all competitive foods and beverages sold on school campus meet Alliance competitive food and beverage guidelines was undermined by the high school's policy allowing students to leave campus during lunch. Whereas sales of competitive foods and beverages at the middle school remained steady after high-sugar, high-fat items were replaced with healthier options, sales of healthier competitive foods and beverages at the high school were low.

Some school representatives cited a lack of support for improvements to competitive foods and beverages. Some school representatives cited student preferences as a challenge. For example, one middle school cafeteria manager reported difficulties

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finding fruit snacks that met the Alliance competitive foods guidelines and were palatable to students. A high school cafeteria manager asserted that students prefer sweets and brand-name items they recognized, which made it difficult to stock vending machines with healthy snacks that students would purchase. One high school principal explained, "Kids like sweets. I like sweets. Would you rather have a candy bar or a banana? That type of culture change is difficult."

Frequently cited facilitators for improving the nutritional quality of competitive foods and beverages included district- and state-level policy and support from district and school administration. School representatives from one district reported that the district wellness policy reinforced changes called for through the Healthy Schools Program. In another district, school representatives suggested that the fact that state policy aligned with the Healthy Schools Program criteria helped hasten change. The principal of a school in this district explained, "It was really helpful for us that we didn't have to battle with the board of education or district administration to make these changes. The [student-accessible] vending machines were just gone one day." School-level administrators reportedly supported the removal of vending machines, actively monitored the healthfulness of items stocked in vending machines, and enforced school policies prohibiting the distribution of junk food by parents and teachers in classrooms. In one case, the district food service director reported that the changes in competitive beverages and food offerings had financially benefitted the food service program by increasing sales of school meals and had also increased the likelihood that students would consume healthier meals.

Urban District 1

There were noticeable changes to the competitive food and beverage offerings between baseline and follow-up site visits. At the time of the follow-up site visit, all of the subsample elementary schools had ceased the sales of competitive foods and beverages. Though competitive foods were still sold in all subsample middle schools, the sale of competitive beverages had diminished to limited access in one middle school. This middle school had one vending machine in the girls' locker room and one vending machine in the boys' locker room; each of which were stocked with water and 100% fruit juice. By policy, they were available to students only immediately before and after physical education classes. All of the middle schools offered competitive foods through vending machines located in their cafeterias and other places around campus. These food vending machines offered an assortment of options, as detailed in Table 31. The subsample high schools offered a plethora of competitive foods and beverages to students through the vending machines, cafeterias, and school stores. The food-vending machines were operational during lunch and after school.

The types of beverages available to students in vending machines changed between follow-up and baseline site visits at both the subsample middle and high schools. Table 31 lists the types of beverages available in student-accessible vending machines in middle and high schools. The table shows the number of each type of beverage available by school level during baseline and follow-up site visits. At baseline site visit, less than 100% fruit juice was the most frequent beverage type available in middle school vending

machines. At follow-up, only 100% fruit juice and water were available to middle school students in vending machines. At baseline, there was a broad range of beverages available in vending machines in the high schools. At the time of the follow-up site visit, sports drinks that complied with the Alliance school beverage guidelines and water were the predominant options.

TABLE 31. Number and Type of Vending Machine Beverages at Baseline and Follow-Up in Urban District 1 Schools

	School (%)			
	Middle		High	
Beverage	Time 1	Time 2	Time 1	Time 2
Iced tea/green tea	0	0	0	0
Juice 100%	20	67	45	12
Juice, less than 100%	54	0	11	6
Milk, unknown type or other dairy beverage	0	0	0	6
Soda, diet	0	0	0	0
Soda, regular	0	0	0	0
Sports or fitness drink	20	0	28	46
Water	7	33	17	31

There was also a shift in the offerings in the middle and high school vending machines containing food and accessible to students between baseline and follow-up site visits. At the time of follow-up, an average of 15 different food items was available in middle school vending machines and 77 different food items were available in high school vending machines. All high schools had multiple vending machines (ranging from three to six), and the offerings differed in each machine. Middle schools offered 56

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different food items at baseline and 34 items at follow-up. High schools offered 39 different food items at baseline and 56 items at follow-up.

The percentages of vending machine foods by category are reported in Table 32. There was an increase in the percentage of baked chips and crackers and a reduction in regular chips and crackers offered between baseline and follow-up in both the subsample middle and high schools. There was a decrease in the percentage of all types of cookie products sold at the middle and high schools, as well as a decrease in the percentage of ice cream or other frozen treats. The middle schools had stopped selling ice cream and other frozen treats altogether at the time of the follow-up site visit. Since the baseline site visit, one high school had transitioned to vending machines that sold only organic products.

The district food service director and school representatives were asked to comment on the changes in options between baseline and follow-up visits. The district food service director stated that the district had shifted practice by ordering and providing only vending snack and beverage options that met the Alliance guidelines, but that some schools were finding ways around the district offerings. She stated that the district was still negotiating with the independent student athletic association to adjust offerings in the vending machines they managed at the high schools. School representatives indicated that there was general support for the shift to healthier options within their school buildings but that some staff were unhappy about losing their access to less healthy snacks. Principals reported that revenue from the vending machines had remained constant despite the changes.

TABLE 32. Vending Food Available at Baseline and Follow-Up
in Urban District 1 Schools

Food Category	School (%)			
	Middle		High	
	Time 1	Time 2	Time 1	Time 2
Cereal/breakfast bar (does not include granola bar)	NA	7	NA	21
Candy	3	7	0	3
Chips/crackers	18	4	17	10
Chips/crackers/hard pretzels reduced fat or baked	18	53	17	24
Chips/crackers/pretzels: 100-calorie snack pack	0	0	2	0
Cookies/bars, packaged	18	7	11	5
Cookies/bars, 100 calorie snack packs	0	0	2	0
Dessert: cake, pie, donuts	5	0	7	0
Granola Bars	5	7	2	6
Nuts	2	0	2	0
Popcorn	5	7	2	3
Fruit Snacks	0	7	0	7
Ice cream/frozen snacks (low fat)	21	0	37	14
Fruits/vegetables	0	0	0	2
Other	8	10	0	4

Note. Percentages may not total 100 due to rounding.

Urban District 2

There were noticeable changes to the competitive food and beverage offerings
between baseline and follow-up site visits. At follow-up, two of the middle schools
offered competitive foods and beverages through vending machines located in the
cafeteria; however, the offerings at one school were quite limited. The other middle
school had a food- and a beverage-vending machine, both of which were operational all
day. At the initial site visit the food-vending machine was unplugged during lunch. The
beverage-vending machine offered only a low-fat flavored milk drink and bottled water—

an improvement over the offerings at the initial site visit. However, the food-vending machine offered an assortment of regular and reduced-fat chips and crackers, cookies, granola bars, and popcorn. Five schools (four elementary and one middle school) did not offer competitive foods or beverages to students, and did not have food- or beverage-vending machines at the time of the follow-up site visit. The vending machine at one middle school offered baked chips, popcorn, granola bars, crackers, and cookies. This school also offered competitive foods for sale in the cafeteria; all of the food available in the vending machine and in the cafeteria met the Alliance competitive food guidelines. At the time of the baseline site visit, this school also had a beverage machine but its contents were not compliant with Alliance competitive beverage guidelines and the machine was removed.

The subsample high schools offered a plethora of competitive foods and beverages. One high school had no vending machines but offered a variety of foods and beverages in both the cafeteria and a school store. Another high school had five beverage- and two food-vending machines and also sold competitive foods and beverages in an area adjacent to the cafeteria. The food vending machines were operational during lunch and after school. Since the baseline site visit, the school had removed two beverage-vending machines and replaced them with a water cooler.

There were fewer and healthier beverages available to students in vending machines at the time of the follow-up site visits, as compared to baseline site visits at both the subsample middle and high schools. Table 33 lists the types of beverages available in student-accessible vending machines in the middle and high schools. The

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table shows the number of each type of beverage available by school level during baseline and follow-up site visits. At baseline site visit, less than 100% fruit juice was the most frequent beverage type available in middle school vending machines. At follow-up, only fat-free or skim milk and water were available to middle school students in vending machines. At baseline site visit, there were a broad range of beverages available in vending machines in the high schools. At follow-up, only 100% fruit juice and water were available. At follow-up, all of the beverages available in the middle and high schools complied with the Alliance school beverage guidelines.

TABLE 33. Number and Type of Vending Machine Beverages at Baseline and Follow-Up in Urban District 2 Schools

| | School (%) | | | |
| | Middle | | High | |
Beverage	Time 1	Time 2	Time 1	Time 2
Iced tea/green tea	0	0	1	0
Juice 100%	18	0	31	38
Juice, less than 100%	55	0	0	0
Milk or other dairy beverage	0	50	0	0
Soda, diet	0	0	1	0
Soda, regular	0	0	1	0
Sports or fitness drink	0	0	1	0
Water	27	50	60	62

There was also a shift in the offerings in the middle and high school vending machines containing food and accessible to students between baseline and follow-up site visits. Middle schools offered 56 different food items at baseline and 34 items at follow-up. High schools offered 39 different food items at baseline and 56 items at

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follow-up. The percentages of foods by category are reported in Table 34. There was a modest increase in the percentage of regular chips and crackers offered between baseline and follow-up site visits in both the middle and high schools. There was a decrease in the percentage of reduced fat chips and crackers offered at the subsample middle schools and an increase in the availability of these products at the subsample high schools between baseline and follow-up site visits. There was a decrease in the percentage of all types of cookie products and other desserts sold at the subsample middle and high schools between baseline and follow-up site visits.

TABLE 34. Vending Food Available at Baseline and Follow-Up
in Urban District 2 Schools

| | School (%) | | | |
| | Middle | | High | |
Food Category	Time 1	Time 2	Time 1	Time 2
Cereal/breakfast bar (does not include granola bar)	2	0	0	0
Chips/crackers	23	28	36	38
Chips/crackers/hard pretzels reduced fat or baked	48	33	28	41
Chips/crackers/pretzels: 100-calorie snack pack	0	0	0	2
Cookies/bars, packaged	13	11	18	9
Cookies/bars, 100 calorie snack packs	2	0	0	0
Dessert: cake, pie, donuts	0	0	3	0
Granola Bars	5	17	5	5
Nuts	2	0	3	2
Popcorn	5	8	8	4
Other	0	3	0	0

Note. Percentages may not total 100 due to rounding.

The food service director and school representatives were asked to comment on the changes in options between baseline and follow-up visits. The food service director

stated that the district had shifted practice by ordering and providing only vending snack and beverage options that met the Alliance guidelines, but that some schools were finding ways around the district offerings. She believed that the noncompliant schools were concerned about losing revenue if they shifted to healthy options. School representatives indicated that there was general support for the shift to healthier options within their school buildings, and that in some cases they had leveraged students as peer advocates for these changes. A few school representatives shared that there was resistance to making changes in snack foods sold in vending machines among some school staff because the revenue went to support key student services, such as school-based health centers and after-school clubs. For example, one physical education teacher was reportedly selling chips and other high-fat snacks to students, an action that was perceived as hostility toward the school's wellness efforts.

Physical Activity Opportunities

Follow-up data on physical activity programs were collected through interviews and focus groups in all three cohort sites. Patterns and themes, as well as key differences in policy and program outcomes between baseline and follow-up visit, are reported below.

National Cohort

School representatives reported that there was a decline in the frequency of recess between baseline and follow-up visits. Six of eight elementary schools reported providing

daily recess at the time of the follow-up visit. The length of recess ranged from 10 minutes to 50 minutes and the average time was 24 minutes. One school provided at least 15 minutes of recess only on the days that students did not participate in physical education. Another school had eliminated daily recess from the schedule after the baseline site visit to accommodate newly required curricular components, such as health education and foreign language. At this school, recess was offered at the discretion of individual teachers.

At the time of the follow-up visits, five of the subsample elementary schools offered physical activity breaks routinely in the classroom, an increase from only two elementary schools that did so at baseline. All five schools used *JAMmin' Minute* exercises, a program offered by the Healthy Schools Program. Two school representatives from schools that provided both recess and physical activity breaks during the school day expressed a desire to provide even more opportunities for physical activity. At the time of the follow-up visit, seven subsample elementary schools, compared to five at baseline, had either before- or after-school programs that included physical activity opportunities. One of the elementary schools that reported an after-school program at the time of the baseline site visit had discontinued it due to budget cuts at the time of the follow-up site visit.

Two of the subsample middle school representatives reported providing regular physical activity breaks during the school day at follow-up visit. One middle school reportedly offered a 15-minute daily recess for all students, and another middle school provided a daily 15-minute open gym period adjacent to the lunch period. School

representatives from two middle schools reported that that some teachers incorporated physical activity breaks into their classes. One school reportedly began conducting daily *JAMmin' Minute* exercises during morning announcements after the baseline visit, but was no longer doing so at the time of the follow-up visit because morning announcements had been eliminated. At the time of the follow-up visit, six middle schools, compared with seven at baseline, offered intramural sports such as basketball, soccer, flag football, baseball, and volleyball. Two of the subsample middle schools also had after-school programs that provided physical activity opportunities, and one school offered both intra- and extramural sports. School representatives from four middle schools expressed a desire to provide a greater variety of after-school physical activity opportunities.

All six high schools offered intramural or extramural sports. After the baseline site visit, two subsample high schools reportedly increased their extracurricular sports offerings, whereas one high school eliminated some sports due to budget cuts. School representatives from three high schools reported that fitness facilities were open to students before school, after school, or during lunch. Other physical activity opportunities at the subsample high schools included an after-school dance program (one school); an annual wellness day (one school); National Walk to School Day (one school); and daily 5-minute, school-wide physical activity breaks (one school).

The majority of school representatives at all school levels expressed a desire to increase physical activity opportunities for students, but pointed to several barriers to doing so. The predominant barriers cited were the lack of funds for structured programs and staff time to monitor activities. One school representative also reported a need for

additional facilities for physical activities. One elementary school representative relayed that the emphasis on academics resulted in the elimination of a daily physical activity period at her school. Elementary and middle school representatives cited their administrators' support for the integration of physical activity into the school day as a facilitator of progress because it had led to staff and student buy-in. One elementary school representative emphasized the importance of school administration support, saying, "It has to come down from the principal. [Physical activity] can't just be supported by the school wellness council. The principal has to enforce it and emphasize the importance of it."

Urban District 1

At the time of the follow-up site visits, all subsample school representatives reported offering some type of physical activity opportunities before, during or after school. All of the elementary schools reported that they continued to offer recess, although one elementary representative mentioned that it was less consistent at her school than it had been in the past due to the timing being left up to each teacher. Since the baseline site visit, one subsample elementary school that had had very limited outdoor space reported building a field and transforming a former band room into an indoor fitness facility. Elementary school representatives also shared the addition of a sundry of other physical activity opportunities for students, including classroom physical activity breaks, running clubs, and walk-a-thons.

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Middle school representatives reported that their physical activity programs had remained constant between baseline and follow-up. However, one middle school representative reported that his school had just lost its activity bus due to budget cuts, reducing access to programs for some students. Before- and after-school physical activity options had been added at the subsample high schools since the baseline visit. One high school had added a before-school basketball league, and another had begun keeping its gymnasium open after school and on weekends for students and their families.

School representatives cited student participation and enthusiasm for the physical activity opportunities offered as both a facilitator and a barrier. Reportedly, activities ebbed and flowed depending upon interest. Transportation and the cost of staff time were other commonly cited barriers to offering physical activity opportunities that were accessible to all students.

Urban District 2

All school representatives from all of the subsample schools reported the provision of opportunities for physical activity at the time of the follow-up site visits. All elementary schools continued to provide 20 minutes of daily recess. Since the baseline site visits, the district had contracted with an outside provider to lead structured activities during the recess period at two of the subsample elementary schools.

Physical activity breaks in the classroom were offered in one middle school. Two middle schools required students to participate in extended learning time, which included time for physical activities such as ballet, cheerleading, swimming, and team sports. A

third middle school offered a variety of intramural after-school sports. All but one of the subsample high schools offered a variety of after-school sports and other physical activities.

School representatives cited collaborations with outside organizations as a key driver for increased physical activity opportunities. They did mention that transportation was a barrier for some students who were interested in after-school activities. When asked their perceptions about why more teachers did not include physical activity breaks in their classroom activities, they cited concerns about students losing focus and escalating disruptive behavior.

Physical Education

Follow-up data on physical education programs were collected through interviews, observations, and focus groups in all three cohort sites. Patterns and themes, as well as key differences in policy and program outcomes between baseline and follow-up visit, are reported below.

National Cohort

The follow-up focus groups, interviews and observations revealed considerable variation in terms of the frequency of physical education classes, the number of physical education teachers, and the quality and size of physical education facilities. At the time of follow-up visits, three of the subsample elementary schools offered physical education 4 or 5 days per week for 20 to 30 minutes, and two elementary schools offered physical

education two or three times per week for 35 minutes. Another elementary school provided physical education to all students every other day for 15 minutes. In sum, the amount of physical education time that subsample elementary schools offered per week ranged from 40 minutes to 150 minutes, with an average of 83 minutes per week.

Three subsample elementary schools changed the amount of physical education offered between the baseline and follow-up visits. One school increased physical education for kindergarten students from 30 minutes twice a week to 30 minutes four times per week. Another school, which was not providing physical education for kindergarten students at the time of the baseline site visits, was providing physical education for kindergarteners 5 days per week for 30 minutes at the time of the follow-up visit. One subsample elementary school drastically reduced the amount of physical education provided to students. At baseline, all students participated in 40 minutes of physical education 5 days per week, whereas at follow-up, students participated in 40 minutes of physical education either once or twice a week, depending on their grade level.

Certified physical education teachers were responsible for delivering physical education in all but one elementary school where classroom teachers were responsible for delivering physical education. This marked an increase in the number of subsample elementary schools that employed certified physical educators between baseline and follow-up site visits. At baseline, one elementary school representative indicated that physical education was only sporadically taught at her school because many teachers were not comfortable being physically active and, thus, did not provide physical education to their students. At the time of the follow-up site visit, physical education scheduling

remained at the discretion of individual teachers, but the school district had instituted an online monitoring system to track the delivery of minimum amounts of physical education, physical activity, and nutrition education. She reported that this accountability system, along with more professional development, had increased the frequency of instruction. Four of the elementary schools reported having inadequate staffing for physical education. In each case, one physical education teacher was responsible for delivering physical education to all students. At another school, the physical education teacher rotated between two schools, an arrangement that limited the amount of physical education that could be offered to one or two times per week.

