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Improving Student Performance by Promoting Student Health

by

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Introduction

Rising obesity rates are one of the greatest public health problems facing our nation today. One in three children in the United States is overweight or obese. Illnesses normally associated with adults, such as diabetes, high cholesterol and hypertension, are increasing at staggering rates in children. These illnesses increase the risk of heart disease, some forms of cancer and other serious illnesses as adults. Overweight and obesity have documented negative effects on student attendance, performance, and academic achievement.

Communities throughout the country are making sustainable development a priority in the planning process. Many of the goals associated with sustainable development can have a positive impact on the health of children. This practice guide seeks to demonstrate how using these aspects of sustainable development can promote student performance and public health (*Table 1*).

Table 1 - *Comparing aspects of sustainable development that also meet goals of healthy school initiatives*

Aspects of Sustainable Development	Healthy School initiatives
Complete Streets	Active Commuting
Equitably distributed parks and recreation facilities	Providing environments where kids can play and exercise safely
Civic agriculture	Offering fresh, healthy food to students
Community Engagement	Partnerships within the community to achieve goals
Environmental justice	Healthy equity
Create social capital	Produce healthy, well-educated children

Effects of Overweight and Obesity on Children

In the United States, 17 percent of children aged 2-19 years are obese with disproportionately high rates for ethnic and minority children (Ogden and Carroll 2010, Strauss and Pollack 2001). Among low-income children, one in three is obese or overweight by age 5 (CDC n/d). Children who are overweight or obese face many *health concerns* both as children and as adults. Obese and overweight children are increasingly showing symptoms of hypertension, Type II diabetes (also called "adult-onset" diabetes), and high cholesterol levels. These conditions can lead to significant health problems in adulthood including cardiovascular disease, bone and joint problems, sleep apnea, heart disease, stroke, osteoarthritis and some forms of cancer (Pekruhn 2009). These adverse health effects can last into adulthood even if the excess weight is lost as an adult (Deckelbaum and Williams et al. 2001, Freedman et al. 1999), possibly due to the central deposition of fat (around the waistline) in adolescence which increases cardiovascular disease risk factors (Must et al. 1992). Such issues can seriously impact ***quality of life***. In a study from 2003, severely obese children reported a health-related quality of life similar to that reported by children with cancer undergoing chemotherapy (Schwimer et al. 2003). Children who are overweight or obese also face possible social and psychological issues due to low-esteem and high rates of bullying. Such social issues can further exacerbate weight problems since children who are bullied for their weight often avoid physical activity as a result.

Overweight and obesity also have significant impacts on children's ***academic performance***. Lower test scores, more detentions, and lower fitness are all related to weight in school-age children (Geier et al. 2007). In addition, research has found that overweight children are absent more frequently than normal-weight children and obesity is the best predictor of absenteeism (Geier et al. 2007). Future success can also be impacted by overweight and obesity with people overweight in adolescence completing fewer years of school, having lower income and being more likely to be poor as adults (Gortmaker et al. 1993).

In addition to health and academics, there are also ***economic consequences*** to overweight and obesity. In total, obesity results in $117 billion in lost wages, more even than from smoking (Pekruhn 2009). Health problems relating to obesity also result in increased health care costs. Overweight and obese children covered by Medicaid account for $3 billion in health care costs directly related to obesity (Pekruhn 2009). The Louisiana School Policy Action Guide (2009) states that as obesity rates rise "the resulting medical complications are having a devastating effect on the quality of life of Louisiana citizens and *the state budget* (italics added)."

The two key components to reducing overweight and obesity in children (as well as adults) is to increase physical activity and improve diet by increasing intake of fruits, vegetables, and whole grains while reducing consumption of high-calorie, high-fat foods. For children who spend a large part of their day at school, the environment where they learn can play a large part in developing healthy habits. Schools are unique environments where the community, individual families and the government all have a vested interest (Pekruhn 2009). The U.S. Department of Agriculture (USDA) provides nutrition guidelines for schools receiving funds for the National Free and Reduced Lunch Program (NSLP). These guidelines were updated in 2010 for the first time in 15 years and include more fresh fruits, vegetables and whole-

grains (U.S. Department of Agriculture [USDA] 2007). These guidelines are difficult to enforce in schools where there are à la carte lines and vending machines offering high-calorie, high-fat alternatives such as sugary drinks and junk food. In addition, prices of fruits and vegetables have risen disproportionately compared to less healthy processed foods (Putnam et al. 2002) possibly explaining the higher obesity rates among those of limited economic means (Monsivais and Drewnowski 2007).