There was also great variance in the frequency of physical education among subsample middle schools. Three of the subsample middle schools offered physical education 5 days per week and four middle schools offered physical education two to three times per week. The amount of physical education middle school students received annually ranged from 68 minutes to 235 minutes per week, with an average of 158 minutes per week. Four subsample middle schools made changes to their physical education offerings between baseline and follow-up site visits. Two subsample middle schools decreased the amount of physical education offered. One middle school reduced the length of daily physical education classes from 40 to 32 minutes to increase the amount of time students spent in core academic classes. The other school reduced the amount of time students participated in physical education from the whole school year to one or two of three trimesters. Staff from this school reported that pressure to meet state education standards resulted in the decrease in physical education offerings and the

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removal of more students from physical education classes for reading or writing remediation. One middle school drastically increased the amount of time students spent in physical education from 40 minutes 4 days per week for half of the school year at baseline to 40 minutes 5 days a week for the entire school year at the time of follow-up visit. Certified physical educators taught physical education at all middle schools.

At follow-up, all of the subsample high schools required one to two terms of physical education for graduation. Three high schools required one term of physical education, one required one term of physical education plus one term of an elective physical education course, and one required two terms of physical education plus one term of an elective physical education course. Two subsample high schools made changes to physical education offerings between the baseline and follow-up site visits. One high school changed the physical education course offerings by switching from offering daily 90-minute physical education classes for a nine-and-a-half-week term to offering daily 70-minute classes for a 12-week term. This reduced the overall physical education minutes offered by 75. Another high school switched from a semester schedule with 50-minute classes to a trimester schedule with 70-minute classes, which resulted in students receiving more minutes of physical education. Certified physical education teachers taught physical education at all of the high schools.

The site visitors observed between two and four physical education classes at each of the 21 subsample schools during the baseline and follow-up site visits. Average class sizes remained stable between baseline and follow-up visits, except in subsample middle schools. The average middle school class sizes declined from 26.4 students per teacher at

baseline to 20 students per teacher at the time of the follow-up site visit. The average

elementary class size went from 17.1 students per teacher at baseline to 18.7 students per

teacher at follow-up. The average high school class size went from 22.2 students per

teacher at baseline to 21.8 students per teacher at follow-up visit.

The physical education classes observed ranged from 30 to 90 minutes in length

and averaged 46 minutes. The mean duration of physical education classes increased at all

school levels. Middle schools increased their average class time the most, going from an

average of 43.7 minutes at baseline to 51.8 minutes at follow-up. The differences between

baseline and follow-up average class time at the elementary and high schools were

nominal: 1.8 minutes and 2.5 minutes, respectively.

Observations during the follow-up site visits revealed a great deal of variation in

the ways in which students spent physical education class time. Table 35 shows the

average amount of time students were engaged in various activities and the range among

all of the physical education classes observed during the baseline and follow-up site

visits. Results indicate a marked increase in the percentage of class time students spent

listening to lectures or general instruction from baseline (9%) to follow-up (13%), and in

the percentage of time preparing for or waiting to participate in activity (from 16% to

30%). Consequently, there was decline in the mean percentage of time spent performing

moderate or vigorous activity from baseline visit (71%) to follow-up visit (45%). During

follow-up observations, the site visitors did, however, estimate that, on average, 78% of

the students participated in the majority of the moderate or vigorous activity that took

place in the physical education classes, as compared to 64% of students at the time of the baseline site visits.

TABLE 35. Physical Education Class Activity in National Cohort Schools
at Baseline and Follow-Up

	M (%)		Min (%)		Max (%)	
Activity	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Waiting or preparing (including changing clothes)	16	30	0	0	67	62
Listening to lecture or general instruction	9	13	0	0	80	100
Performing low-level physical activity	8	12	0	0	25	78
Performing moderate or vigorous activity	71	45	17	10	95	94

Note. Percentages may not total 100 due to rounding.

School representatives cited several barriers to offering quality physical education programs in which students remained moderately to vigorously active for the majority of the period. The most commonly cited barrier was inadequate facilities and equipment. For example, one school representative shared that there were periods during the day when multiple classes were held simultaneously in the gymnasium, amounting to upwards of 200 students in that space. This representative stated that, as a result, students were not always active during class because they were sharing equipment and space with so many of their peers. Another school representative mentioned that their school locker rooms were so small that students had to dress in shifts, reducing the amount of class time available for physical activity and instruction. Several school representatives also mentioned inadequate staffing as a barrier to offering the recommended weekly number of minutes of physical education. School representatives from four of the subsample elementary schools shared that one physical education teacher was responsible for

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delivering physical education to all students. Another elementary school representative

shared that the physical education teacher rotated between two schools, an arrangement

that limited the amount of physical education that could be offered to one or two times

per week. Respondents did not volunteer any facilitators for improved physical education,

but when probed, they mentioned an increase in professional development regarding

quality physical education between baseline and follow-up site visits.

Urban District 1

At follow-up, all subsample schools offered some sort of physical education.

However, space for physical education classes continued to be limited at some subsample

elementary and middle schools. In one elementary school, the lunchroom doubled as the

gym, as there was no outdoor activity space. One middle school representative reported

the opposite situation. This school had a field and basketball courts, but no indoor space

for physical activity, meaning that physical education was canceled in inclement weather.

High school representatives reported adequate indoor and outdoor facilities for physical

education.

Several school representatives mentioned that *FitnessGram*, a commercial tool to

assess and educate students, had been introduced and required since the baseline site visit.

All middle and high school representatives reported receiving training on *FitnessGram*,

and that they were now required to assess students three times per year. As a result of this

change, the high school curriculum had reportedly changed from a sports-based to a

fitness-based approach. There were mixed reviews among physical educators as to

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whether this was a positive change. Several school representatives across levels, however, shared that girls seemed to enjoy physical education more as a result of the shift.

During the follow-up visits, site visitors observed 11 classes: three classes at the elementary schools, four classes at the middle schools, and four classes at the high schools. There was a decrease in the average number of physical education instructors for elementary and middle school classes between baseline and follow-up. On average, classes observed at follow-up were comprised of a ratio of 32 students to 1.5 school staff, as compared to 25 students to 1.5 school staff at baseline. At the time of the follow-up site visits, the physical education classes observed ranged in length from 30 to 120 minutes and averaged 80 minutes. This was an increase over the baseline observations, revealing that classes ranged from 30 to 110 minutes and averaged 68 minutes.

Site visitors also collected information on how students spent physical education class time. Table 36 shows the average percentage of class time students were engaged in various activities observed by school level during baseline and follow-up visits. As seen in Table 36, the average percentage of class time that students spent waiting to engage in activities decreased from 40% of physical education time at baseline visit to 33% of physical education time at follow-up visit. The average amount of time spent listening to lectures or general instruction remained about the same between baseline and follow-up visits (8% and 9% of time, respectively). The average percentage of elementary physical education class time spent performing low-level physical activity decreased greatly between baseline and follow-up visits, going from 33% to 10% of time. Contrarily, the percentage of physical education class time that students spent performing moderate or

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vigorous activity increased from an average of 19% at baseline to 47% at follow-up visit.

Site visitors also estimated the percentage of students participating in the majority of

moderate and vigorous activities being offered. At baseline, the average was 84% of

students, and at follow-up, the average student participation rate was 87%, with a range

from 25% to 100% of students.

TABLE 36. Physical Education Class Activity in Urban District 1 Schools at Baseline and Follow-Up

Activity	M (%)		Min (%)		Max (%)	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Waiting or preparing (including changing clothes)	40	33	17	3	75	54
Listening to lecture or general instruction	8	9	0	0	18	29
Performing low-level physical activity	33	10	15	0	61	24
Performing moderate or vigorous activity	19	47	0	20	39	80

Note. Percentages may not total 100 due to rounding.

School representatives identified the requirement of *FitnessGram* assessments as

a lever for increased physical education time in their schools. They also indicated that the

level of physical education professional development offered had increased since the

baseline visits, particularly on how to assess students' fitness. Staffing limitations and

time during the school day were cited as the most common barriers.

Urban District 2

At follow-up, only two high schools met the Alliance physical education

requirements, and none of the subsample schools met their district requirements of 90

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hours of physical education per school year. Four elementary schools offered a 45- or 48-minute physical education class weekly. Three subsample middle schools offered 80 minutes of physical education weekly, which came close to meeting the 90-minute requirement. One elementary and middle school did not require physical education but reported that most students took at least some physical education.

At follow-up, space for physical education classes continued to be limited at the elementary and middle schools. One elementary school had well-maintained outdoor facilities but no indoor physical education space. Physical education was taught in a long, narrow hallway in the building's basement when the weather was inclement, a common reality in this urban area. Most elementary and middle school representatives reported using their lunch rooms for physical education. One middle school had a small blacktop area outside, but the area was in poor condition and doubled as a parking lot. All of the high schools had full gymnasiums.

During the follow-up visits, site visitors observed seven classes at the elementary schools, three classes at the middle schools, and four classes at the high schools. There was no change in the average number of physical education instructors for elementary and middle school classes between baseline and follow-up. Baseline observations did not occur at the high schools, but there was generally one instructor per class at the high school level as well. The average physical education class size at the elementary school level increased from an average of 18 students at baseline to an average of 20 students at follow-up. In comparison, the average student class size in physical education classes at the middle school level decreased from 22 students at baseline to 15 students at

follow-up. At follow-up, the high school physical education classes had an average of 12 students. Finally, the number of minutes of class time remained stable between baseline and follow-up for the elementary school classes ($M = 45$, $M = 46$, respectively). At the middle school level, the number of minutes of class time decreased between baseline and follow-up ($M = 67$, $M = 58$, respectively). The average length of class at the high school level at follow-up was 66 minutes.

Site visitors also collected information on how students spent physical education class time. Table 37 shows the average percentage of class time students were engaged in various activities observed by school level during baseline and follow-up visits. As seen in Table 37, the average percentage of class time that students spent waiting to do activities increased at the elementary school level between baseline and follow-up, indicating that at follow-up, elementary students spent a greater percentage of their class time waiting for preparing to do activities. Similar to the elementary schools, the average percentage of class time that middle school students spent waiting or preparing increased between baseline and follow-up. At the high schools, the percentage of class time spent waiting or preparing for activity ranged from 10% to 26% at the time of the follow-up site visit. As seen in Table 37, the average amount of time spent listening to lectures or general instruction decreased at the elementary school level and increased at the middle school level between baseline and follow-up visits. At the high school level, the percentage of class time spent listening to lectures or general instruction ranged from 0% to 6% at follow-up visit.

TABLE 37. Physical Education Class Activity in Urban District 2 Schools at Baseline and Follow-Up

	School									
	Elementary				Middle				High	
	Time 1		Time 2		Time 1		Time 2		Time 2	
Percent of class time students spent	*M* (%)	*SD*	*M* (%)	*SD*	*M* (%)	*SD*	*M* (%)	*SD*	*M* (%)	*SD*
Waiting or preparing	17	14.3	34	12.4	21	17.3	24	18.1	19	6.5
Listening to lecture or general instruction	18	11.3	15	11.2	6	9.0	13	9.2	2	3.0
Performing low level physical activity	34	28.7	8	8.9	12	4.0	23	16.7	49	18.8
Performing moderate or vigorous activity	31	17.5	43	13.2	46	3.1	41	12.0	27	20.9

Note. Percentages may not equal 100 due to rounding.

The average percentage of elementary physical education class time spent performing low-level physical activity decreased from baseline to follow-up. At the middle school level, the percentage of class time spent performing low-level physical activity increased between baseline and follow-up, as indicated in Table 37. At the high school level, the percentage of class time spent performing low-level physical activity ranged from 29% to 74%. The percentage of physical education class time that elementary school students spent performing moderate or vigorous activity increased, ranging from 0% to 49% at baseline, and from 29% to 69% at follow-up. At the middle school level, the percentage of class time spent performing moderate or vigorous activity decreased slightly, ranging from 44% to 50% at baseline, and 27% to 48% at follow-up. At the high school level, the percentage of class time spent engaged in moderate to vigorous activity ranged from 0% to 45% at follow-up. Site visitors also estimated the percentage of students participating in the majority of moderate and vigorous activities. At the elementary school level the average participation was 100% at both baseline and follow-up. At the middle school level, the average participation increased between baseline observation (80%) and follow-up observation (99%). At follow-up, student participation was the lowest at the high school level (84%) compared to the other school levels.

School representatives identified the overall focus on health and wellness as a lever for increased physical education time in their schools. They also indicated that the level of physical education professional development offered had increased since the baseline visits, particularly at the elementary school level. Lack of adequate facilities and

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time during the school day were cited as the most common barriers. They also stated that the facilities available greatly limited the types of activities that could be conducted as a part of physical education, particularly at the elementary and middle school levels.

Health Education

Follow-up data on health education programs were collected through interviews and focus groups in all three cohort sites. Patterns and themes, as well as key differences in policy and program outcomes between baseline and follow-up visit, are reported below.

National Cohort

School representatives reported that the delivery of health education varied depending on school level, delivery approach, type of instructor, and curriculum at the time of the follow-up site visits. All but one of the subsample elementary schools and most of the subsample middle schools integrated health education into other subject areas instead of teaching it as a stand-alone subject. One middle school representative reported that his school offered a stand-alone health education class at baseline, but that the school had discontinued the class by the time of the follow-up visit and instead expected health education topics to be incorporated into physical education courses. Staff attributed this change to budget cuts and the need to meet the Adequate Yearly Progress requirement under No Child Left Behind. In contrast, all six of the subsample high schools offered stand-alone health education courses lasting at least one semester.

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At the time of the follow-up site visits, classroom teachers were reported to be responsible for delivering health education in all subsample elementary schools, whereas in the majority of the subsample middle and high schools, the instructor was certified to teach health education. At the middle schools, health education topics were commonly taught in physical education classes. Specifically, four of the middle school representatives discussed incorporating health education into physical education classes taught by physical education teachers, two of whom were also certified to teach health education. Certified health education teachers reportedly taught health education in five of the six high schools.

At the time of the follow-up site visit, school representatives were satisfied with the quality of the health education provided, but many expressed dissatisfaction with the frequency and variety of the offerings. Some elementary school representatives voiced a desire for certified health educators to be responsible for teaching health education rather than classroom teachers. Others, stating that the degree to which health education was incorporated into classroom lessons varied by teacher, urged greater consistency and accountability. Middle school representatives suggested that health education be a required rather than an elective course and be offered to all middle school grades. High school representatives wanted to expand health education offerings; develop health education programs that integrate the concepts of healthy minds, bodies, and attitudes; and increase administration and staff support for the integration of health education across the curriculum.

School representatives cited several challenges to offering the recommended quality and quantity of health education to their students. The most prevalent barriers brought to fore were budget and staffing constraints. A related challenge was competing priorities at the state, district, and school levels. One high school principal remarked,

> We need to balance the demands of No Child Left Behind and academics with having a safe school environment and our goals for health and wellness. There are a lot of demands placed on schools . . . and the demands for health and wellness can be seen as just one more thing.

Efforts to increase student achievement in reading and mathematics sometimes resulted in students being pulled from health education classes for remedial classes or testing. In this climate of competing priorities, some school representatives said that they struggled to allocate class time to health education.

District and school representatives cited a committed school wellness council or an individual advocate at the school or district level as facilitators for improving health education. For example, staff in one elementary school whose principal was highly supportive of the Healthy Schools Program actively sought funding opportunities to supplement the school wellness council's initiatives. As a result, in 2009 the school was awarded a grant to purchase a health education curriculum. Some school representatives cited district- and state-level support for health education in schools as a facilitating factor. For example, as a result of state legislation increasing health and physical education requirements, high schools in three districts required students to complete the yearlong state health education curriculum.

Urban District 1

School representatives reported some modest changes in the quality and quantity of health education between baseline and follow-up site visits. Whether at baseline or follow-up, none of the subsample elementary schools had a stand-alone health education class or used a formal curriculum. In general, the schools integrated health-related topics into physical education. Elementary school representatives reported that they received district training on how to teach health education, but very few reported implementing what they learned. At the time of the follow-up visit, all middle schools reported integrating health education into science classes, which, in terms of the quality and quantity of health education, marked either an improvement or a maintenance of the status quo as compared to baseline site visits. School representatives reported that science teachers taught a 9-week health education unit during science class, and students received information about nutrition in their physical education classes. Middle school representatives reported that a formal curriculum provided by the district was used for health education at the middle school level. Neither of the subsample high schools required health education, which was also the case at the time of the baseline site visit. School representatives reported that in one case, health education consisted of the school nurse providing periodic nutrition education in homerooms, and that in the other, health education topics were periodically integrated into physical education.

School representatives uniformly identified the biggest barrier to health education as limited time within the instructional day. Several mentioned that their principal did not stress the importance of health education because it was not a part of the state assessment

tests. Several school representatives mentioned that there were varying levels of comfort among their colleagues with the subject matter, which they believed influenced implementation. Several stated that their "health-conscious" colleagues (sometimes including themselves) were more likely to teach health education than their less health-conscious colleagues.

Urban District 2

The quantity and quality of health education continued to vary at the time of the follow-up site visits. Elementary school representatives reported that health education was being integrated into the regular curriculum at four elementary schools. One elementary school reportedly offered no health education to its students. The middle schools reportedly increased their health education time between baseline and follow-up visits. One middle school that had offered health education as an elective at the initial site visit, but with plans to eliminate the class in the following year, instead made it a mandatory class by the time of the follow-up site visit. All students were required to enroll in a half year of health education, and the class met daily for 45 minutes. At the other middle school, students participated in an 80-minute combined health education and physical education class twice a week with 40 minutes of each class devoted to health education topics. All three of the high schools offered health education and met the high-school-level criterion. One of the schools required 4 years of health education, a second high school required a half year of health education for ninth- and 10th-grade students,

and a third high school required students to participate in a year-long combined health education and physical education class.

Several of the subsample schools took advantage of partnerships with community organizations to provide or augment their health education offerings. A local higher education institution provided supplementary lessons in three schools (an elementary school, a middle school, and a high school). A middle school had had a partnership with a local community health organization at the time of the baseline site visit, but the partnership was no longer in place at the time of the follow-up site visit.

School representatives pointed to community collaborations as key to the provision of health education. School representatives from all school levels indicated that these collaborations were important because very few staff felt equipped to teach health education. They stated that they received very little professional development or guidance from the district. School representatives also cited limited class time as a barrier to delivering recommended amounts of health education at the elementary and middle school levels.

Before- and After-School Programs

Follow-up data on before- and after-school programs were collected through interviews and focus groups in all three cohort sites. Patterns and themes, as well as key differences in policy and program outcomes between baseline and follow-up visit, are reported below.

National Cohort

At the time of the follow-up visit, seven elementary schools and five middle schools offered after-school programs on their campuses. Additionally, one high school shared an after-school program with one of the middle schools, and another high school was planning to add an after-school program. Two middle schools and four high schools that did not offer formal after-school programs did provide interscholastic sports. Physical activity was a component of all of the schools with after-school programs, except for one middle school. The structured and unstructured physical activities opportunities included team sports such as basketball, football, baseball, and volleyball, as well as activities like dance, cheerleading, yoga, and walking or running. The number of minutes students participated in physical activity varied. One school offered as many as 45 minutes of daily physical activity, whereas another offered 20 minutes of daily physical activity supplemented by one additional hour per week. One of the schools had an after-school program that provided daily physical activity, whereas intramural sports were the after-school opportunities for physical activity at the other schools.

School principals who were interviewed reported that the before- and after-school programs offered participants healthy snacks, including fruit, nuts, milk, cheese, yogurt, crackers, juice, and cold breakfast items such as cereal, bagels, and granola bars. School representatives reported that the nutritional value of the snacks had improved over time. "The first year we started with the Healthy Schools Program, the snacks were more breads and sweets," observed one school representative, "but just recently . . . it switched to more fruit and dairy, which is better." Overall, school representatives were happy with

the nutritional improvements, but wanted more variety in the foods offered and more fresh options. The snacks were reported to be in compliance with federal guidelines.

School representatives reported a few challenges to before- and after-school programming, but also acknowledged that they were more removed from the details due to the fact that the majority of programs were run by outside organizations. Middle and high school representatives reported that their schools' after-school programs and sports teams competed for space, making increased physical activity offerings difficult. A lack of funds for staff time to monitor activities was cited as a primary barrier to offering more after-school physical activity opportunities. Limited food preparation space was also a problem.

Receipt of external grants was reported as the prevailing facilitating factor to before- and after-school programs. One district, for example, received a grant through the state department of education to purchase equipment for a physical activity program and to pay one of the school's physical education teachers to lead the program after school. Two schools, on the other hand, reported that they had discontinued their before- or after-school physical activity opportunities due to insufficient staffing and funding.

Urban District 1

At the time of the follow-up site visits, formal after-school programs were offered only at the elementary school level, and all after-school programs reportedly had a physical activity component. As described in the physical activity section, the majority of middle and high schools offered intramural and interscholastic sports, but they were not

tied to a formal after-school program. Aside from the addition of a before-school basketball league at one high school, no formal changes had been made to before- or after-school programs between baseline and follow-up site visits. School representatives mentioned that they believed after-school programs in their schools would be beneficial to students and speculated that budget considerations were the culprit for the lack of options.

Urban District 2

There were very few changes in before- and after-school programs offered in the subsample schools between baseline and follow-up visits. After-school programs continued to be absent in the subsample elementary schools. Contrarily, three middle schools required students to participate in extended learning time after school, which included time for physical activities such as ballet, cheerleading, swimming, and team sports. Another middle school offered a variety of intramural after-school sports. Two of the high schools offered a variety of after-school sports and other physical activities, but the third high school offered only limited physical activity opportunities as a result of budget cuts.

School representatives cited budget constraints impacting the schools, as well as their collaborators, as challenges for before- and after-school programs. They did believe that more physical activity had been added to existing before- and after-school programs as a result of the school- and district-wide focus on health. School representatives

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continued to express frustration over the lack of coordination between the school and many of the after-school providers.

School Employee Wellness

Follow-up data on school employee wellness programs were collected through interviews and focus groups in all three cohort sites. Patterns and themes, as well as key differences in policy and program outcomes between baseline and follow-up visit, are reported below.

National Cohort

The majority of school representatives reported that school employee wellness efforts were happening in their buildings. Four schools reported the development of school employee wellness programs since the baseline site visit. Common activities included after-school aerobics classes, healthy-recipe exchanges, Weight Watchers groups, and lunchtime walking groups. Activities that were added after the baseline site visit in schools that had a school employee wellness program at that time included Zumba, yoga, monthly physical activity challenges, and staff sports teams. Several schools had also established new workout facilities for staff. In addition, two schools reported that they used Healthy Schools Program implementation grant funds to purchase exercise equipment, and to provide gym memberships and exercise classes to students and staff.

Many of the cited challenges to implementing employee wellness activities were related to the employees themselves. School representatives frequently cited a lack of time or interest to participate in wellness activities. School representatives also reported that budget cuts, coupled with the pressure to meet state standards and the requirements of the No Child Left Behind Act put additional pressure on already overcommitted staff, leaving little time and energy for participation in employee wellness efforts. Other persistent challenges included a lack of funds to purchase exercise equipment, logistical issues, and staff turnover.

School representatives identified factors at both the school and district levels that facilitated employee wellness efforts. In some cases, a committed school wellness council or individual advocated for employee wellness activities. School representatives also reported that participation in the Healthy Schools Program was a motivating factor because it made them more health conscious. District-level financial support for employee wellness activities was also a facilitating factor. For example, one district maintained a district-level wellness coordinator to develop, implement, and evaluate the district-wide employee wellness program.

Urban District 1

All of the subsample schools had expanded or maintained their employee wellness activities at the time of the follow-up visit. Available activities at the subsample elementary schools included belly dancing classes, walking programs, and Weight Watchers at Work groups. At the time of follow-up, all subsample elementary schools

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reported switching to healthier snacks and beverages during staff events. One elementary school had built a fitness room for its staff and another held yoga classes for staff after school.

School representatives from all of the subsample middle schools reported employee wellness activities at follow-up. One subsample middle school held dual fitness center hours for students and staff at lunch time to "inspire relationship building and fitness." Another middle school maintained staff tracking of their physical activity each month, making them eligible for incentives, such as pedometers, water bottles, and gift certificates for their efforts. At the time of the follow-up site visits, all high school representatives indicated the existence of an employee wellness program. Both high schools had conducted annual staff weight loss challenges and were providing healthier foods at faculty meetings. Both subsample high schools also reportedly offered periodic fitness classes for staff after school.

School representatives cited very few barriers to offering employee wellness programs. Several representatives mentioned that they used employee wellness opportunities as a means to promote school-wide changes for health. A few school representatives mentioned that after-school fitness options were made easier by community donations of equipment, but that finding volunteer fitness instructors was time consuming. The lack of funds to support these instructors' fees was noted as a barrier to consistent offerings.

Urban District 2

At the time of the follow-up site visits, all but one subsample school had implemented school employee wellness activities since the baseline visit, and seven schools had maintained their efforts. One elementary school had offered onsite flu shots and health screenings to staff, parents, and students and was disseminating a monthly fitness newsletter to the school community. Another school offered a yoga class for staff and families. Other activities implemented by schools included dance classes, weight loss competitions, lunchtime walking clubs, and stress management classes. The employees at another school were tracking their steps over an 8-week period.

The other subsample schools had offered school employee wellness activities but had not been able to maintain them. A school merger and a change in administration derailed the employee wellness program at one school. Another school had provided employee wellness activities during the first 2 years of program implementation, but they ceased when the school champion for the effort left the school. One school still had not gotten a school employee wellness program off the ground at the follow-up site visit, despite having received a grant to develop one.

In schools where programs were not sustained, school representatives indicated staff turnover and burnout as the prevailing challenges to sustainability of employee wellness efforts. Representatives from schools with sustained efforts also cited staff time needed to implement programs as a challenge. In addition, they cited school employee wellness programs as levers they used to engage more staff in the school wellness council and the broader health initiative.

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CHAPTER V

DISCUSSION

The passage of the Healthy, Hunger-Free Kids Act of 2010 has created policy momentum for school wellness at the local, state and national levels. As a result of the Child Nutrition and WIC Reauthorization Act of 2004, the vast majority of school districts developed policies, but they greatly varied in comprehensiveness, and very few included a means to monitor and evaluate progress (School Nutrition Association, 2006). Researchers have suggested that the effects of the Child Nutrition and WIC Reauthorization Act of 2004 were modest at best (Belansky et al., 2009). Several studies found that there were no significant changes to school nutrition and physical activity environments in schools as a result of the district wellness policies (Belansky et al., 2010; Belansky et al., 2009; Moag-Stahlberg et al., 2008). Given that the Healthy, Hunger-Free Kids Act of 2010 requires most public school districts to extend upon its wellness efforts, and that research suggests a lack of efficacy in the implementation of its preceding legislation, identifying strategies that will help facilitate actual health-promoting policy and program changes in schools is a timely and important goal.

To that end, this mixed methods case study explored effective strategies for improving the implementation of school wellness policies with the goal of understanding what factors facilitate and hinder effective and quality policy implementation. Specifically, this study explored the results of a consultative technical assistance model aimed at implementing a multicomponent school-based obesity prevention program as a

mechanism for school wellness policy implementation in two large urban districts over a 4-year period. The following research questions were addressed:

1. To what degree does a school-based obesity prevention model result in effective implementation of policies and programs that promote and provide access to healthier foods and more physical activity before, during and after school?

2. Are there particular components of the school-based obesity prevention model that hasten or hinder school-level implementation of policies and programs that promote and provide access to healthy foods and physical activity before, during, and after school?

3. Are there distinctive or common school-level characteristics that hasten or hinder school-level implementation of policies and programs that promote and provide access to healthy foods and physical activity before, during, and after school?

The two large urban school districts began implementation of the same program at different times, and the second case was a replication of the first (Yin, 2009). Simultaneously, the Healthy Schools Program implemented its consultative technical assistance model in school clusters of a high school and all of its feeder elementary and middle schools across the country, which are the schools that comprise the national cohort. Multiple units of analysis were used to explore policy and systems changes, implementation tactics, and school and district characteristics at play within each case.

Findings

This chapter briefly reports the main findings of this study in relation to the previously stated research questions for each cohort. It also compares and contrasts the

results across subjects to draw conclusions about commonalities and differences across cases.

Urban District 1

Eighty-nine percent of schools in Urban District 1 reported making changes to policies and programs that promote and provide access to healthier foods and more physical activity before, during and after school. Findings suggest that these changes were significantly associated with participation in the Healthy Schools Program training and technical assistance opportunities. Schools made a median of 10.12 changes over a 2-to 4-year period; and the levels of change overall and in each content area were statistically significant. The overall effect sizes of changes across content areas were moderate to large. The largest effect size was in the area of school employee wellness (effect size = 1.02) and the smallest effect size was in the area of physical education (effect size = .43). There was a large, cumulative effect size of 1.11 across content areas. Interestingly, a regression analysis found no relationship between time enrolled in the Healthy Schools Program and level of policy and program change. This finding is contrary to previous school reform findings that suggest 3 to 5 years are needed for policy and program change to take hold in schools (Borman et al., 2002).

Findings from the site visits in a subsample of Urban District 1 schools corroborate the large effect size found in the area of school employee wellness. At the time of the follow-up site visit, all subsample schools were implementing school employee wellness programs, and the initial uptake, even at baseline, was quite high.

Several school representatives shared that they began their school wellness work by instituting employee wellness programs as a means of generating buy-in for larger changes amongst the staff.

Quantitative results suggest that the Healthy Schools Program model was associated with policy and program change in Urban District 1 schools. Regression analyses revealed a statistically significant association between participation in Healthy Schools Program technical assistance and policy and program changes in Urban District 1 schools. Specifically, train-the-trainer session attendance and interaction with a Healthy Schools Program content manager were associated with accelerated policy and program change. Regression analysis was repeated for each Healthy Schools Program content area. Findings suggest that schools whose representatives attended train-the-trainer sessions and schools that had received assistance from a national content manager were significantly more likely than other schools to make progress in the areas of school meals and school employee wellness. Only support from a Healthy Schools Program content manager was significantly associated with physical activity changes, and only participation in train-the-trainer sessions was a unique contributor to school progress in the policy and systems area.

Several factors played a role in hastening the level of policy and program implementation achieved by Urban District 1 schools. Schools that had fewer health-promoting policies and programs in place at baseline made more progress, as evidenced by a significant association between a lower baseline inventory score and policy and program progress. The intensive study revealed additional district- and school-level

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factors that contributed to accelerated policy and program change. School representatives often cited the district's role in supporting changes to their overall wellness efforts, particularly in regards to their efforts to offer healthier food options to their students through the school meals program and competitive food and beverage offerings. Specifically, school representatives reported that the district was helpful by establishing a consistent policy for competitive foods and beverages, and by making healthier food items available for school meals preparation. Likewise, school representatives often referenced district physical education requirements when discussing the structure and content of their physical education offerings. Several school representatives shared that professional development on improved physical education and preparation brokered by the district was also helpful.

School representatives almost universally attributed their school's momentum in making changes to one colleague, or a small group of colleagues. These "champions" were consistently credited with establishing health-promoting programs, facilitating the broader participation of staff and students, and leading the school wellness council and action-planning process. Several school representatives also cited the importance of supportive school administrators to the progress that had been made in their schools. However, school administrators were not generally identified as the day-to-day drivers of change in the school building. Several school representatives also identified the infusion of grant-related programs, such as new curricula or a fitness program, as a facilitator of change within their school. However, another pattern of note was that grant-funded, non-curricular efforts were often not sustained after the sunset of the grant.

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Subsample school representatives revealed many common barriers to school-level progress in implementing health-promoting policies and programs. The most frequently cited barriers related to school staff bandwidth and capacity. When explaining why they did not embark on some of the Healthy Schools Program criteria, school representatives at all levels pointed to a shortage of or decline in the numbers of staff. Specifically, staffing shortages were a frequently cited explanation for why the recommended amounts of health education or physical education were not being taught, especially at the elementary and middle school levels. Additionally, a lack of comfort and training in health education methods was cited as a barrier to implementation at all school levels, and the absence of certified physical educators was cited as an implementation barrier at the elementary level.

Funding was also a barrier to implementation of change in Urban District 1 schools. School representatives often mentioned funding cuts and staffing shortages as related challenges, but funding cuts were also associated with some schools' inability to offer healthier school meals and more physical activity opportunities. Several middle school representatives, for example, cited budget cuts or constraints as the reason for eliminating salad bars from the cafeteria, and representatives from all school levels stated that a lack of funds limited their ability to offer more physical activities before, during and after school. State-level school accountability standards seemed to pose barriers to schools implementing health-promoting policy and program changes. Competing demands for time spent on state-assessed curriculum areas, such as reading and math,

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were reported by many school representatives as the reason more time could not be dedicated to health and physical education.

<center>Urban District 2</center>

Ninety-two percent of schools within Urban District 2 reported making changes to their policies and programs that promote and provide access to healthier foods and more physical activity before, during and after school. Schools made a median of 11.0 changes over a 2- to 4-year period; and the levels of change overall and in each content area were statistically significant. The overall effect size of changes across content areas ranged from small to large. The largest effect size was in the area of school meals (effect size = .90), and the smallest effect size was in the area of policy and systems (effect size = .21). There was a large, cumulative effect size of 1.09 across content areas. A regression analysis found a significant relationship between time enrolled in the Healthy Schools Program and level of policy and program change.

Findings from the site visits in a subsample of Urban District 2 schools corroborate the large effect size found in the area of school meals. At the time of the follow-up site visit, the district school foods director and the majority of subsample school representatives reported marked improvements in the nutritional quality of their school meals. Specifically, both district- and school-level representatives reported that school meal options included lower fat options, more fruits and vegetables, and smaller portions than at baseline. At the time of the follow-up site visits, the district had also changed vendors for school meals provided in schools without kitchen facilities, and in

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the process, required that the new vendor meet Healthy Schools Program nutritional guidelines for meals.

Quantitative results did not indicate that the Healthy Schools Program training and technical assistance was associated with policy and program change in Urban District 2 schools. Regression analyses revealed no statistically significant association between (a) participation in Healthy Schools Program train-the-trainer sessions or engagement with a national content manager, and (b) policy and program changes in Urban District 2 schools. Regression analyses that were repeated for each Healthy Schools Program content area also revealed no significant relationship between Healthy Schools Program technical assistance and policy and program changes in Urban District 2 schools.

Several factors played a role in facilitating the level of policy and program implementation achieved by Urban District 2 schools. Schools that had more health-promoting policies and programs in place at baseline made more progress, as evidenced by a significant association between a higher baseline inventory score and policy and program progress. The intensive study revealed additional district- and school-level factors that contributed to accelerated policy and program change. School representatives almost universally attributed their school's momentum in making changes to a supportive school administrator. Several representatives mentioned that the administrative support enabled them or their colleagues to make necessary change in their schools. Consequently, school wellness council leaders were cited as the drivers within their school buildings. School representatives also commonly mentioned that changes became easier to make over time because the students and their families were generally receptive

to the changes. Many shared that students became advocates for healthier foods amongst their peers, making it easier to sustain offering healthier foods and beverages over time. Conversely, many school representatives mentioned that their colleagues were less supportive of changes to competitive food and beverage options because they feared that stocking vending machines with healthier items would reduce revenue available for student clubs, intramurals, and athletic programs.

Some school representatives mentioned that the district had been helpful by (a) establishing a consistent policy for competitive foods and beverages, (b) making healthier meals available through the provision of a new vendor, and (c) increasing professional development opportunities on physical education. School representatives pointed to community partnerships as the lynchpin for most successful after-school programs and additional physical activity opportunities for students. For example, at the time of the follow-up site visits, most of the elementary schools were working with an external partner to offer structured recess. Contrarily, some school representatives shared that there was a lack of coordination between after-school program providers and the school, which led to some after-school snacks being less healthy than options during the school day.

Site visit results with subsample schools revealed many common barriers to school-level progress in implementing health-promoting policies and programs. The most frequently cited barriers were funding shortages and budget cuts. School representatives shared that these budget cuts had led to a reduction in staff, meaning that previously offered programs, like health and physical education, were eliminated or were greatly

reduced in scope. Physical education and physical activity opportunities were also limited due to inadequate facilities. In some cases, schools lacked formal physical activity space altogether, and in others, the small spaces were not adequate for the number of students using them at one time. Some of the spaces were in great need of repair. Staff turnover and burnout were the most frequently cited reasons for the stalling of or elimination of school wellness efforts. This seemed to be especially true in regards to the maintenance of a school wellness council and employee wellness programs.