In addition to these nutrition concerns, many schools have reduced or even eliminated physical education in favor of more traditional academic subjects reasoning that increased time in the classroom will result in better test scores. However, preliminary studies have found a ***positive correlation between physical fitness and academic achievement*** (Grissom 2005). Compound this with the increasingly sedentary lifestyle of both children and t is easy to see how children get far less than the recommended 60 minutes of moderate to vigorous physical activity a day that is recommended (Koplan 2005). All the above contributes to the alarming increase in rates of overweight and obesity in children.

Healthy Food

Lower test scores, more detentions, and lower fitness are all related to weight in school-age children (Geier et al. 2007). In addition, research has found that overweight children are absent more frequently than normal-weight children and obesity is the best predictor of absenteeism (Geier et al. 2007).

Farmers' Markets and Community Supported Agriculture

Schools can take advantage of the growing popularity of civic agriculture. Farmers' markets and community-supported agriculture (CSA) are becoming increasingly common as communities seek out sustainable sources of healthy produce. These programs allow people to know where their food comes from and how it is grown while providing nutritious food. Low-income neighborhoods, in particular, are at a much higher risk of being a "food desert" where there is no affordable source of fresh food (Walker et al. 2010, Fisher 1999). In order to combat this, many communities are looking to farmers' markets and CSA's as a source of fresh, locally produced food. Having a farmers' market or CSA pickup at a local school can make it more convenient for families to incorporate fresh food into their diet, not only at school but at home as well.

Farm-to-School Programs

The USDA's Fresh Fruit and Vegetable Program (http://www.fns.usda.gov/cnd/ffvp/) provides fresh fruit and vegetables to students as snacks outside of school breakfast or lunch. Many low-income students who participate in the NSLP and breakfast program receive most of their nutrition at school (USDA 2011). Incorporating more fruits and vegetables into the school day can vastly improve the nutrition for many children, not just those who are low-income.

Farm-to-School programs allow schools to purchase fresh fruits and vegetables from local farmers, thus improving the quality of food served (fresh vs. frozen and preserved) while potentially reducing the costs to the school. The Centers for Disease Control's (CDC) Healthy Communities Program (http://www.cdc.gov/healthycommunitiesprogram/index.htm) provides guidance for reducing the

burden of chronic disease (including those related to obesity) and achieving health equity by providing funding to communities for programs such as those that connect local farmers and schools.

School Gardens

"No matter how picky kids are, they are infinitely more likely to eat food they've made with their own hands." Alice Waters (2008)

Schools can also grow their own fruits and vegetables in a school or community garden. This provides an outdoor educational opportunity for children to learn how their food is grown and to help in growing it. This not only fills the need for fresh food but provides a needed nutritional education component. Alice Waters, author of *The Edible Schoolyard* (2008), offers five Principles of Edible Education: food is an academic subject, school provides lunch for every child, schools support farms, children learn by doing, and beauty is a language. According to Waters, a school garden, kitchen and cafeteria can be an integral part of the core academic curriculum by "bringing alive" subjects from ecology to gastronomy and writing to science. Waters advocates providing a wholesome, delicious meal to all students from preschool to high school every day through civic agriculture and supporting local farmers. The benefits of experiential learning go back as far as 1916 when John Dewey[1] discussed the importance of the link between learned content and lived experience. Allowing students to plant, grow, tend and harvest crops from a garden can be a part of many core academic subjects.

Many of these lessons and topics are common in classrooms throughout the country. When paired with an active-learning experience in a school garden, these lessons are memorable and can instill a life-long appreciation for the natural world. This is particularly true for children in urban areas who might not otherwise experience gardening firsthand. Active gardening activities for urban schoolchildren have been shown to be effective in fostering an appreciation for gardening when they become adults (Lohr and Pearson-Mims 2005).

In addition to growing the food, children can be involved in preparing it. Having a school kitchen where children can learn to cook the foods from the garden can aid in nutritional education and encourage children to try new foods. Cooking classes can teach children about ethnic and cultural differences of food, instill an appreciation for fresh, nutritious meals, and can even influence their families by taking home recipes they've learned in the kitchen classroom. When students are done eating, they can then return their scraps to the garden compost so they see that the connection between the garden and their lunch plate is a two-way interaction.