National Cohort

Eighty percent of schools within the national cohort reported making changes to their policies and programs that promote and provide access to healthier foods and more physical activity before, during and after school. Findings suggest that these changes were significantly associated with participation in the Healthy Schools Program training and technical assistance opportunities. Schools made a median of 7.53 changes over a 2- to 4-year period; and the levels of change overall and in each content area were statistically significant. The overall effect size of changes across content areas was moderate to large. The largest effect size was in the area of school employee wellness (effect size = .70), and the smallest effect size was in the area of physical education (effect size = .43). There was a large effect size of .84 across content areas. A regression analysis found a significant relationship between time enrolled in the Healthy Schools Program and level of policy and program change. Findings from the site visits in a subsample of national cohort schools corroborate the large effect size found in the area of school employee wellness.

At the time of the follow-up site visit, all subsample schools were implementing school employee wellness programs. Several interview respondents shared that they had created fitness programs for staff in hopes of building support for broader policy and program changes in the school.

Quantitative results suggest that the Healthy Schools Program training and technical assistance was associated with policy and program change in the national cohort schools. Regression analyses revealed a statistically significant association between participation in Healthy Schools Program technical assistance offerings and policy and program changes in Urban District 1schools. Specifically, train-the-trainer session attendance and interaction with a Healthy Schools Program content manager were associated with accelerated policy and program change. Regression analysis was repeated for each Healthy Schools Program content area. Findings suggest that schools whose representatives attended train-the-trainer sessions and schools that had received assistance from a national content manager were significantly more likely than other schools to make progress in the areas of policy and systems, school meals, competitive foods and beverages, and health education. Only support from a Healthy Schools Program content manager was significantly associated with changes in the areas of physical education, physical activity, before- and after-school programs, and school employee wellness.

Several factors that played a role in hastening the level of policy and program implementation seen in the national cohort schools were revealed by the quantitative and qualitative results. Schools that had fewer health-promoting policies and programs in place at baseline made more progress, as evidenced by a significant association between a

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lower baseline inventory score and policy and program progress. National cohort school representatives consistently mentioned an active school champion or school wellness council, supportive state or district policies and programs, and infusion of external training and key resources as the prevailing facilitators for health-promoting policy and program change. Other commonly cited facilitators were a supportive school administrator and student receptivity to change.

School representatives pointed to internal champions as the catalysts of change. These school champions (or school wellness councils) were particularly credited for driving school-level policy changes, engaging students in wellness efforts, improving health education programs, and running school employee wellness initiatives. State or district policy changes were also identified as key drivers of change, especially in the realms of school meals, competitive foods and beverages, and health education. At least one school representative from each of the subsample schools mentioned higher level policies as the reason their districts undertook certain initiatives. Several school representatives also reported that the district was helpful by providing healthier competitive foods and beverages options, making healthier food items available for school meals preparation, and increasing training opportunities for cafeteria managers and health educators. In addition to district-level training sessions, school representatives mentioned that the introduction of an external resource, like the Healthy Schools Program or an external after-school provider, increased collective staff interest and participation. Student receptivity to change, particularly in the areas of healthier foods were cited as an important facilitator of change by many school representatives. Students were often

enlisted to participate in taste tests to help determine school meal offerings or to promote the merits of healthier vending options to their peers. Many school representatives also discussed the importance of their school administrator's support in making the school healthier, but few mentioned that their administrator was actively involved in the efforts.

School representatives cited many common barriers to school-level progress in implementing health-promoting policies and programs. The most frequently cited barriers were the cost of making change, staffing time, curricular time, availability of healthier foods, and limited facilities. The cost of making policy and program changes was a universal concern among school representatives in the national cohort. The challenge of cost played the largest role in the provision of more fresh fruits and vegetables and whole grains into school meals, as well as in offering additional physical activity opportunities for students. An added challenge in the school meals realm was availability of healthier products, especially at a realistic price point for schools.

School representatives discussed lack of staff time and curricular time as key barriers to implementation. Many activities—e.g., an active school wellness council, employee wellness programs, and intramurals—relied upon school staff to extend their hours, sometimes without pay. Though many staff reported their willingness to dedicate this time for a while, the model seemed to fail over time and appeared to be responsible for the lack of sustainability of many efforts between the baseline and follow-up visits. Similarly, when explaining why they did not implement certain components of the Healthy Schools Program framework, or why they had ceased offering programs, like intramurals or elementary physical education, school representatives pointed to a shortage

of or decline in the numbers of staff. A lack of curricular time was also a common barrier to offering recommended amounts of health and physical education. Several school representatives shared that their schools had prioritized extra reading or math instruction over these subject areas due to state accountability standards. Limited facilities were also cited as a challenge in offering quality physical education, after-school programs, and quality school meals. Specifically, a lack of kitchen or cafeteria space forced some schools to rely upon primarily prepackaged food items.

Commonalities and Differences Between Cases

Findings across the three cohorts reveal many commonalities and some differences in relation to the research questions. The findings of this study are fairly consistent with the existing body of evidence on facilitators and barriers to policy and systems change in schools.

Impact of the Healthy Schools Program on Policy and Program Change

Analyses suggest that, during their tenure in the Healthy Schools Program, all of the cohorts made significant changes to their policies and programs that promote healthier eating and physical activity. Statistically significant changes were found overall and in each Healthy Schools Program content area. Effect sizes for total change were also quite high across cohorts, ranging from .84 to 1.11. A one-way ANOVA to compare results across cohorts indicated statistically significant differences between cohorts in the total progress made and in the areas of health education, physical education, physical activity,

and school employee wellness. A Tukey-B post hoc test to compare each of the cohorts' results to one another suggested that Urban District 1 and Urban District 2 made more overall progress in implementing health-promoting policies and programs than did the national cohort schools. Likewise, the urban school cohorts made significantly more progress in advancing school employee wellness programs. Analyses also showed that Urban District 2 made significantly more progress than Urban District 1 and the national cohort in improving health education and physical education programs. Urban District 2 also made significantly more progress in adding physical activity opportunities than the national cohort.

The qualitative data provide some explanation for why these differences in progress may exist. The difference in overall progress between schools in the urban cohorts and the national cohort may be partially related to a deeper district involvement in the Healthy Schools Program and the consequent district policy changes. At the time of follow-up site visits, both Urban District 1 and Urban District 2 had updated their district wellness policies to include a requirement that all schools in the district complete the Healthy Schools Inventory and develop a school wellness action plan on an annual basis, whereas there were no cited changes to the district wellness policies between baseline and follow-up site visits in the national cohort subsample schools. In addition, both urban districts had adopted the Alliance competitive food and beverage standards, whereas some school districts represented in the national cohort had adopted the Alliance guidelines and some had not, leaving it to individual schools to negotiate with vendors. The same held true for school meals vendors. District-level changes and support were

cited as a facilitator to change more often by school representatives from the urban district than the national cohort.

These findings are consistent with prior research on effective implementation of school reform. The body of evidence, especially from the Comprehensive School Reform Programs and New American Schools studies, points to the importance of district commitment and the development and implementation of support systems to support school-level policy reform over time. Desimone (2002) found that it is important for districts to send consistent messages about their support for systems change through policies, funding priorities, and curriculum guidance that supports implementation, which was the case in Urban District 1 and Urban District 2. Though the importance of district-level support is not a prevalent finding in the existing school wellness policy implementation literature (Bauer et al., 2006; Franks et al., 2007; Kelder et al., 2003; Pearlman et al., 2005; Staten et al., 2005), such support has been consistently found to be important in sustaining school wellness efforts over time. Specifically, Epstein (2005) and Bauer et al. (2006) suggested that the district must establish policy and fiscal support to ensure sustainability of school wellness efforts. The policy changes that Urban District 1 and Urban District 2 made at the time of the follow-up site visits are, at least, one step towards aligning with what is necessary for sustainability of change.

Effect of Components of the Healthy Schools Program

on Policy and Program Change

School participation in Healthy Schools Program train-the-trainer sessions and support from a national content manager was significantly associated with policy and program change in the national cohort and Urban District 1, but not Urban District 2. There are very few clues in the available data that explain this difference in outcomes. Urban District 2 schools had the highest rates of participation in train-the-trainer sessions and shared a similar district policy context with Urban District 1. One noticeable finding within the site visits was that Urban District 2 school representatives were more likely to cite community collaborations as drivers of their wellness policy change. It is possible that the level at which Urban District 2 schools leveraged other community experts in various aspects of their overall school wellness program diluted the effect of the Healthy Schools Program technical assistance offerings.

In addition to overall progress, changes to the school meals program were also found to be significantly associated with both school participation in train-the-trainer sessions and engagement of a national content manager in Urban District 1 and the national cohort, and the engagement of a national content manager was significantly associated with increased physical activity opportunities for students in both aforementioned cohorts. Policy and systems changes were significantly associated with both train-the-trainer session participation and content manager assistance in national cohort schools, but only train-the-trainer session attendance in Urban District 1 schools.

In either Urban District 1 or the national cohort, changes made in the areas of competitive foods and beverages, physical education, health education, school employee wellness, and before- and after-school programs were significantly associated with either train-the-trainer session participation or national content manager engagement, but not both. This finding is not surprising because, by design, schools are given the opportunity to work on the various aspects of the Healthy Schools Program in whatever order they deem appropriate for their local context. Consequently, schools accessed Healthy Schools Program content experts at varying rates and junctures during their tenure in the program. This design approach and byproduct of implementation is consistent with previous education reform and school wellness implementation literature citing the importance of approaches that are both concrete and tangible, as well as adaptable to many settings (Datnow et al., 2003; Franks et al, 2007; Ross et al., 2004; Spillane, 2000).

A finding that is inherent in the site visit results is that the design of the Healthy Schools Program model, in and of itself, served as an important compass to the policy and program changes reported across cohorts. School representatives from all cohorts consistently referenced the criteria within the Healthy Schools Program best practice framework as benchmarks when discussing policy and program changes and setbacks. References to the criteria were particularly prevalent in the areas of competitive foods and beverages, school meals, health education, and physical education. In fact, both urban districts, as well as several schools in the national cohort, adopted the Alliance competitive food and beverage guidelines, and as previously mentioned, both urban

districts incorporated elements of the Healthy Schools Program continuous improvement model into their district policy.

District- and School-Level Factors Impacting Policy and Program Change

Overall, study findings suggest more commonalities than differences in the district- and school-level characteristics across cohorts that facilitated or impeded policy and program change.

Common Facilitators of Policy and Program Change

Findings across cohorts indicate a common set of district- and school-level factors that contributed to health-promoting policy and program changes. Common factors included (a) an effective school champion or school wellness council, (b) a supportive school administrator, (c) professional development for staff, and (d) supportive district policy. While being common themes, these facilitators of change often manifested themselves differently across schools.

School Champions

The presence of a strong school champion or school wellness council was seemingly the most important school characteristic. This champion or group was oftentimes responsible for maintaining the focus on wellness, designing and implementing new related initiatives, and enlisting other staff and students to help promote wellness in their schools. Conversely, the waning of a school wellness council or

school champion transition was frequently cited as the reason certain programs ceased between baseline and follow-up site visits, reinforcing the central role they played in implementing systems change. The importance of a key school champion is consistent with previous research findings across the board in school reform and school wellness implementation, which suggest that teachers and other school staff play a strong role in the success or failure of policy implementation (Bauer et al., 2006; Franks et al., 2007; Staten et al., 2005; Supovitz & May, 2004).

Supportive School Administrators

Along with a supportive staff, school administrators also play an important role in the success of systemic school wellness efforts. Interestingly, both in focus groups and interviews, almost all school representatives mentioned the influence of school administrators' support, or lack thereof, but very few pointed to any tactical role that school administrators played in actually implementing the program and policy changes. Rather, school administrators were reported to play the role of "cheerleaders" or enablers of the efforts. Previous literature on school wellness policy implementation also points to the importance of a supportive school administrator (Franks et al., 2007; Kelder et al., 2003; Pearlman et al., 2005; Wiecha et al., 2004), though it was not found to be a strongly associative factor in the school reform implementation literature.

Professional Development

Previous studies point to the importance of the school staff feeling adequately trained and prepared to support the intended school-wide change (Supovitz & May, 2004). School representatives from all of the cohorts also discussed the importance of qualified staff and professional development in effecting change. In several cases across the cohorts, the presence or introduction of a certified health or physical educator was associated with an increase in quality health and physical education programs. Elementary school representatives who were not experts in these curricular areas often cited enhanced opportunities for professional development as a helpful boost to their confidence in teaching health or physical education. Cafeteria managers from all three cohorts also mentioned that the professional development they received in healthy food preparation techniques, as well as healthier recipe options, helped them serve healthier foods to their students.

District Policy

School representatives credited supportive district policy as a lever to change within their buildings. As discussed earlier in this chapter, several school districts, including Urban District 1 and Urban District 2, made several changes to their wellness policies to align them with various components of the Healthy Schools Program framework. In addition, school representatives almost always cited district policy as the measuring stick for the amount of health or physical education that was offered. Further, most school representatives reported that they relied upon the district for food items for

school meals and competitive foods and beverages. Thus, the guidelines and policies set by district food service departments greatly influenced the food offered and served at the school level. It is not surprising that this was a consistent theme among school representatives. Previous school reform and school wellness policy implementation research also found that to fully take part in school change efforts, teachers must have confidence that their districts are fully supportive of the policy reform (Berends, 2004; Kelder et al., 2003).

Common Barriers to Policy and Program Change

Findings across cohorts indicate a common set of district- and school-level factors that were perceived to be barriers to health-promoting policy and program changes. Common barriers included (a) the cost of implementation, (b) time, and (c) competing priorities. Like with the facilitators of change, these barriers often manifested themselves differently across schools, but there were common themes.

Cost of Implementation

Nearly all school representatives from across cohorts identified the cost of implementing policy and program changes as a barrier to progress, or at times the reason for the lack of sustainability of changes. An interesting theme that arose across cohorts was school representatives' discussion of both tangible and intangible costs to implementation. The most frequently cited intangible cost was the staff time necessary to plan and implement activities related to the Healthy Schools Program. School

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representatives from the majority of schools described scenarios in which staff freely gave their time to help implement policies and programs recommended by the Healthy Schools Program, such as volunteering to lead a walking club or sitting on the school wellness council. Yet, the fact that they were not being paid for their time was an ever present factor in the minds of school staff in subsample schools. These intangible costs seemed to be most associated with activities outside of the classroom, like the provision of physical activity opportunities for students before, during and after school.

Most of the tangible costs cited related to the provision of healthier school foods. Most district and school food service representatives reported a marked increase of cost associated with adding more fresh fruits and vegetables and whole grain foods to the menu. Several school representatives mentioned that they believed that their schools had lost revenue as a result of offering healthier competitive foods and beverages. Tangible costs were also frequently cited as the reason initiatives had not been sustained. Several schools across cohorts had greatly reduced or eliminated their physical activity programs or before- and after-school program due to budget reductions. Similarly, teacher workforce reduction had a negative impact on the amount of health and physical education taught in several schools. This pattern is consistent with previous school reform and wellness policy implementation research findings that suggest that school districts must not only establish supportive policy, but also fiscal support to ensure sustainability (Bauer et al., 2006; Berends et al., 2002; Desimone, 2002; Epstein, 2005).

Competing Demands

Prior studies point to the importance of alignment between the intended systems change and state and national policy to achieve high levels of implementation of school-level policy and program change (Berends at al., 2002; Desimone, 2002; Moag-Stahlberg, 2008). Competing demands, usually related to accountability for state-assessed academic outcomes and other programs, were often cited as the culprits for limited health or physical education across cohorts. In Urban District 1, for example, health education was rarely taught at the elementary level because of the pressures to align all instruction with state assessments. Similarly, school representatives across cohorts shared that struggling students were often excused from health or physical education to attend remedial reading and math classes.

Time

Time was a commonly cited barrier to change across cohorts. Common barriers related to time can be grouped into (a) instructional time, and (b) staff time for what was perceived as extra duty. In almost all cases in which school representatives indicated that their schools were not meeting recommended levels of health or physical education, or that the time dedicated to these subject areas had declined, it was due to limitations on instructional time. In a few schools, recess had also been cut or reduced to make time for more instruction in reading or math. In many cases this barrier was closely related to the challenge of competing demands.

Real or perceived staff time constraints had a negative impact on the implementation of many wellness-related programs. School representatives regularly shared that the reason their school wellness council was no longer viable was because staff no longer had the time to participate. Similarly, many school employee programs had waned over time due to time constraints on staff leaders, or lack of broad-based participation in program offerings due to time constraints. It is notable that several school representatives discussed time constraints in the context of their contracted day, and that there was a fairly common perception that even employee wellness activities outside that scope were unpaid "extra duty." Some school representatives shared that they had participated in school wellness activities outside of the contracted day for a while, but did not sustain doing so.

Differences Between Cases

There were many more similarities than differences in facilitators and barriers to program and policy change amongst cohorts. However, some themes were unique to the Urban District 2 and national school cohorts. Prior studies suggest that school and district contexts are integral considerations in systems change efforts (Austin et al., 2006; Berends, 2004; Pearlman et al., 2005; Staten et al., 2005), which makes it understandable that these exceptions exist.

School representatives from the national cohort often spoke of student receptivity as highly influential in their decisions about what foods to offer and serve. Students' response to healthier items was sometimes a facilitator of change and sometimes a barrier

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to change. Some schools reported employing strategies to generate student buy-in, such as taste tests to introduce them to new food items. Some national cohort schools blamed the loss of revenue from competitive foods and beverages on lack of student satisfaction. Inadequate facilities were a unique and contributing barrier to serving healthier meals, delivering quality physical education, and enhancing other physical activity opportunities for students. Though this was mentioned by some school representatives in the national cohort, it was an almost universal concern in Urban District 2. This barrier will be a challenging one for schools in Urban District 2 to navigate due to the geographic density of the city.

Study Limitations

The findings of this study should be interpreted conservatively. This case study was exploratory in nature and investigated only a small percentage of schools in the United States. Consequently, the findings are not generalizable to all schools, or even urban schools. This study also did not include a control group and occurred during a time in which the vast majority of school districts in the United States had just developed school wellness policies. As a result, the associations between school policy and program change and the Healthy Schools Program model must be interpreted with caution. The methods and measurement tools used in this study also created some limitations. The Healthy Schools Inventory is a self-report instrument, allowing for variability in the definition of terms and answers to the questions. In two of three cases, schools with lower inventory scores at baseline made more progress than schools with higher baseline scores,

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which could represent regression to the mean or ceiling effects in schools with a higher baseline score. The direct observations, interviews, and focus groups that comprised the Intensive Study did provide for some data for triangulation, but because they occurred only in a subsample of schools within each cohort, they do not corroborate all of the quantitative results. It is also notable that the site visitors varied between cohorts, and my secondary review of the data suggested that site protocols were not always applied consistently, which in some cases limited the extent of the extant data available for each cohort.