The Cafeteria

"It's only nutrition when they eat or drink it."
Dayle Hayes, blogger and school nutrition activist

1 John Dewey was a renowned leader of the progressive movement in education and a proponent of experiential learning.

The environment in which children eat can also influence their nutrition. Blogger and school nutrition activist Dayle Hayes, R.D., advocates for nutritious meals and the right setting in which to enjoy them. For example, if children have recess before lunch they are more likely to eat their lunch, whereas recess after lunch may cause children to rush through lunch and not eat in order to get to recess sooner (Ralston et al. 2003). Areas where students eat should reinforce nutrition education students get in the classroom (Strategic Alliance for Health n/d). School eating facilities should be cheerful and pleasant places to eat where students are comfortable and have adults modeling healthy eating behaviors. Students should also be given adequate time to eat their food, at least 10 minutes after they get their food for breakfast and at least 15 minutes after getting their food for lunch. This makes it more likely that students will eat their meals. A study in the Journal of Child Nutrition and Management by Bergman (2004) found that when students' lunch time was reduced by 10 minutes, they consumed significantly less food and nutrients. In addition, plate waste increased from 27.2 percent to 43.5 percent with the time reduction.

Fundraisers

Less than desirable food has long been used in schools for fundraisers, in school bookstores, and at afterschool activities such as athletic events. With thoughtful consideration and planning, such patterns can be changed. Many fundraising opportunities are available that feature non-food items and can be just as successful as traditional junk food sales with the support and enthusiasm of the students and staff (Ellings et al. 2007, Gibbons 2008). Many schools supplement their budgets with items sold in vending machines and at school events. Administrators may be concerned with losing valuable income. Such issues can be overcome by slowly phasing in healthy food choices in combination with an appropriate information campaign (Action for Healthy Kids 2005). Involving students in the new choices made through taste-testing events that offer a choice of two comparable items and listening to their input can make them owners of healthy initiatives and increase support among the student body (Ralston et al. 2003, Strategic Alliance for Health n/d). As new, healthier foods are phased in to the meal service plans, healthy options can be labeled to draw students' attention to them (Strategic Alliance for Health n/d).

Food Insufficiency

At the same time that overweight and obesity are growing problems in our schools, food insufficiency and hunger continue to trouble our schools' students. Even children that are overweight or obese can suffer ill effects from improper nutrition. These children are more likely to demonstrate behavioral problems in the classroom such as hyperactivity, anxiety, and aggression, as well as academic problems such as absences and tardiness (Bogden 2000, Kleinman et al. 1998, Murphy et al. 1998). Serving more fruits and vegetables benefits all students regardless of their weight status.

Case Studies – Healthy Food

Edible Schoolyards, New Orleans

In 2006, five FirstLine Public Charter Schools began participating in the Edible Schoolyards Program in order to improve the long-term health of students, their families, and the community. The largest garden is a third acre plot at Green Charter School and all five schools have gardens onsite. The school curriculum includes organic gardening to instill a sense of pride and responsibility for natural resources in students and "kitchen programming" which teaches kids how to prepare and cook seasonal foods from the garden. They have also incorporated more fresh fruits and vegetables, whole grains, and home-cooked entrees into their school meal programs. The Edible Schoolyards Program also offers food education opportunities for students, their families, and the community through special events where families learn how to cook seasonal foods from the garden and Open Garden Days which involves the school and neighborhood in gardening and composting. The Program also features entrepreneurial opportunities for middle-school students to sell garden produce at local neighborhood markets. (http://edibleschoolyard.org/program/edible-schoolyard-new-orleans)

Camp Lejeune Dependent Schools, North Carolina

Camp Lejeune Dependent Schools is located on Marine Corps Base Lejeune near Jacksonville, North Carolina. For two decades the school system has worked to incorporate fresh fruits and vegetables into the menus of their seven schools. With funding from the USDA Fresh Fruits and Vegetable Program, students make annual visits to Bucks Corner Farm in Peletier, North Carolina where students pick berries, learn about farming and see the food that will one day be on their lunch tray. The school system also holds a district-wide health fair where students and their parents can see fresh fruits and vegetables prepared and get a fruit and vegetable recipe book. Children in preschool, kindergarten, and first-grade participate in the garden club where they learn to plant seeds, keep weeds out, and harvest their produce. All these activities—trips to farms, health fairs, and the garden club—improve student interest in fresh fruits and vegetables. (www.cdc.gov/healthyYouth)

Funding and Resources for Healthy Food

Food Related Programs

- The Sara Lee Foundation http://www.saraleefoundation.org/funding/focus_food_related.cfm
  - Grants are available for programs that increase access to fresh produce and protein or provide meals when schools are not in session, with a focus on addressing domestic hunger and serving the larger community.
- Marathon Kids http://www.marathonkids.org/program-overview
  - Provides resources for elementary schools (public, private or homeschool) to help children live an active, healthy lifestyle by challenging kids to run or walk 26.2 miles over a 6 month period. Logs are provided where students can list their exercise and healthy eating. Resources are also provided to begin a schoolyard garden.
- Green Ribbon Schools http://www.greenribbonschools.org/

    - This is an award program that recognizes schools that promote and encourage healthy and environmentally-friendly learning environments using the 4 Cornerstones of a Green Ribbon School (Eco-Campus, Health & Fitness, Nature Adventure, Natural Classrooms).
- Let's Move Salad Bars to Schools http://saladbars2schools.org/
    - Provides grants to implement a cafeteria salad bar to schools serving at least 100 reimbursable meals.
- National Education Association http://www.nea.org/grants/awards/43347.htm
    - Provides grants to elementary and middle-school teachers to implement ideas and techniques to address four issues: environmental awareness, health and wellness, students' right to a quality public education, and active community involvement. The goal of these programs is to develop a sense of global awareness in 21st century students that will encourage and enable them to make a difference in their world
- USDA HealthierUS School Challenge http://www.fns.usda.gov/tn/healthierus/index.html
    - The HealthierUS School Challenge (HUSSC) is a voluntary certification initiative established in 2004 to recognize those schools participating in the National School Lunch Program that have created healthier school environments through promotion of nutrition and physical activity. Many schools find that applying for the Challenge is a valuable learning process that helps their school wellness team focus on areas needing improvement.
- Share Our Strength: No Kid Hungry http://www.strength.org/grants/
    - Provides grants to non-profits and schools to increase access to afterschool meals and snacks, summer meals and breakfast programs. Also seeks to increase enrollment of eligible families in the SNAP/WIC programs.
- Farm to School www.farmtoschool.org
    - Provides a list of grants available for various activities such as planting fruit trees, starting school gardens, and professional development for teachers.
- Food and Nutrition Information Center http://fnic.nal.usda.gov/
    - The Food and Nutrition Information Center is a program of the USDA that provides resources for educators regarding healthy eating, physical activity and addressing childhood hunger.

School Gardens

- Kids Gardening http://www.kidsgardening.org/grants-and-awards
    - Provides a list of funding opportunities as well as resources for school gardening, including lesson and activity guides, how-to guides, and classroom projects.
- Edible Schoolyard http://edibleschoolyard.org/
    - Offers classroom activities, tips on getting community volunteers, fundraising tools, and a network of other school gardens. Tools include documents such as *Farm to School* and *School Gardening: A Resource List for Educators* (http://www.nal.usda.gov/fnic/pubs/bibs/gen/farmtoschool.pdf).
- USDA Agriculture in the Classroom http://www.agclassroom.org/

- Provides resources for teaching agriculture in the classroom as well as state program information.

- The People's Garden School Pilot Project http://extension.wsu.edu/peoplesgarden/Pages/default.aspx
  - The People's Garden School Pilot Project, part of the Washington State University Extension, provides information on starting and maintaining school gardens, including lessons for elementary grades available in video format.

Physical Activity

"It is during their youth when people begin to acquire and establish patterns of health-related behaviors can that can influence their chances of dying prematurely in adulthood." Bogden 2000

Children and adolescents should get at a minimum of 60 minutes of moderate to vigorous physical activity a day (Strong et al. 2005). Moderate physical activity is the equivalent of brisk walking. Vigorous physical activity is the equivalent of running, resulting in labored breathing and sweating (USDA n/d). Most children get much less than the recommended 60 minutes a day of physical activity (Centers for Disease Control 2009).

Even as schools reduce physical education classes and recess periods, children get less exercise at home due to increased time in front of the television and computer. This can lead to reduced activity levels throughout life since habits acquired as children are likely to persist into adulthood. As Bogden (2000) put it,"It is during their youth when people begin to acquire and establish patterns of health-related behaviors can that can influence their chances of dying prematurely in adulthood."