Opportunities for Further Research

Though this study contributes to the understanding of what hastens and hinders systems change in schools, it also surfaces some additional questions worthy of further investigation. Study results suggest a link between training and technical assistance, but they do not indicate what specific dosage of technical assistance and training is necessary to generate program and policy change in schools. Given that time and funding were prevalently cited barriers to full implementation of the Healthy Schools Program, a clear prescription regarding the amount of technical assistance necessary would be helpful guidance for current and future school reform models. Further study of the levers of sustainability of systems change would also be quite helpful. Though the question of sustainability was beyond the scope of this study, the results of the follow-up site visits did suggest that sustainability of effort was already a danger to institutionalizing change in study schools.

Competing demands to meet state performance standards was a commonly cited barrier across cohorts. Further exploration of whether there is a relationship between policies and programs that promote physical activity and healthy eating and student performance could lead to a broader educational commitment to school wellness programs. Recognizing the budget and time constraints facing schools, these studies would be most helpful if they teased out which specific policy and program changes have the most impact on student performance. Likewise, economic modeling studies that suggest the costs of implementation, as compared to the return on key student performance indicators, would also be helpful.

Overall Implications for Policy and Program Change in Schools

The results of this study contribute to the current understanding of how effective systems change occurs in schools and can be used to inform future design and development of other school wellness policy implementation efforts. This is timely in that the passage of the Healthy, Hunger-Free Kids Act of 2010 and its resulting shifts to school nutrition guidelines will require almost all public schools to make related policy and program changes.

The findings suggest that schools can make policy and program changes when provided with a clear framework for doing so. At least 80% of study schools across cohorts made a significant number of policy and program changes during their tenure in the Healthy Schools Program. Focus group and interview results suggested a heavy reliance on the Healthy Schools best practice criteria in informing their program and

policy change direction. The importance of a clear framework is supported by the prior literature on school wellness and school reform implementation (Datnow et al., 2003; Franks et al, 2007; Ross et al., 2004; Spillane, 2000).

Results also suggest that technical assistance and training provided by an external consultant can hasten progress in policy and systems change at the school level and, thus, should be a consideration in designing any policy implementation effort. In two of three cohorts, participation in Healthy Schools Program training sessions and contact with a national content expert was significantly associated with hastened progress. Focus group and interview results reinforced school staff reliance on the Healthy Schools Program continuous improvement process and staff to guide their efforts towards change. These findings corroborate findings in several previous school wellness implementation studies that suggest a significant correlation between the use of an external facilitator and successful program, policy, and environmental change (Baranowski et al., 2002; Katz et al., 2008; Kropski et al., 2008; Peterson & Fox, 2007; Thomas, 2006).

Findings of this study suggest that individual schools will make more program and policy change when their districts, as a whole, commit to the same approach. Analyses indicated that schools in Urban District 1 and Urban District 2 made significantly more progress than the national schools cohort. At the time of the follow-up site visits, both districts had revised their district wellness policy to require schools to annually assess the health of their school environments and to include a school wellness goal as part of their annual school improvement plan. These districts had also adopted the Alliance's competitive food and beverages guidelines as policy by the time of the

follow-up visit. In essence, the districts had established the policy support to facilitate sustainability of the systems change, one of the two elements that previous research identifies as important for sustaining systems change (Bauer et al., 2006; Berends et al., 2002; Desimone, 2002; Epstein, 2005).

APPENDIX A

HEALTHY SCHOOLS PROGRAM INVENTORY

Policy/Systems

1. Our district has adopted a wellness policy containing the elements required by the 2004 Congressional Child Nutrition reauthorization.

   ☐ Yes

   ☐ No

2. The status of activities that support the implementation of our wellness policy are communicated at least annually to students, families and school staff.

   ☐ Yes

   ☐ No

   ☐ Our district has not adopted a wellness policy

3. Our school has convened a wellness council/committee that meets at least every other month during the school year.

   ☐ Yes

   ☐ No

4. Our school's wellness council/committee includes and fosters the participation of representatives with the varying linguistic, cultural and socio-economic backgrounds of the student population.

   ☐ Yes

   ☐ No

   ☐ Our school does not have a wellness council/committee

5. Our school's wellness council/committee includes at least one student-family member representative as an active member.

   ☐ Yes

   ☐ No

   ☐ Our school does not have a wellness council/committee

6. All parents and guardians have the opportunity to provide meaningful input into the development and implementation of school health and wellness activities.

   ☐ Yes

   ☐ No

7. The following policy/systems features exist in our school (please mark all that apply):

☐ Drinking water is available to all students free of charge at all times during the school day

☐ Our district or school has adopted administration regulations (procedures/policies) for the wellness policy

☐ School wellness is a standing agenda item on the site council and/or parent group meetings

☐ Students have the opportunity to provide meaningful input into the development and implementation of school health and wellness activities

☐ School grounds are open to students, their families and the community for access to physical activity

☐ Our district or school has established a progress reporting mechanism for implementation and evaluation of the wellness policy

☐ Our district or school has secured funds to implement our school health/wellness action plan

☐ Goals from the school health/wellness action plan are integrated into the overall School Improvement Plan

☐ Our school tracks students' body mass index and fitness levels and reports those numbers in aggregate on an annual basis

☐ Our school building, grounds and athletic/play equipment are regularly monitored for safety and environmental quality (water, air, pest, lighting, defects, etc.)

☐ Our district wellness policy includes a statement that acknowledges the importance of diversity and culturally inclusive practices in school wellness efforts

School Meals Programs

8. School participates in the National School Breakfast and Lunch Programs or in independent breakfast and lunch programs that meet USDA nutrition standards.

☐ Yes
☐ No

9. The National School Breakfast and Lunch Programs or the independent meals programs meet USDA access standards with a plan in place to avoid "overt identification" of students who qualify for free or reduced-price meals

☐ Yes
☐ No

10. School breakfast and lunch programs meet USDA School Meals Initiative (SMI) standards for reimbursable meals.

☐ Yes

☐ No

11. Annual training, covering techniques such as reducing fat and sodium in food preparation, and portion control, is completed by 100% of food service staff who prepare and serve meals

☐ Yes

☐ No

12. The following are done as a part of our school meals program (please mark all that apply):

☐ Breakfast and lunch menus are in alignment with applications for free and reduced-price meals by way of being printed/available in the language(s) that parents primarily speak

☐ The school conducts yearly taste tests of foods that are representative of the variety of religions and cultures that make up the school student community

☐ The cafeteria uses an electronic point-of-sale system that protects low-income students participating in the free or reduced-price meal program from being stigmatized

13. Our school offers only whole grains daily at breakfast and lunch.

☐ Yes

☐ No

14. The following school meals program features exist in our school (please mark all that apply):

☐ Offers only 1%, ½% or fat-free milk (flavored or unflavored; flavored milk must contain no more than 150 calories per 8 oz.)

☐ Half of all grains offered daily, at breakfast and lunch, are whole grains

☐ At least one fruit (fresh, canned or frozen in fruit juice or light syrup) is offered at breakfast

☐ Offers at least four non-fried, no-added-sugar fruit and/or vegetable options daily (salad can serve as one of the four)

☐ Offers at least one low-fat entree choice at lunch with $\leq 35\%$ calories from fat, $\leq 10\%$ calories from saturated fat, 0 g trans fat and ≤ 480 mg sodium

☐ Uses only unsaturated (no more than 1 g saturated fat), zero trans fat oils during on-site (post-manufactured) food preparation

☐ Serves only non-fried food products (food products that have not been pre-fried, flash fried, or par-fried during the manufacturing process) and uses no deep fat frying in food preparation

☐ Offers non-fried fish at least one time per week

☐ Offers only lean protein products such as lean red meat, skinless poultry, lean deli meats, fat-free or low-fat cheese, beans, tofu, etc. (Lean: less than 10 g fat, 4.5 g or less saturated fat, and less than 95 mg cholesterol per serving and per 100 g.)

☐ Offers a daily salad with three fruits or vegetables in addition to lettuce/lettuce mix. If dressing is offered, must be portion controlled, 1 oz. low-fat or no-fat dressing

☐ Offers only desserts that meet the Alliance Competitive Foods Guidelines

☐ Implemented a written food safety plan for preparation and service of school meals, based on Hazard Analysis Critical Control Point (HACCP) principals as identified by USDA's guidance

Competitive Foods& Beverages

15. At our school, all beverages offered for sale to students outside of the school meals program during the regular and extended school day meet or exceed the Alliance School Beverage Guidelines.

☐ Yes

☐ No

☐ No beverages are sold in our school

16. Our school has created an inventory of all competitive foods currently offered and taken the following actions (please mark all that apply):

☐ Completed an inventory of all competitive foods currently offered in vending machines, on a la carte lines, as fundraisers, and school stores and on snack carts to identify which meet the Alliance Competitive Foods Guidelines

☐ Created a list of competitive foods available from vendor(s) that meet the Alliance Competitive Foods Guidelines

☐ Developed a written policy stating that all competitive foods will be compliant with the Alliance Competitive Foods Guidelines within 12 months and sent this policy to parents and guardians

☐ Ensured all new Requests for Proposals and/or Requests for Quotes that contain competitive foods and are issued during this school year (even if effective for future school years) include only competitive foods that meet the Alliance Competitive Foods Guidelines

□ Lowered the price of compliant competitive foods and raised the price of non-compliant foods in all areas where competitive foods are sold

□ Substituted at least two non-compliant food fundraisers with non-food alternatives or with only products that meet the Guidelines

□ Conducted one or more initiatives with an evaluation component to engage students in leading change toward healthier competitive foods at the school

□ Conducted a marketing campaign with evidence of input from students, school staff, administration and food service staff to promote nutritious snack choices in all areas where competitive foods are sold

17. All competitive foods *offered* for sale to students outside of the school meal program during the regular and extended school day meet or exceed the Alliance Competitive Foods Guidelines.

   □ Yes

   □ No

   □ No food is sold outside the reimbursable meals program

18. With the exception of a maximum of two times per year, all beverages *served* to students outside of the school meals program during the regular and extended school day, including school and classroom parties, meet the Alliance School Beverage Guidelines.

   □ Yes

   □ No

19. With the exception of a maximum of two times per year, all competitive foods *served* to students outside of the school meals program during the regular and extended school day, including school and classroom parties, meet the Alliance Competitive Foods Guidelines

   □ Yes

   □ No

Health Education

20. Our school requires that every student enrolled in the *Kindergarten through 5th grades* receives skills-based instruction on healthy eating and physical activity as part of a dedicated comprehensive health education program.

   □ Our school does not contain any of these grades

   □ Yes

   □ No

21. Our school requires that every student enrolled in the 6th through 8th grades receives skills-based instruction on healthy eating and physical activity as part of a dedicated, stand alone, term-long health education course, or the equivalent.

☐ Our school does not contain any of these grades

☐ For at least one term during one year

☐ For at least one term during two years

☐ For at least one term during each year

☐ Our school does not require or requires less than one term of Health Education

22. Our school requires that every student enrolled in the 9th through 12th grades receives skills-based instruction on healthy eating and physical activity as a part of a dedicated, stand alone, term-long health education course.

☐ Our school does not contain any of these grades

☐ For at least one term

☐ For the equivalent of two terms

☐ For the equivalent of three terms

☐ Our school does not require or requires less than one term of Health Education

23. The following are true of the Health Education program at our school (please mark all that apply).

☐ Planned healthy eating and physical activity instruction is aligned to the national/state health education standards

☐ Our district or school utilizes the CDC's Health Education Curriculum Analysis Tool (HECAT) healthy eating and physical activity modules to assess these topics in our health education curriculum

☐ Our district or school ensures that our health education curriculum aligns with the CDC's Health Education Curriculum Analysis Tool (HECAT) healthy eating and physical activity modules

☐ Health education is taught by trained teachers at the elementary school level or teachers certified/licensed in health education at the secondary level

☐ All teachers who teach health education receive annual professional development on effective practices for health education, including physical activity and healthy eating, for a minimum of three contact hours at the elementary level and eight contact hours at the middle and high school levels

☐ Healthy eating and physical activity messages are integrated into other subject areas

☐ At the middle and high school levels, health education electives offering additional instruction on healthy eating and physical activity are offered

☐ Health education curriculum instructional strategies and examples are inclusive of the diversity of the student population

☐ All students are assessed in health education and results are reported on the report card every term that health education is offered

Physical Activity

24. Our school provides the following physical activity opportunities for students (please mark all that apply):

☐ All students have the opportunity to participate in physical activity breaks on a daily basis

☐ Our school has an annual plan for integrating physical activity into most subject areas

☐ At the elementary school level, at least 20 minutes of recess is offered daily

☐ Our school offers a range of competitive physical activity opportunities (including intramural or interscholastic sports) before or after the school day

☐ Our school offers a range of non-competitive physical activity opportunities aimed at engaging students in fun, recreational and life-long learning opportunities before or after the school day

☐ Our school has a plan in place to promote safe walking and bicycling to/from school

School Employee Wellness

25. Our school has (please mark all that apply):

☐ Identified a school employee wellness leader or committee

☐ Obtained administrator's support for development of a school employee wellness program

☐ Conducted a school employee wellness needs assessment with staff

☐ Developed a written school employee wellness action plan based on the results of the needs assessment that at a minimum includes opportunities related to physical activity and healthy eating

26. Our school is implementing our school employee wellness action plan that at a minimum includes opportunities related to physical activity and healthy eating.

☐ Our school does not have a school employee wellness action plan

☐ Yes

☐ No

27. Our school's school employee wellness action plan is evaluated annually.

☐ Our school does not have a school employee wellness action plan

☐ Yes

☐ No

28. Our school's school employee wellness action plan includes opportunities related to (please mark all that apply):

☐ Our school does not have a school employee wellness action plan

☐ Weight Management

☐ Health Screenings

☐ Stress Management

☐ Tobacco Cessation

29. Food and beverages sold and served in the staff lounge and at school-sponsored staff functions meet at least the Alliance High School Beverage and Competitive Food Guidelines.

☐ Yes

☐ No

Physical Education

30. Please mark the number of minutes of physical education that your school requires for all students enrolled in Kindergarten through 5th grades:

☐ Our school does not contain any of these grades

☐ Less than 60 minutes per week

☐ 60 - 89 minutes per week

☐ 90 -149 minutes per week

☐ 150 minutes or more per week

31. Please mark the number of minutes of physical education that your school requires for all students enrolled in the 6th through 8th grades:

☐ Our school does not contain any of these grades

☐ Less than 90 minutes per week

☐ 90 - 134 minutes per week

☐ 135 - 224 minutes per week

☐ 225 minutes or more per week

32. Please mark the number of years your school requires for all students enrolled in the 6th through 8th grades to participate in physical education:

☐ Our school does not contain any of these grades

☐ None

☐ One year

☐ Two years

☐ All years

33. Please mark the number of years of physical education that your school requires for all students enrolled in the 9th through 12th grades:

☐ Our school does not contain any of these grades

☐ Less than ½ year

☐ At least the equivalent of ½ year, but less than 1 year

☐ At least the equivalent of 1 year, but less than 1.5 years

☐ At least the equivalent of 1.5 years

34. If the school is a middle or high school, the school offers opportunities for all students in all grades to enroll in physical education courses beyond what is required.

☐ Our school is an elementary school

☐ Yes

☐ No

☐ Our school requires PE for all students at all grades so additional PE is not offered

35. If the school is an elementary school, physical education is taught by:

☐ Our school is a middle or high school

☐ Appropriately trained classroom teachers

☐ Licensed or certified physical educators

☐ Our school does not teach physical education

36. If the school is a middle or high school, physical education is taught by:

☐ Our school is an elementary school

☐ Appropriately trained classroom teachers

☐ Licensed or certified physical educators

☐ Our school does not teach physical education

37. The following are true of the Physical Education programs at our school (please mark all that apply):

☐ Physical education is based on a sequential curriculum map that is aligned to the national and state (if applicable) standards for physical education

☐ Students are moderately to vigorously active for at least 50% of physical education class time

☐ All students are assessed in mastery of skills and content in physical education and results are on the report card every term that physical education is required

☐ The student/teacher ratio in physical education is comparable with other classes at all grade levels

☐ Physical education classes are appropriately modified or adapted to promote the participation of all students in physical education (in particular students with chronic health conditions and special needs)

☐ All teachers who teach physical education receive annual professional development on effective practices in physical education for a minimum of eight contact hours

☐ Physical education instructional strategies and other practices support needs of the diversity of student population

☐ Our district or school utilizes the CDC's Physical Education Curriculum Analysis Tool (PECAT) to assess our physical education curriculum

☐ At the middle and high school levels, physical education requirements are not waived for other activities

Before- and After-School Programs

38. The following is true of before- and after-school programs at our school (please check all that apply):

☐ Our school does not offer before- or after-school programs

☐ Before- and after-school program offerings dedicate at least 20 percent of their time to physical activity

☐ At the elementary and middle school levels, a healthy snack is offered as part of the After School Snack Program reimbursed through the USDA or an independent meal program that meets the Alliance Competitive Food and Beverage Guidelines

☐ Before- and after-school programs offer a variety of physical activity opportunities that reflect the diversity and needs among students, families and the community

☐ At the elementary and middle school levels, snacks offered are healthy food and beverage selections that reflect the diverse demographics of the school community

- ☐ Our school encourages students to connect with physical activity opportunities in the community
- ☐ All before- and after-school program staff participate in annual professional development on the importance of and strategies for including physical activity and healthy eating as elements of their programs

Platinum Level

39. The following are true of our school (please mark all that apply):

- ☐ The cafeteria is used as a 'nutrition education' learning laboratory on a weekly basis via programs, promotions, nutrition labeling, special demos or guests, etc.
- ☐ Food is never used as a reward or reinforcement for students
- ☐ District or school restricts food marketing to those foods and beverages that meet the Alliance Beverage and Competitive Foods Guidelines
- ☐ Commercial food and beverage branding is prohibited in non-food environments such as recreational facilities, classrooms and hallways
- ☐ Skills-based instruction on healthy eating and physical activity is provided to every student as a part of a dedicated, stand-alone health education for an equivalent of at least four terms at the high school level
- ☐ Healthy eating and physical activity knowledge and skills taught in health education are reinforced through instruction in Family and Consumer Sciences courses
- ☐ District wellness policy addresses School Employee Wellness programs for all school staff
- ☐ School provides access to before- and after-school programs by offering transportation options
- ☐ District insurance policy covers obesity prevention and treatment services

APPENDIX B

FOOD SERVICE STAFF INTERVIEW PROTOCOL—TIME 1

Introduction to be read by the interviewer

Thanks for taking the time to talk with me today. My name is [interviewer's name] and I am with RMC Research Corporation. We're conducting the evaluation of the Alliance for a Healthier Generation's Healthy Schools Program. As part of the evaluation, we're conducting interviews with a few key staff at several participating schools and districts around the country. The information we collect will help us understand the successes and challenges schools and districts experience developing and implementing their Healthy Schools Program. This interview will take 30–40 minutes.