Maintaining physical education in schools will not only help prevent overweight and obesity in students now but will help them ***learn and maintain healthy habits*** throughout their life. In traditional PE classes, only a small fraction of the total class time is spent in moderate to vigorous physical activity (Simons-Morton et al. 1993). Instructors should work to spend at least 50 percent of the class in actual physical activity that does not require a lot of down-time (such as waiting a turn, sitting out, or waiting for equipment). Instructors should also be certified physical education teachers who not only teach physical activity but help instill life-long habits in students.

"Play is often talked about as if it were a relief from serious learning.
But for children play is serious learning. Play is really the work of childhood."
Fred Rogers, Mr. Rogers Neighborhood

In addition to physical education, elementary school children also need ***recess***, a time for unstructured but supervised play. Small, inexpensive actions can help students spend more of the time in physical activity. A positive relationship has been found between the presence of playground markings (hopscotch, basketball) and physical activity during recess (Davison and Lawson 2006). The presence of usable equipment such as balls and other equipment can also increase the activity of students during play time.

Physical activity not only helps children maintain a healthy weight but teaches valuable life lessons such as ***cooperation and fair play*** (Bodgen 2000), self-discipline, improved self-esteem and self-confidence, and strengthens peer relationships (NASPF 1999). Both boys and girls should meet the recommended daily physical activity. Some research finds that girls' activity levels are usually lower than boys'. This is concerning since physical activity is particularly important for adolescent girls to develop a healthy reproductive system and maintain bone density to avoid osteoporosis later in life (Bogden 2000). Students with chronic health problems, disabilities or other special needs physical education should also be provided with appropriate physical activities (Bodgen 2000).

Active Commuting

In the past many children walked or biked to school but in recent decades the rate of such active commuting has declined (Davison 2008). The National Center for Safe Routes for Schools (www.saferoutesinfo.org) advocates for improved infrastructure to allow more children to actively commute to school. Improvements in sidewalk infrastructure and traffic-calming measures, which have been shown to be correlated to children's physical activity (Davison and Lawson 2006), can be especially effective when coupled with classroom activities and parent involvement (Davison et al. 2008). Programs such as the Walking School Bus (www.walkingschoolbus.org) use volunteers to walk groups of children from a central meeting point (such as a bus stop) to school.

Children also need places where they can play safely. Repeated studies have found a positive relationship between the presence of recreation areas and a child's physical activity (Davison and Lawson 2006). The U.S. Department of Health and Human Services (2010) suggests making school facilities available outside of school hours for programs run by the school or community organizations. Any liability issues can be worked out to everyone's satisfaction. Citizens can also work with city planners and the local parks department can discuss the placement of recreation facilities in neighborhoods that lack access.

Case Studies – Physical Activity

Kimberley Park Elementary School, Winston-Salem, North Carolina

Kimberley Park Elementary School, an all-minority Title I school, was one of five schools selected for the Safe Routes to School pilot training program. The school partnered with the Forsyth County Health Department and received a grant from the North Carolina Division of Public Health to provide training to faculty and staff for a Walk to School event. Some faculty members were also involved to a task force that included members of the city government, law enforcement, an area church and Habitat for Humanity. On their first Walk to School event, almost half the students participated and were awarded prizes and entered in drawings for gift cards to local stores. (www.saferoutesinfo.org)

South Carolina Healthy Schools

South Carolina Healthy Schools (SCHS) is a coordinated school health program funded by the U.S. Centers for Disease Control (CDC). Working in conjunction with a community organization and a local hospital, SCHS established coordinated school health teams in every school in Anderson County, South

Carolina. With technical support and professional development assistance from SCHS, the 47 health teams have made more physical activity opportunities available to students. Programs in aerobics, yoga, running and walking are offered to students, faculty and staff. (www.cdc.gov/healthyYouth)

Mississippi

In 2003, the Mississippi Department of Education (MDE) requested help from the CDC to start a coordinated school health program. With the CDC's technical assistance and resources and a grant from John D. Bower, M.D., Foundation, the MDE was able to provide 25 schools with new physical education equipment and train staff to conduct biannual fitness assessment of students. In addition, the Mississippi legislature passed the Mississippi Healthy Students Act which requires schools to provide increased amounts of physical activity and health instruction for K-12 students. (http://www.healthyschoolsms.org/ohs_main/MShealthystudentsact.htm)

Funding and Resources for Physical Activity

Active Commuting

- www.walkingschoolbus.org
    - Provides step-by-step instructions for organizing a walking school bus along with other helpful resources.
- www.saferoutesinfo.org
    - Offers mini-grants and helps locate additional funding for making safe walking routes to schools. Also offers conferences, training, and webinars for those interested in starting or expanding walk-to-school programs.
- www.iwalktoschool.org
    - Provides resources for teachers, parents, and children about walk to school events. Resources include classroom activities, organization and implementation tips, and links to active commuting research.