I'm going to take notes while I talk with you, but I would also like to audiotape the interview to confirm that my notes are accurate. May I have your permission to audiotape this interview?

　　　[Note: Do not audiotape the interview without the respondent's permission.]

1. What is your role in implementing the District Wellness Policy?

2. What challenges have you faced in your school or community in terms of implementing the policy? How are you addressing those challenges?

3. Do you think youth being overweight is a problem in your school?

4. Are you satisfied with the variety and quality of your school's **reimbursable meals** offerings? *[If yes]* In what ways are you satisfied? *[If no]* What are the shortcomings in terms of variety and quality? *[Repeat the questions with regard to the **competitive foods** offerings and the beverage offerings available from the cafeteria and vending machines.]*

5. In your school/school district competitive food program, what are the **healthy** food selections which reflect the cultural demographics of the student population?

6. What steps is your school taking to improve the nutritional quality of the **reimbursable meals** served? What steps is your school taking to improve the nutritional quality of the **competitive foods** served? What worked well? Why do you think it worked? What did not work? Why do you think it did not work?

7. What contracts does your school and district have with beverage manufacturers or distributors and food vendors for the right to sell their products in your school (through vending machines or the cafeteria)? Does your school or district receive a flat fee or an amount based on sales? How much money did your school receive from these contracts last year? Roughly what percentage of your school budget do these contracts represent? What is this money used for? Has the school or the district renegotiated the contracts to meet Healthy Schools Program school recognition criteria?

8. What is your perception of the amount of money your school earns overall by selling food or beverages on school grounds that do not meet Healthy Schools Program criteria?

9. What, if anything, would your school gain or lose if it were to align all food and beverages sold in all school venues, including the cafeteria and vending machines, to Healthy Schools Program criteria?

10. How does menu planning reflect the preferences of the cultures represented by the students in the school or district? How have recipes for culturally preferred foods been adapted to address the standards of healthy food selections?

11. What challenges has the food services program encountered serving fruit and vegetables, lean protein, low-fat foods, and unsweetened beverages to students?

12. How do you as the food services director promote the eating of fruit and vegetables and other nutritious foods by students?

13. What limitations have the food services program encountered buying fresh produce?

14. How are student health and wellness efforts publicized at the school? Is student health and wellness a standing agenda item for school or district meetings?

15. Who is responsible in your school or district for evaluating and reporting progress on the implementation of the wellness policy? Please tell me more about that process. *How often will the evaluating and reporting is to be done?*

16. During the current school year, have you received any technical assistance or training from the Healthy Schools Program's Relationship Manager?

17. What topics did the technical assistance or training sessions cover? In what ways was each of the technical assistance or training sessions you participated in helpful?

18. During the current school year, what types of technical assistance or training on school wellness or obesity prevention has your school received **from outside consultants or other persons not associated with the Healthy Schools Program?** How helpful was this assistance to your school in terms of improving the health of students and staff?

19. What questions, if any, do you have about the overall approach of the Healthy Schools Program and what the program is asking schools to do?

APPENDIX C

FOOD SERVICE STAFF INTERVIEW PROTOCOL—TIME 2

Introduction to be read by the interviewer

Thanks for taking the time to talk with me today. My name is [interviewer's name] and I am with RMC Research Corporation. We're conducting the evaluation of the Alliance for a Healthier Generation's Healthy Schools Program. As part of the evaluation, we're conducting interviews with a few key staff at several participating schools and districts around the country. The information we collect will help us understand the successes and challenges schools and districts experience developing and implementing their Healthy Schools Program. This interview will take 30–40 minutes.

I'm going to take notes while I talk with you, but I would also like to audiotape the interview to confirm that my notes are accurate. May I have your permission to audiotape this interview?

> [Note: Do not audiotape the interview without the respondent's permission.]

Interview questions

20. First I'm going to ask you about the reimbursable school meals in the schools in your district. We visited your district as part of the Healthy Schools Program evaluation in [★MONTH/YEAR★]. At that time, the district had instituted the following healthy nutrition practices related to reimbursable school meals [★SUMMARIZE HEALTHY NUTRITION PRACTICES RELATED TO SCHOOL MEALS IMPLEMENTED AT THAT TIME★]. _____

   ➤ Have you been able to sustain these healthy nutrition practices related to school meals?

   ➤ What helped you sustain these practices?

21. What other changes, if any, has your district made to improve the nutritional value of school meals since we last visited?

   ➤ What factors contributed to your district's ability to make these improvements?

   ➤ What was the cost (e.g., equipment, food costs, staff time) to your district to make these improvements?
   [Note: We are not looking for specific dollar amounts, just types of costs.]

22. Are you satisfied with the variety and quality of the school meals available in the schools in your district?

   1. [If yes]

   ➤ In what ways are you satisfied?

   2. **[If no]**

   ➤ What are the shortcomings in terms of quality and variety?

23. What improvements would you still like to see?

    ➤ What challenges still remain?

24. The next few questions are about the competitive foods and beverages in the schools in your district. At the time we last visited your district, the district had instituted the following healthy nutrition practices related to competitive foods and beverages [★SUMMARIZE HEALTHY NUTRITION PRACTICES RELATED TO COMPETITIVE FOODS IMPLEMENTED AT THAT TIME★].

    ➤ Have you been able to sustain these healthy nutrition practices related to competitive foods and beverages?

    ➤ What helped you sustain these practices?

25. What other changes, if any, has your district made to improve the nutritional value of competitive foods and beverages since we last visited?

    ➤ What factors contributed to your district's ability to make these improvements?

    ➤ What was the cost (e.g., equipment, food costs, staff time) to your district to make these improvements?
    [Note: We're not looking for specific dollar amounts, just types of costs.]

26. Are you satisfied with the variety and quality of competitive foods and beverages available in the schools in your district?

    3. **[If yes]**

    ➤ In what ways are you satisfied?

    4. **[If no]**

    ➤ What are the shortcomings in terms of quality and variety?

27. What improvements would you still like to see in the area of competitive foods and beverages?

    ➤ What challenges still remain?

28. How do you, as the food services director, promote the consumption of fruits and vegetables and other nutritious foods by students and staff?

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29. What limitations has the program encountered in buying fresh produce, whole grain products, and other healthy food and beverage options?

30. Does the district currently have any exclusive contracts with beverage manufacturers or distributors or food vendors to sell their products in the schools in your district, either in the cafeteria or in vending machines?

➣ How is the money received from these contracts used?

5. **[If the district has exclusive contracts with any of the above]**

➣ How long your district has had these contracts and how they have changed over time? Has the district renegotiated any of these contracts in the past two years as a result of participation in the Healthy Schools Program or any other health and wellness initiative?

31. Is there anything else you would like to add about school meals or competitive foods and beverages in your district?

APPENDIX D

HEALTH AND PHYSICAL EDUCATION STAFF

INTERVIEW PROTOCOL—TIME 1

Introduction to be read by the interviewer

Thanks for taking the time to talk with me today. My name is [interviewer's name] and I am with RMC Research Corporation. We're conducting the evaluation of the Alliance for a Healthier Generation's Healthy Schools Program. As part of the evaluation, we're conducting interviews with a few key staff at several participating schools and districts around the country. The information we collect will help us understand the successes and challenges schools and districts experience developing and implementing their Healthy Schools Program. This interview will take 30–40 minutes.

I'm going to take notes while I talk with you, but I would also like to audiotape the interview to confirm that my notes are accurate. May I have your permission to audiotape this interview?

[Note: Do not audiotape the interview without the respondent's permission.]

1. What is your role in implementing the District Wellness Policy?

2. What challenges have you faced in your school or community in terms of implementing the policy with regard to your programmatic responsibilities (health education or physical education)? How are you addressing those challenges?

3. How does your health education program assess the perceptions, beliefs, attitudes, needs, and interests of the various cultural groups in the student population? How does the program then incorporate that information into the health education curriculum?

4. For the current school year, has the district allocated any funds to schools for the implementation of the District Wellness Policy? [*If yes*] Were any funds dedicated specifically to health education? [*If yes*] How were the funds used?

5. Do you think youth being overweight is a problem in your school?

6. Are you satisfied with the variety and quality of your school's food and beverage offerings (e.g., cafeteria and vending machine foods and beverages)? *[If yes]* In what ways are you satisfied? *[If no]* What are the shortcomings in terms of variety and quality?

7. Are you satisfied with the quantity and quality of the health education classes? *[If yes]* In what ways are you satisfied? *[If no]* What are the shortcomings in terms of quantity and quality?

8.   What are the specific health education curricula that are being implemented in your school/district? Who is responsible for teaching the health education curriculum?

9.   As the district curriculum specialist, what challenges do you face in implementing an evidence-based program that includes instruction on healthy eating and physical activity? How are you resolving those challenges?

10.   Who in your school or district is responsible for developing, implementing, and overseeing the Healthy Schools Program? What is your role in the Healthy Schools Program? *Are you involved in the development, implementation, and oversight of the Healthy Schools Program?*

11.   During the current school year, have you received any technical assistance or training from the Healthy Schools Program's Relationship Manager?

12.   What topics did the technical assistance or training sessions cover? In what ways was each of the technical assistance or training sessions you participated in helpful?

13.   During the current school year, what types of technical assistance or training on school wellness or obesity prevention has your school received **from outside consultants or other persons not associated with the Healthy Schools Program?** How helpful was this assistance to your school in terms of improving the health of students and staff?

14.   What questions, if any, do you have about the overall approach of the Healthy Schools Program and what the program is asking schools to do?

15.   What is your role in implementing the District Wellness Policy?

16.   What challenges have you faced in your school or community in terms of implementing the policy with regard to your programmatic responsibilities (physical activities and physical education)? How are you addressing those challenges?

17.   Do you think youth being overweight is a problem in your school?

18.   Are you satisfied with the quantity and quality of your school's physical activities and physical education classes? *[If yes]* In what ways are you satisfied? *[If no]* What are the shortcomings in terms of quantity and quality?

19.   Are you satisfied with the quantity and quality of your school's extracurricular physical activity offerings? *[If yes]* In what ways are you satisfied? *[If no]* What are the shortcomings in terms of quantity and quality?

20.	What attempts has your school made to improve students' physical activity? What worked well? Why do you think it worked well? What did not work well? Why do you think it did not work?

21.	For the current school year, has the district allocated any funds to schools for the implementation of the District Wellness Policy? [*If yes*] Were any funds dedicated specifically to physical education and physical activities? How were the funds used?

22.	Does your physical activities and physical education program have sufficient resources to respond to the needs and interests of the diverse student population, including students with individualized education plans (e.g., students with permanent physical or cognitive disabilities)?

23.	How does your physical activities and physical education program assess the perceptions, beliefs, attitude, needs, and interests of the various cultural groups in the student population? How does the program then incorporate that information into the physical education curriculum?

24.	As physical education staff, what challenges do you face in implementing a physical activities and physical education curriculum that is aligned with state and national standards for physical education? How are you resolving those challenges?

25.	What are the specific physical activities and physical education curricula that are being implemented at your school/district?

26.	Who in your school or district is responsible for developing, implementing, and overseeing the Healthy Schools Program? What is your role in the Healthy Schools Program? *Are you involved in the development, implementation, and oversight of the Healthy Schools Program?*

27.	During the current school year, have you received any technical assistance or training from the Healthy Schools Program's Relationship Manager?

28.	What topics did the training or technical assistance sessions cover? For each of the technical assistance/training sessions you received, in what ways was this assistance helpful to you?

29.	During the current school year, what type of training and technical assistance has your school received on school health/obesity prevention programs **from an outside consultant or other person outside the district not associated with the Healthy Schools Program?** How helpful was this assistance to you/your school in taking steps that will improve the health of your students and staff?

30.	What questions, if any, do you have about the overall approach of the Healthy Schools Program and what the program is asking schools to do?

APPENDIX E

HEALTH AND PHYSICAL EDUCATION STAFF

INTERVIEW PROTOCOL—TIME 2

Introduction to be read by the interviewer

Thanks for taking the time to talk with me today. My name is [interviewer's name] and I am with RMC Research Corporation. We're conducting the evaluation of the Alliance for a Healthier Generation's Healthy Schools Program. As part of the evaluation, we're conducting interviews with a few key staff at several participating schools and districts around the country. The information we collect will help us understand the successes and challenges schools and districts experience developing and implementing their Healthy Schools Program. This interview will take 30–40 minutes.

I'm going to take notes while I talk with you, but I would also like to audiotape the interview to confirm that my notes are accurate. May I have your permission to audiotape this interview?

> [Note: Do not audiotape the interview without the respondent's permission.]

Interview questions

1.   [If not already known] Who is responsible for teaching health education in your school?

2.   What training or level of teacher certification or licensing is required for those who teach health education at your school?
    ➤ Is annual professional development in health education required?

3.   [Ask the appropriate questions only for the level of school you are visiting. Use your answers to complete the table at the top of page 3.]

K–5 schools only: Does your school provide a dedicated health education program for students?

   [If yes:]
   ☐   In what grades is the program required?

   [If no:]
   ☐   Describe how health education is provided to students in your school. [Probe to find out whether it is incorporated into other classes and if so, into what other classes. Also find out in what grades the integrated health education is provided.]

Grade 6–8 schools only:

Does your school require that students participate in a dedicated, stand-alone, term-long class in health education?

   [If yes:]

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☐ How many terms of health education are required? In what grades is the class required?

[If no:]
☐ Please describe how health education is provided to students in your school.
[Probe to find out whether it is incorporated into other subjects and if so, into what other subjects. Also find out in what grades integrated health education is provided.]

Grade 9–12 schools only:

Does your school require that students participate in a dedicated, stand-alone, term-long class in health education?

[If yes:]
☐ How many terms are required?

[If no:]
☐ Please describe how health education is provided to students in your school.
[Probe to find out whether health education is incorporated into other subjects and if so, what other subjects.]

▶Note for site visitor: Use the data collected in Question 3 to complete this table. Complete the table only for the school level(s) applicable to the students in the school. For example a K–8 school will likely have different requirements for elementary school-aged and middle school-aged students.

Type and Amount of Health Education

	Type of Health Education			Requirements	
	Dedicated, Class/Program	Incorporated Into Other Subjects	No Health Education Offered	Grades Required (Elem/Middle Only)	No. of Terms Required (Middle/High Only)
K–5	☐	☐	☐	_____	
Grades 6–8	☐	☐	☐	_____	_____
Grades 9–12	☐	☐	☐		_____

Note. K–5 criteria require a dedicated, comprehensive program. Grades 6–8 and Grades 9–12 criteria require a dedicated, standalone, term-long class.

4.   Is a formal curriculum used for health education in your school?

   [If yes]
   What curriculum is used? Does this curriculum address healthy eating and physical activity?

   [If no]
   How are healthy eating and physical activity addressed in your health education classes?

5.   Has your school made efforts to integrate information about healthy eating and physical activity into other subjects throughout the day? If so, please describe.

6.   What changes have been made in the health education program at your school since our last site visit in fall 2007?

7.   What factors contributed to these changes?

   If improvements were made:

   What was the cost (e.g., cost of supplies, equipment, staff time) to your school to make these improvements?

8.   What improvements would you still like to see in health education in your school or district? [Probe: Are the quality and quantity of health education sufficient?]

9.   What challenges still remain?

10.   Does your school use the CDC's Health Education Tool (HECAT) and if so, how?

11.   How are students assessed in health education?

12.   Does your school report the results of the assessment on the report card?

13.   Is there anything else you would like to add about how health education is provided at your school?

14.   How many days and how many minutes per week is a student required to participate in physical education at your school? For how many years are students required to participate in physical education?
      [Middle and high schools may offer additional physical education classes as electives.]

	Minimum per Week	Days per Week	Terms per Year	No. of Years	Add'l PE as Elective
Elementary					
Middle					
High					

Note: Complete table ONLY for the school level(s) applicable to the students in the school. For example, a K–8 school will likely have different requirements for elementary school-aged and middle school-aged students.

15. Are these state-, district-, or school-level requirements?
    [Requirements may come from all 3 levels or a combination of levels. Please get specific information.]

16. Does the school meet these requirements and if not, what amount of physical education do students receive?

17. [Middle/high school only] What types of elective physical education classes do you offer for students beyond what is required?

18. Are those who teach physical education at your school classroom teachers or designated physical educators?

   6. **[If classroom teacher]**

   ➤ Have they received training in physical education?

   7. **[If designated physical educator]**

   ➤ What training or level of teacher certification or licensing is required?

19. Is annual professional development in physical education required for those who teach physical education?

20. What are the specific physical education curricula that are being implemented at your school/district? Describe.

21. What changes have been made in the physical education program at your school since our last site visit in fall 2007?

   ➤ What factors contributed to these changes?

      8. **[If improvements were made]**

      What was the cost (e.g., cost of supplies, equipment, staff time) to your school to make these improvements?

22. What improvements would you still like to see in physical education in your school or district?

   ➤ Are the quality and quantity of physical education sufficient?]

   ➤ What challenges still remain?

23. Does your school or district use the CDC's Physical Education Analysis Tool (PECAT) to asses the physical education curriculum?

24. How are students assessed in physical education in terms of mastery of skills and content? Are these results reported on the student's report card every term that physical education is required?

25. Is the student-teacher ratio in physical education courses comparable with academic classes at all grade levels in your school?

26. Is there anything else you would like to add about how physical education is provided at your school?

APPENDIX F

HEALTHY SCHOOLS PROGRAM REPRESENTATIVE

INTERVIEW PROTOCOL—TIME 1

Introduction to be read by the interviewer

Thanks for taking the time to talk with me today. My name is [interviewer's name] and I am with RMC Research Corporation. We're conducting the evaluation of the Alliance for a Healthier Generation's Healthy Schools Program. As part of the evaluation, we're conducting interviews with a few key staff at several participating schools and districts around the country. The information we collect will help us understand the successes and challenges schools and districts experience developing and implementing their Healthy Schools Program. This interview will take 30–40 minutes.