Physical Activity

- NFL Fuel up to Play 60 http://www.fueluptoplay60.com/
    - Provides grants up to $4000 to schools enrolled in the Fuel Up to Play 60 program to implement and sustain healthy eating and physical activity improvements. The program also offers prizes and incentives for students who make healthy eating choices and exercise 60 minutes a day. This program is offered by a collaboration of the National Dairy Council, the NFL, and the USDA.
- Kaboom: It Starts with a Playground http://kaboom.org/build_playground/become_community_partner
    - Provides grants for playground equipment as well as fundraising advice and resources to design and build a playground in areas without a playground or with a playground that no longer meets safety requirements.
- Good Sports http://www.goodsports.org/

    - Provides equipment, apparel and footwear to sport programs that serve disadvantaged communities.
- Saucony Run for Good Foundation http://www.sauconyrunforgood.com/
    - Provides funding and resources for programs, including public schools, that combat childhood obesity by promoting running and healthy lifestyles.

Health Education

Well-educated students with a basic understanding of health and nutrition are better equipped to make healthy choices on their own.

Students should not only be provided with healthy foods and the opportunities for physical activity but should also learn the benefits of these habits. Nutrition education helps students make better decisions about diet and exercise. Well-educated students with a basic understanding of health and nutrition are much better equipped to make healthy choices on their own. While one goal of nutrition education should be to combat the obesity epidemic, health education should focus on health and fitness not weight. Lessons learned in the classroom regarding healthy eating habits should not be contradicted in the lunchroom by the food served (Davidson 2008, Strategic Alliance for Health n/d). School meals should reflect nutrition education from the classroom by offering students healthy choices with lots of fresh fruits and vegetables and whole grains (see Healthy Food section). Food should never be used as a reward or punishment as this sends the wrong message about eating (Gibbons 2008, Wyoming Mealtime Memo 2008).

Lessons about healthy eating can be reinforced by a school garden where students can help grow and prepare food for school meals (Waters 2008, Pounders 2006). This not only teaches lessons about healthy food but allows children to see where their food comes from and what is involved in producing it. If a school is involved in a farm-to-school program, visits to the farm on school field trips can also serve this purpose (see *Camp Lejeune Dependent Schools* case study in the previous section).

Partnerships to Help Achieve Health Goals

Schools represent the intersection of the interests of communities, families, and the government. Pekruhn 2009

Overweight and obesity are not just problems among school age children but also affect the adult population. Students need to see adults modeling the behaviors taught in the classroom. Schools can support these efforts by offering nutrition and fitness programs for teachers and staff. The success of these programs will increase as more of the school community become involved. Some schools offer incentives through insurance wellness plans that not only promote a healthy lifestyle but can also save on premiums.

Partnering with Parents

Parents can become involved in healthy school initiatives through the PTA and afterschool or active commuting activities. Parents can also become involved in school nutrition by making thoughtful decisions when making treats for class parties or events (Gibbons 2008), and forego snacks for parties and instead have a class activity or game. As mentioned earlier, schools represent the intersection of the interests of communities, families, and the government (Pekruhn 2009). This makes schools a prime avenue for community engagement. Schools can offer "nutrition nights" where programs are provided for students and their families about healthy eating through cooking demonstrations and health fair-type events. As mentioned in the food section, schools can be community gathering places for farmers' markets or CSA pickups. This not only supports local agriculture but provides a convenient, affordable source of fresh produce for families, particularly in areas lacking sufficient food sources. Schools can also use parents to reach out to neighborhood and faith-based organizations with which they are affiliated.