I'm going to take notes while I talk with you, but I would also like to audiotape the interview to confirm that my notes are accurate. May I have your permission to audiotape this interview?

      [Note: Do not audiotape the interview without the respondent's permission.]

1. What are the role and responsibilities of the School Wellness Council? What role does the School Wellness Council have in implementing the District Wellness Policy? As the coordinator of the council, what are your specific responsibilities? Do you have other responsibilities within the school or district? *[If yes]* What are they?

2. What challenges have you and the School Wellness Council faced in your school and community in terms of implementing the Healthy Schools Program? How are you addressing these challenges? What successes has the School Wellness Council achieved as a result of your efforts?

3. During the current school year, how many times did the School Wellness Council members observe Healthy Schools Program activities at ____ *[name of school]*? What types of programs and activities were observed?

4. How are student health and wellness efforts promoted and publicized at the school? Is school health and wellness a standing agenda item for staff meetings or other meetings?

5. During the current school year, have you received any technical assistance or training from the Healthy Schools Program's Relationship Manager?

6. What topics did the technical assistance or training sessions cover? In what ways was each of the technical assistance or training sessions you participated in helpful?

7. During the current school year, what types of technical assistance or training on school wellness or obesity prevention has your school received **from outside consultants or other persons not associated with the Healthy Schools Program?** How helpful was this assistance to your school in terms of improving the health of students and staff?

8. What questions, if any, do you have about the overall approach of the Healthy Schools Program and what the program is asking schools to do?

APPENDIX G

HEALTHY SCHOOLS PROGRAM REPRESENTATIVE

INTERVIEW PROTOCOL—TIME 2

Introduction to be read by the interviewer

Thanks for taking the time to talk with me today. My name is [interviewer's name] and I am with RMC Research Corporation. We're conducting the evaluation of the Alliance for a Healthier Generation's Healthy Schools Program. As part of the evaluation, we're conducting interviews with a few key staff at several participating schools and districts around the country. The information we collect will help us understand the successes and challenges schools and districts experience developing and implementing their Healthy Schools Program. This interview will take 30–40 minutes.

I'm going to take notes while I talk with you, but I would also like to audiotape the interview to confirm that my notes are accurate. May I have your permission to audiotape this interview?

     [Note: Do not audiotape the interview without the respondent's permission.]

1.   When we last visited your school, your school [or district] wellness council had accomplished [★SUMMARIZE SCHOOL HEALTH AND WELLNESS ACCOMPLISHMENTS AT THE TIME OF THE LAST SITE VISIT★].

    ➤   Have you been able to sustain what you accomplished?

    ➤   What helped you sustain those accomplishments?

2.   When we last visited your school, your school [or district] wellness council was planning to [★SUMMARIZE SCHOOL HEALTH AND WELLNESS PLANS AT THAT TIME★].

    ➤   Were you able to accomplish that work?

    ➤   What helped you accomplish that work?

3.   What other changes, if any, has your school made to improve student and staff health and wellness at your school since we last visited?

    ➤   What factors contributed to your school's ability to make these improvements?

4.   Since our last site visit, what barriers, if any, have you experienced in implementing the Healthy Schools Program?

    ➤   What have you done to try to overcome these barriers?

5.   What has been the cost to your school to implement various aspects of the Healthy Schools Program?
    [Explain that cost might include money (for supplies or equipment), staff (to teach specific classes or run specific programs), or time (to attend meetings or plan or implement specific activities or initiatives).]

6. Thinking specifically about the major aspects of the Healthy Schools Program (i.e., school meals, competitive foods, physical education, physical activity, health education, employee wellness, and before- and after-school program), how did your school achieve improvements in these areas despite the cost?

7. What are the school wellness council's goals for this current year?

   ➤ How about the future—what long term goals do the council have?

8. How do students and parents provide input into the development and implementation of school health and wellness activities?

   ➤ Are there other ways in which students and/or parents have the opportunity to provide input into the school's health and wellness activities (e.g., food taste tests, student surveys about school food, student or parent committee feedback)?

   ➤ How are health and wellness efforts promoted to students, staff, and parents at your school?

9. Are there any other meetings (e.g., school site council, parent-teacher organization) at which school health and wellness is a standing agenda item?

10. How would you characterize the level of support you've received for school wellness efforts from the administration at your school?

    ➤ How about district administration?

11. How would you characterize the level of support that exists for school wellness efforts from the school community (e.g., students, staff, parents)?

12. In what ways, if any, has participating in the Healthy Schools Program aided your school or district wellness efforts?

13. What types of support have you gotten from the Healthy Schools Program's Relationship Manager?

14. Is there anything else you would like to add about the Healthy Schools Program or school health and wellness efforts at your school?

APPENDIX H

PRINCIPAL INTERVIEW PROTOCOL—TIME 1

Introduction to be read by the interviewer

Thanks for taking the time to talk with me today. My name is [interviewer's name] and I am with RMC Research Corporation. We're conducting the evaluation of the Alliance for a Healthier Generation's Healthy Schools Program. As part of the evaluation, we're conducting interviews with a few key staff at several participating schools and districts around the country. The information we collect will help us understand the successes and challenges schools and districts experience developing and implementing their Healthy Schools Program. This interview will take 30–40 minutes.

I'm going to take notes while I talk with you, but I would also like to audiotape the interview to confirm that my notes are accurate. May I have your permission to audiotape this interview?

[Note: Do not audiotape the interview without the respondent's permission.]

1. What is your role in implementing the District Wellness Policy?

2. What challenges have you faced in your school or community in terms of implementing the policy (e.g., lack of funding to carry out mandate; lack of student, staff, or school board support; policy conflicts with other existing policies, etc.)? How are you addressing those challenges?

3. What process is in place to ensure that the District Wellness Policy is followed? Who is responsible for monitoring compliance?

4. Who in your school or district is responsible for evaluating and reporting progress on the implementation of the District Wellness Policy? Please tell me more about that process. *How often are evaluating and reporting to be done?*

5. For the current school year, has the district allocated any funds to schools for the implementation of the District Wellness Policy? [*If yes]* How much money was allocated and what the funds are being used for (e.g., physical education equipment, nutritionist, Staff Wellness Program, etc.)? Is the funding a one-time allocation or a permanent part of the overall district budget?

6. Could you describe your district or school's cultural competency policy? *[By cultural competency policy we mean a policy that takes into account staff ability to function effectively in cross-cultural settings and the impact that language and culture have upon the values, learning style, and behavior of the members of a group. By some definitions low socio-economic status is also considered a culture].* How have your school and district incorporated cultural and linguistic competency into the School Wellness Policy?

7.   In what ways does the school or district assess staff professional development needs in terms of enabling them to be more competent in providing services to ethnically and linguistically diverse students? Describe any ongoing cultural competency training that your school and district provide for staff.

8.   Do you think youth being overweight is a problem in your school?

9.   Are you satisfied with the variety and quality of your school's food and beverage offerings (e.g., cafeteria and vending machine foods and beverages)? *[If yes]* In what ways are you satisfied? *[If no]* What are the shortcomings in terms of variety and quality?

10.   What steps is your school taking to improve the nutritional quality of the **reimbursable meals** served? What steps is your school taking to improve the nutritional quality of the **competitive foods** served? *What worked well? Why do you think it worked? What did not work well? Why do you think it did not work?*

11.   What contracts does your school and district have with beverage manufacturers or distributors and food vendors for the right to sell their products in your school (through vending machines or the cafeteria)? Does your school or district receive a flat fee or an amount based on sales? How much money did your school receive from these contracts last year? Roughly what percentage of your school budget do these contracts represent? What is this money used for? Have your school and district renegotiated the contracts to meet Healthy Schools Program school recognition criteria?

12.   What is your perception of the amount of money your school earns overall by selling food or beverages on school grounds that do not meet Healthy Schools Program criteria?

13.   What, if anything, would your school gain or lose if it were to align all food and beverages sold in all school venues, including the cafeteria and vending machines, to Healthy Schools Program criteria?

14.   Are you satisfied with the quantity and quality of your school's physical activities and physical education classes? *[If yes]* In what ways are you satisfied? *[If no]* What are the shortcomings in terms of quantity and quality?

15.   Are you satisfied with the quantity and quality of your school's extracurricular physical activity offerings? *[If yes]* In what ways are you satisfied? *[If no]* What are the shortcomings in terms of quantity and quality?

16.   What attempts has your school made to improve students' physical activity? What worked well? Why do you think it worked? What did not work well? Why do you think it did not work?

17. In what ways do your school's physical activities and physical education and health education programs respond to the needs and interests of the various cultures represented by the student population?

18. Does the school or district include training in cultural competence for physical education faculty? Are specific competencies and benchmarks included in staff evaluations?

19. Are you satisfied with the quantity and quality of your school's health education classes? *[If yes]* In what ways are you satisfied? *[If no]* What are the shortcomings in terms of quantity and quality?

20. What are the key components of your school's or district's Staff Wellness Program? Has the Staff Wellness component of the District Wellness Policy been implemented yet? *[If yes]* Who is responsible for its implementation and what activities have taken place?

21. What types of formal or informal support do the school and district provide to promote staff wellness messages in a language and cultural context that is meaningful to staff of various cultural backgrounds?

22. How did you become aware of the Healthy Schools Program? How was it decided that your school would participate in the Healthy Schools Program? Did your school sign on to the Healthy Schools Program before or after your district developed its District Wellness Policy? If your school signed on before the policy was developed, did participation in the Healthy Schools Program influence the development of the District Wellness Policy?

23. Who in your school or district is responsible for developing, implementing and overseeing the Healthy Schools Program? What is your role in the Healthy Schools Program? *Are you involved in the development, implementation, and oversight of the Healthy Schools Program?*

24. During the current school year, have you received any technical assistance or training from the Healthy Schools Program's Relationship Manager?

25. What topics did the technical assistance or training sessions cover? In what ways was each of the technical assistance or training sessions you participated in helpful?

26. How do you see the Healthy Schools Program complementing your school's overall school improvement efforts? What would facilitate the implementation of the Healthy Schools Program at your school? What would impede the implementation of the Healthy Schools Program?

27. What areas of your Healthy Schools Program do you need assistance with?

28.   During the current school year, what types of technical assistance or training on school wellness or obesity prevention has your school received **from outside consultants or other persons not associated with the Healthy Schools Program?** How helpful was this assistance to your school in terms of improving the health of students and staff?

29.   What questions, if any, do you have about the overall approach of the Healthy Schools Program and what the program is asking schools to do?

APPENDIX I

PRINCIPAL INTERVIEW PROTOCOL—TIME 2

Introduction to be read by the interviewer

Thanks for taking the time to talk with me today. My name is [interviewer's name] and I am with RMC Research Corporation. We're conducting the evaluation of the Alliance for a Healthier Generation's Healthy Schools Program. As part of the evaluation, we're conducting interviews with a few key staff at several participating schools and districts around the country. The information we collect will help us understand the successes and challenges schools and districts experience developing and implementing their Healthy Schools Program. This interview will take 30–40 minutes.

I'm going to take notes while I talk with you, but I would also like to audiotape the interview to confirm that my notes are accurate. May I have your permission to audiotape this interview?

      [Note: Do not audiotape the interview without the respondent's permission.]

1.   We last visited your school in [★MONTH/YEAR★] as part of the evaluation of the Healthy Schools Program. What changes, if any, has your school made to improve student and staff health and wellness at your school since then?

     ➤ What factors contributed to your school's ability to make these improvements?

2.   Since our last site visit, what barriers, if any, have you experienced in implementing the Healthy Schools Program?

     ➤ What have you done to try to overcome these barriers?

3.   What has been the cost to your school to implement various aspects of the Healthy Schools Program?
     [Explain that "cost" might include money (for supplies or equipment), staff (to teach specific classes or run specific programs), or staff time (to attend meetings or plan or implement specific activities or initiatives).]

     ➤ In order to implement the program, did the school or district allocate funds? Receive additional funds from other sources?

4.   How do students provide input into the development and implementation of school health and wellness activities?

     ➤ Are there ways in which parents have the opportunity to provide input into the school's health and wellness activities?

5.   How would you characterize the level of support that exists for school wellness efforts from the school community (e.g., students, staff, parents)?

6.   In what ways, if any, has participating in the Healthy Schools Program aided your school or district wellness efforts?

7.   Are there any other health and wellness programs that your school is involved in?

   If yes:

   ➤ What are those programs? How do they differ from the Healthy Schools Program?

8.   Are the outdoor play areas and fields accessible to students, staff, and the community outside of school hours? Are the indoor recreation areas, (i.e., gym, weight room, etc.) accessible to students, staff, and the community outside of school hours?

9.   Have you seen a copy of your district's wellness policy?

   ➤ Is it available on the school's or district's website?

   ➤ To your knowledge, have there been any changes or updates to the district's wellness policy since the policy was first adopted?

10.   Is there anything else you would like to add about the Healthy Schools Program or school health and wellness efforts at your school?

APPENDIX J

FOCUS GROUP PROTOCOL—TIME 1

Introductory Comments and Instructions

[*Distribute the focus group sign-in sheet and ask participants to print their name and title or role on the School (or District) Wellness Council.*]

Thanks for taking the time to talk with us today. My name is [*moderator's name*] and this is [*notetaker's name*]. We are both with RMC Research and our job is to help evaluate the Alliance for a Healthier Generation's Healthy Schools Program. As part of the evaluation, we're conducting these focus groups at several participating schools and districts around the country. The information we collect will help us understand the successes and challenges schools and districts experience developing and implementing their Healthy Schools Program.

[*Pass out the nametags and markers and explain:*] Please write your first name on the nametag. We'll address you by name in the session, but we won't include any names or other identifying information in our report, nor will we share your names or other identifying information with anyone else—so please feel free to speak frankly. [*Pause to allow everyone to put on their nametag.*]

We also want you to know that in this session there are no wrong answers, and its okay not to know the answers to all the questions. Please feel free to share your point of view even if it differs from what others have said.

We are taking notes and would like to audiotape the session. Do we have your permission to audiotape the session? *[Check to see that everyone agrees by nodding their head or saying "yes," do not audiotape the session if even one person does not give permission.]*

Because we have limited time, I may have to move the discussion along before you have finished commenting. This doesn't mean that your comments aren't important. Feel free to share with us at any time comments or concerns you were not able to express during the focus group session. [*Give contact info.*]

[Note: The slash mark (/) in the script should be read as "and/or." Parenthetical notations in gray denote correlations to items in the RMC Research file called Data Maps in Tabular Form. Estimated focus group duration: 2 hours (120 minutes).In our discussion today, I'll ask about your School (or District) Wellness Council and about other councils, committees, or groups in the school or district. Whenever I say "[*name of School (District) Wellness Council*]," I mean *this* group.

1. [*If it is not known who the Chair is*] Which one of you is the Chair? [*Designate with an asterisk on the sign-in sheet.*] (RMC: Context)

2. Tell me about the purpose or mission of [*name of School (or District) Wellness Council*]. What specific tasks does the School (or District) Wellness Council perform? Do you have other tasks or purposes? (School Wellness Council interview Q1)

   Probes: Did the School (or District) Wellness Council exist before the Healthy Schools Program? Does the School (or District) Wellness Council serve non health-related functions (e.g., all student services) or health functions only (e.g., mental health, substance abuse, etc.). Does the School (or District) Wellness Council focus on a single aspect of the Healthy Schools Program (e.g., nutrition, physical activity, staff wellness)*?*

   [*If the district has a District Wellness Council but the school does not have a School Wellness Council]* Does the school plan to form a School Wellness Council? *[If yes]* When do you expect that the School Wellness Council will be

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formed? *[If no]* What are the reasons that the school does not plan to form a School Wellness Council?

Policies

Before we go into details of the [*name of School (or District) Wellness Council*]'s work, I want to ask about programs and policies that were already in place at the school or district level and are similar to those encouraged by the Healthy Schools Program.

3. I understand that your district does/does not have a District Wellness Policy. [*Note: This information should have been obtained from Alliance staff or from telephone interviews with district staff.*

    [*If there is a policy*] Please tell me about the District Wellness Policy.

    Probe: Did the School (or District) Wellness Council play any role in creating the policy?

    (All Interviewees Q1)

    [*If there is no policy*] Please tell me about any efforts toward creating a policy?

    [*If there is a policy but no one knows about it, skip to Question 5*.] (HSI: Policy 1)

4. What rules are in place to ensure that the policy is followed? How might the rules affect your work on [*name of School (or District) Wellness Council]*? [*Note: The intent of this question is to determine how the School (or District) Wellness Council members interpret the policy as it relates to implementation in their school.*]

    [*If there are no rules, skip to Question 5*.] (HSI: Policy 2) (Principal Q3)

5. Has the school or district allocated any funds or other resources to help *[name of School (or District) Wellness Council]* do its work? (Principal Q5; Health Education Q4; Physical Education/Activities Q7; Wellness Coordinator Q4)

[*If yes*] How much money was allocated? What are the funds being used for (e.g., physical education equipment, nutritionist, Staff Wellness Program, etc.)? Is the funding a one-time allocation or a permanent part of the school or district budget?]

[*If no*] Does the school or district plan to allocate funds or other resources in the future?

<div style="background-color:gray; display:inline-block">Time 0:40</div>   Publicizing of Wellness Efforts

[Note: Facilitators may choose not to ask the questions in this section if they have already conducted interviews with the Staff Wellness Coordinator (Q9); School (or District) Wellness Council Chair (Q4); and Food Services Director (Q15) prior to the conducting the focus group.]

6. How are student wellness efforts publicized at the school? Is student wellness a standing agenda item at meetings other than [*name of School (or District) Wellness Council*] meetings? [*Other meetings might include district staff meetings, school staff meetings, site council meetings, school board meetings, parent organization meetings; etc.*]

7. What types of presentations has [*name of School (or District) Wellness Council*] conducted at these school or district meetings?

   Probe: How many presentations have been conducted this school year?

<div style="background-color:gray; display:inline-block">Time 0:50</div>   Nutrition

[Note: Prior to the focus group, facilitators may want to review the handout on School (or District) Wellness Council roles and responsibilities and the Healthy Schools Program recognition criteria in the training notebook.]

As you probably know, the Healthy Schools Program has 3 main components: nutrition, physical activities and physical education, and staff wellness. Let's talk in more detail about [*name of School (or District) Wellness Council*]'s work in each of these areas.

8. What specific goals has [*name of School (or District) Wellness Council*] set for the Healthy Schools Program in the area of nutrition?

    [*If the School (or District) Wellness Council has set nutrition goals*] Which goals are short-term and which are long-term goals? Were these goals developed with or aligned to school or district plans regarding nutrition? Which goals focus on what areas of nutrition (e.g., goals for reimbursable meals, goals for competitive foods such as vending machine foods, etc.)? Are the goals periodically reviewed? What populations are you trying to reach with the nutrition program: school, families, community?]

    [*If the School (or District) Wellness Council has not set nutrition goals*] Do you plan to set nutrition goals?

9. What aspects of the Healthy Schools Program recognition criteria for nutrition are particularly difficult to understand or implement? *[Recognition criteria for nutrition include meeting Healthy Schools Program standards for reimbursable meals, competitive foods such as snack foods sold through school stores, a la carte and vending, beverages, nutrition education, and staff functions.]*

    Probe: What plans does the school or district have to address the nutrition criteria that are difficult to implement? What types of assistance does the School (or District) Wellness Council need to meet the nutrition criteria?

10. What progress has the school or district made in terms of improving school nutrition? [*If respondents mention progress in only one area, probe for progress in other areas such as reimbursable meals, competitive foods, improvements in beverages, improvements in vending, and nutrition education.*]

11. Who or what is driving or impeding improvements and what role has [*name of School (or District) Wellness Council*] played in developing, implementing, or monitoring these improvements? [*Possible drivers of improvement include the technical assistance provided by the Relationship Manager, school administration, parents, etc.*]

12. What cultural or ethnic differences among your students influence the types of healthy food alternatives you offer?

    [Probe: What input have you received from students about foods they enjoy or foods that are culturally significant? Were healthy alternatives offered prior to the formation of the School (or District) Wellness Council?]

13. How would you complete this sentence: "The primary challenge to improving school nutrition is . . . " [*Possible answers include issues related to students, staff, parents, vendors, technical assistance, authority, bureaucracy, politics, etc.*]

    Probe: What needs to change to improve school nutrition?

Time 1:10 Physical Education, Physical Activity, Health Education

Let's talk about physical education, physical activity, and health education improvements.

14. Which aspects of the Healthy Schools Program's recognition criteria for physical education, physical activity, and health education are particularly difficult to understand or to implement? [*Recognition criteria for physical education, physical activity, and health education include standards for the amount of daily physical activity, the incorporation of physical activities into the school day, the integration of physical education with and health education content, the prioritization of core subjects.*]

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Probe: What plans does the school or district have to address the physical education, physical activity, and health education criteria that are difficult to implement? What types of assistance does the School (or District) Wellness Council need to meet these criteria?

15. What progress has the school or district made in terms of improving physical education, physical activity, and health education? [*If respondents mention progress in only one area, probe for progress in other areas.*]

16. Who or what is driving or impeding improvements in physical education, physical activity, and health education? What role has [*name of School (or District) Wellness Council*] played in developing, implementing, or monitoring these improvements? [*Possible drivers of improvement include technical assistance from the Relationship Manager, school administration, the community, etc. Be sure to probe for drivers or impediments in physical education, physical activity, and health education.*]

17. I want to come back to the idea of culture and ethnicity and talk about how they affect physical education and health education. What types of cultural competency training do physical education and health education teachers receive? What are some specific examples of physical activities that have been modified or enhanced on the basis of the cultural or ethnic identities of students? What are some specific examples of health education activities that have been modified or enhanced in response on the basis of the cultural or ethnic identities or the gender of students?

18. How would you complete this sentence: "The primary challenge to improving this school's physical education and physical activity programs is . . . " [*Possible answers include issues related to students, staff, parents, facilities and equipment, technical assistance, authority, bureaucracy, politics, etc.*] What needs to change to improve this school's physical education and physical activity program?

19. How would you complete this sentence: "The main challenge to improving our health education program is . . . " [*Possible answers include issues related to*

students, staff, parents, vendors, technical assistance, authority, bureaucracy, politics, etc.] What needs to change to improve this school's health education program?

> **Time 1:30**   Staff Wellness Component

Finally, let's talk about the staff wellness component of the District Wellness Policy.

20. What aspects of the Healthy Schools Program's recognition criteria for staff wellness are particularly difficult to understand or to implement? [*Recognition criteria for the Staff Wellness Program include standards for conducting a needs assessment, targeting services, staff participation, and medical resources.*]

    What plans does the district have to address the staff wellness criteria that are difficult to implement? What type of assistance does the school need to meet the staff wellness criteria?

21. What progress has the school or district made in terms of improving staff wellness? *[If respondents mention progress on only one area, probe for progress in other areas.]*

22. Who or what is driving or impeding improvements in staff wellness? What role has [*name of School (or District) Wellness Council*] played in developing, implementing, or monitoring these improvements? [*Possible drivers of improvement include technical assistance from the Relationship Manager, school administration, the community, etc.*]

23. Tell me about specific aspects of your staff wellness component that address the cultural and ethnic diversity of staff. *[Specific aspects might include a needs assessment, medical screenings, physical activities, referral resources specific to the cultural and ethnic identities of staff; activities that appeal to all cultural and ethnic groups, etc.*]

24. How would you complete this sentence: "The primary challenge to improving our Staff Wellness Program is . . . " [*Possible answers include issues related to students, staff, parents, technical assistance, authority, bureaucracy, politics, etc.*] What needs to change to improve the Staff Wellness Program?

That's the end of the questions. Does anyone have additional comments to share? Thank you again for setting aside this time to talk with us. If you would like to know the results of our evaluation, they will be available within a few months. [*Provide information on obtaining a summary of the results.*]

APPENDIX K

FOCUS GROUP PROTOCOL—TIME 2

Introductory Comments and Instructions

Thanks for taking the time to talk with us today. My name is **[moderator's name]** and this is **[notetaker's name]**. We are both with RMC Research and our job is to help evaluate the Alliance for a Healthier Generation's Healthy Schools Program. As part of the evaluation, we're conducting these focus groups at several participating schools and districts around the country. The information we collect will help us understand the successes and challenges schools and districts experience developing and implementing their Healthy Schools Program.

[Pass out the sign-in sheet, nametags, and markers and explain.]

Please write your first name on the sign-in sheet and also on the nametag. We'll address you by name in the session, but we won't include any names or other identifying information in our report, nor will we share your names or other identifying information with anyone else—so please feel free to speak frankly.

[Pause to allow everyone to put on their nametag.]

We also want you to know that in this session there are no wrong answers, and its okay not to know the answers to all the questions. Please feel free to share your point of view even if it differs from what others have said. We are taking notes and would like to audiotape the session. May we have your permission to audiotape the session?

[Check to see that everyone agrees by nodding their head or saying "yes", do not audiotape the session if even one person does not give permission.]

Because we have limited time, I may have to move the discussion along before you have finished commenting. This doesn't mean that your comments aren't important. Feel free to share with us at any time comments or concerns you were not able to express during the focus group session. **[Give contact information]**

Okay, let's have each person introduce themselves and state their job title.

[Note: Estimated focus group duration: 1 hour.]

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Text marked with a ★ needs to be prepopulated before the focus group.

I'd like to start our discussion today by getting an update on your school **[or district]** wellness council. Let's talk about participation on your school **[or district]** wellness council.

27. Has the composition of your school **[or district]** wellness council changed since our last visit to your school in **[★MONTH/YEAR★]**?

    If yes:
    ➡ How has it changed?

Now I'm going to ask about action planning and goals.

28. Did you develop an action plan as part of your involvement in the Healthy Schools Program?

    If yes:
    ➡ When did you last update the action plan?
    ➡ How have you used it?
    ➡ Has it been helpful?

    9. If yes**:**
        ➡ In what ways has it been helpful?

29. What are the school [or district] wellness council's goals for this current year?
    ➡ How about the future—what long term goals does the council have?

Let's look at efforts at your school since we were last here in **[★MONTH/YEAR★]**.

30. When we last visited your school, your school **[or district]** wellness council had accomplished **[★SUMMARIZE SCHOOL HEALTH AND WELLNESS ACCOMPLISHMENTS AS OF THE TIME OF THE LAST SITE VISIT★]**.
    ➡ Have you been able to sustain what you accomplished?
    ➡ What helped you sustain those accomplishments?

31. When we last visited your school, your school **[or district]** wellness council was planning to **[★SUMMARIZE SCHOOL HEALTH AND WELLNESS PLANS AT THAT TIME★]**.

  �![] Were you able to accomplish that work?
  ➧ What helped you accomplish that work?

32. What other changes, if any, has your school made to improve student and staff health and wellness at your school since we last visited?

33. What factors contributed to your school's ability to make these improvements?

34. Since our last site visit, what barriers, if any, have you experienced in implementing the Healthy Schools Program?
  ➧ What have you done to try to overcome these barriers?

35. Did your school experience any difficulties in implementing aspects of the Healthy Schools Program during the 2008–2009 school year due to economic conditions?

  If yes:
  ➧ Could you please describe these difficulties?
  ➧ Do you expect difficulties related to the current economic environment to continue throughout the 2009–2010 school year?

    10.   If yes:
    ➧ What are the difficulties you expect to face during the school year?

Now I'm going to ask about efforts at your school since you first began participating in the Healthy Schools Program in 2006.

36. What has been the cost to your school to implement various aspects of the Healthy Schools Program?
    [Explain that "cost" might include money (for supplies or equipment), staff (to teach specific classes or run specific programs), or staff time (to attend meetings or plan or implement specific activities or initiatives).]

37. How do students and parents provide input into the development and implementation of school health and wellness activities?

38. How are health and wellness efforts promoted to students, staff, and parents at your school?

39. How would you characterize the level of support you've received for school wellness efforts from the administration at your school?
   ➥ How about district administration?

40. How would you characterize the level of support that exists for school wellness efforts from the school community (i.e., students, staff, parents)?

41. In what ways, if any, has participating in the Healthy Schools Program aided your school or district wellness efforts?

That's the end of our questions. Does anyone have additional comments to share? Thank you again for setting aside this time to talk with us.

APPENDIX L

CAFETERIA OBSERVATION RECORD

School: _____

Date: _____/_____/_____

This form completed by: _____

Reimbursable Meals Observation—Cafeteria School Breakfast

In general, a *school breakfast* will consist of these items:
1. A serving of grains/bread and a serving of protein or protein alternate or two servings from one component
2. A fruit and/or a vegetable, or full-strength fruit juice or vegetable juice
3. Milk

Name or description of food	Notes

Competitive Food Observation—Cafeteria School Breakfast

Brand name and product name or food description	#	Package ⌐ Weight or Size ⌐		Price	Notes

Reimbursable Meals Observation—Cafeteria School Lunch
In general, a *school lunch* will consist of these items:
1. Protein or protein alternate
2. Grain or bread
3. A fruit and a vegetable or two of each
4. Milk

Within these items, students may be able to choose between two entrees and/or may be able to make choices about which fruits or vegetables they would like.

Name or description of food	Notes

Competitive Food Observation-Cafeteria School Lunch

Brand name and product name or food description	#	Package ☞ Weight or Size ☜		Price	Notes

Follow-up Cafeteria Observation Questions

1. Please describe the layout of the cafeteria. Provide a drawing and/or photos.

2. In how many places within the food area were certain "good" foods (e.g., fruit, salads) available? Please describe.

3. In how many places within the food area were certain "bad" foods (e.g., fries, burgers, hot dogs, pizza) available? Please describe.

4. **High School Only** (if the school has an open campus policy): How far from the school is the nearest alternative food source? Is it within walking distance or easy driving distance of the school? Please describe the alternative food source (e.g., convenience store, supermarket, fast food restaurant, sit-down restaurant).

APPENDIX M

OTHER FOOD AREAS OBSERVATION RECORD

School: _____

Date: _____ / _____ / _____

This form completed by: _____

Area of school visited (school store, snack bar, etc.):_____

Brand name and product name or food description	#	Package Weight or Size		Price	Notes

APPENDIX N

PHYSICAL ACTIVITY AND EDUCATION OBSERVATION RECORD

PHYSICAL ACTIVITY

Purpose. Document observable signs that the school promotes regular physical activity and an active live style. We are looking for how what was said in the inventory, interviews, and focus group play out in practice.

Guidelines. One observer should be sufficient so you can schedule concurrent observations. In elementary schools, try to observe the play area(s) at recess, noon, and before and after school. Observe 2 classes during recess (R1 and R2) if possible.

Play area ratings. Inspect the play area for each of the rating dimensions. Circle Y for yes, N for no, and U if you were unable to observe that dimension.

Play area observations. To determine how many students are moderately or vigorously active, make two scans of the play area at least 5 minutes apart. Note that moderate activity would cause you to breathe slightly harder than normal. Examples of such activities are fast walking, slow bicycling, and skipping. Vigorous activity such as running causes breathing hard and sweating. It may be necessary to count students by 2s, 5s, or 10s to estimate your counts if there are a large number of children on the playground.

Facilities. In middle or high schools, you may find a variety of facilities available, especially in the larger schools. We have categorized them as Playing Field (F), Gymnasium (G), special purpose Activity Rooms (R), Swimming Pool (P), or Other (O). If you have more than one facility of the same type, you can treat them as one (i.e., lump them in a single column) as long as they have the same characteristics.

Physical Education

Purpose. Observe a representative sample of the PE classes in the school to see how what was said in the inventory, interviews, and focus group plays out in actual instruction.

Guidelines. You will want to examine the curriculum materials and lesson plans prior to the observation if possible or at least make sure that they are available on the day of the site visit. One observer should be sufficient per class. Try to observe at least 2 classes and up to 4 classes with different instructors in large schools. It will be necessary to follow-up with the instructor before or after the session to ask him/her to describe the goal of the session and how it fits within the curriculum.

Ratings. Respond with Y for yes, N for no, U if you were unable to observe or interview on that dimension, or with specific number or percentage requested.

Physical Activity Observation Checklist

School: _____   Observer(s): _____   Date ____/____/_____

Observations of Physical Activity
Take observations Before School (BS), Recess (R), Noon (N), After School (AS)
Try to take observations 10–15 minutes after start or 10–15 minutes before end of period.
Take 2 scans 5 minutes apart.

	BS	R1	R2	N	AS
1. How many adults were in the play area?	___	___	___	___	___
2. Approximately how many students are using the play area?	___	___	___	___	___
3. What percentage of students are moderately or vigorously active?					
(moderate activity causes you to breathe Scan 1	___	___	___	___	___
slightly harder than normal, e.g., skipping, Scan 2	___	___	___	___	___
fast walking, bicycling, etc.)					
4. Were students encouraged by adults to be active? (Y or N)	___	___	___	___	___
5. Was there sufficient equipment/room for students to be active?	___	___	___	___	___
6. How long was physical activity period?(minutes)	___	___	___	___	___

7. Briefly describe the types of activities observed:

a. Recess

_____

_____

_____

_____

_____

b. Noon

_____

_____

_____

_____

_____

c. Before/After

_____

_____

_____

_____

_____

Play Area/Facilities (Playing fields/gym/activity rooms/other facilities)
Describe the indoor and outdoor facilities available to support Physical Ed/Physical
Activity (PE/PA).
Circle response as Y = yes, N = no, U = unable to observe
1. Type of facility (F=field, G=gym, R=room, P=pool, O=other):

2. The neighborhood context appears safe.

3. The play area is useable in most weather.

4. All equipment is maintained and in good repair.

5. There are no safety hazards in the play area.

6. Briefly describe each play area.

_____

_____

_____

_____

_____

_____

_____

_____

Physical Education Observation Checklist

School: _____   Observer(s): _____   Date ____/____/_____

Class: _____ Grade Level ____

Respond: Y = Yes, N = No, U = Unable to observe/Unable to interview, or with specific number or percentage requested. Responses to Q4-Q7 should add up to the total scheduled minutes for the class.

Opportunity to learn

1. How many instructors and aides in the class?

                                                                                                    ____

2. How many students in the class?

                                                                                                    ____

3. How many scheduled minutes for the class (According to bell schedule)?

                                                                                                    ____

4. How many minutes were students waiting or in organizational activities?

                                                                                                    ____

   (includes time spent dressing out)

5. How many minutes were students listening to lecture or general instruction?

                                                                                                    ____

6. How many minutes were students in moderate or vigorous activity?

                                                                                                    ____

   (i.e., sufficient to make you breathe slightly harder than normal)?

                                                                                                    a)
      Approximately what percentage of students were participating in the majority of
                                                                                                    moderate
         or vigorous activity?

                                                                                                    ____

7. How many minutes were students in low-level physical activity (i.e., not sufficient to make
   you breathe slightly harder than normal, such as stretching, slow walking)?

                                                                                                    ____

Comments:

_____

_____

Appropriate Instruction

1. The majority of students were actively engaged throughout the period. Y   N   U

   If <u>NO</u>, then barriers to engagement were (check all that apply):

> ❒
>
> Inadequate equipment/room for students to be active
>
> ❒
>
> Inadequate discipline and class management
>
> ❒   High
>
> teacher/student ratio
>
> ❒   Many
>
> students not participating because not dressed out/illness/injury
>
> ❒   Teacher
>
> did not design lesson to promote active engagement of most
>
>   students
>
> throughout most of the period (i.e., too much student downtime)
>
> ❒   Other
>
> _____

2. The teacher provides constructive, tailored feedback to students. Y   N   U

3. Teacher provides specific instruction in skills (i.e., motor skills, team work, provides specific instruction in how to throw a ball, etc.) Y   N   U

4.* Teacher was able to articulate:

  a) the goal of this session   Y   N   U

  b) how this session fits within the curriculum. Y   N   U

Brief description of class:

_____

_____

Comments:

_____

_____

_____

*These items require a brief interview with the PE instructor.

Culture Change

1. Describe anything you observed that demonstrates how the school is promoting ongoing physical activity or an active life style (e.g. posters, bulletins, schedules, newsletters).

_____

_____

_____

2. Describe any unique ways that the school promotes physical activity:

_____

_____

APPENDIX O

VENDING OBSERVATION RECORD

School: _____

Date: _____/_____/_____

This form completed by: _____

Vending Company: _____

Vending Machine # __ __ __ __

Vending Machine Placement: _____

| Vending Product (Full Name) | Package | | Notes |
	Weight or Size	Price	

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