School Staff

Achieving the goal of healthy schools in sustainable communities will require the cooperation of a vast array of partners. Within schools, food service workers, nurses, teachers, administrators, custodial staff and students should all be included in making schools healthy places to be. Many successful endeavors across the country have begun this process by creating a School Health Council with representatives from within the school to help tailor the program to the individual needs of the school (Bellian 1998). Food service workers are on the frontlines of the battle against childhood obesity and can contribute greatly to school nutrition programs both through their selection and preparation of foods and their interactions with students. Teachers can provide links between healthy school meals and nutrition in the classroom by incorporating nutrition education into a variety of subjects. Students can greatly contribute to the success of these programs by providing input, acting as cheerleaders for the program within the student body, and organizing taste-testing events to try new foods. Allowing students to participate and have a say in the foods that are served can increase student enthusiasm and buy-in.

Community Partnerships

Within the community are many with a vested interest in healthy schools. Partners may be found within the local health department, which can provide the names of coalitions functioning within the community that may share similar goals. The county cooperative extension office may be able to provide sources of local produce. Local youth or faith-based organizations may have the structures in place to provide community input and participation. State and national affiliates of the American Cancer Society, Diabetes, Dietetic and Heart Associations and the School Nutrition Association can also provide support for health initiatives. Even the local police department may become involved since community afterschool fitness programs not only reduce obesity rates but may also meet crime prevention goals by reducing opportunities for students to be victims or perpetrators of crimes (IOM and NRC 2009).

Since many of the methods of achieving healthy schools are similar to the goals of developing sustainable communities, partners may be found in city planning departments, parks departments, and

local universities (see Table 1). Contact the local parks department to seek help in improving school playgrounds. Parks departments may help fund renovations and in turn the facilities can be open to the public after school and in the summer. Schools can look for partners in groups working to establish farmers' market or community gardens. School gardens require community volunteers and these can be recruited from those working to start gardens. Shared goals can unite a variety of groups and pooling resources may help meet funding needs.

Funding and Resources for Community Involvement

- *Community Development Block Grants (CDBG) from the Department of Housing and Urban Development.*
    - To find out if your community receives CDBG funds, visit www.hud.gov. At www.hud.gov you can search by state to see what agencies in your community have received grant funds. http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/programs/contacts

      If you are one of the entitlement cities/counties, your community automatically receives this funding annually. State-administered funds for other communities are available by grant application to the state agency that administers the funds.

- *Youth Empowerment Program (YEP) administered by the Department of Health and Human Services, Office of Minority Health.* https://www.grantsolutions.gov/gs/preaward/previewPublicAnnouncement.do?id=14371
    - The YEP seeks to address unhealthy behaviors in at-risk minority youth and provide them with opportunities to learn skills and gain experiences that contribute to more positive lifestyles and enhance their capacity to make healthier life choices. It is intended to demonstrate the effectiveness of a highly innovative and multi-partnership collaborative approach involving institutions of higher education, primary and secondary schools, sports organizations, youth clubs, other related community organizations and institutions, and the community at-large on reducing risky behaviors among targeted minority youth 10 to 18 years of age. It is expected that the YEP will result in:

        - Reduction in or elimination of high risk behaviors.
        - Strengthening of protective/resiliency factors.
        - Development of sustainable basic life skills needed to deal with the demands of everyday life.
        - Development of skills and behaviors that lead to healthier lifestyle choices and to overall success in life.

- *Helping Children in Urban Poverty Grants, Michael and Susan Dell Foundation* http://www.msdf.org/Grants/default.aspx.
    - Working with innovative organizations around the globe, these grants seek to identify, test, refine and grow non-obvious solutions to big, obvious problems. The foundation seeks to transform the lives of children living in urban poverty today and improve the future for every generation. The foundation seeks global partners who work to 1) ensure children have access to quality educations, 2) encourage healthy behaviors and

provide access to basic health care and services, and 3) foster stable families through microfinance.

- Harlem Children's Zone www.hcz.org
  - A community-oriented program designed to address all the aspects of childhood development including Baby College (for expecting parents), pre-school, academic achievement, asthma education, and obesity prevention. The program includes Harlem Peacemakers, funded in part by AmeriCorps, to train young people to work as classroom assistants and to make their neighborhoods safe for children and families. The pilot program for HCZ begin with one city block in the early 1990's and has now expanded to serve 8,000 children and 6,000 adults.

- HealthierUS Schools Challenge, United States Department of Agriculture http://www.fns.usda.gov/tn/healthierus/index.html
  - The HealthierUS School Challenge (HUSSC) is a voluntary certification initiative established in 2004 to recognize those schools participating in the National School Lunch Program that have created healthier school environments through promotion of nutrition and physical activity.

- Community Health Assessment, available from your local health department
  - http://www.naccho.org/topics/infrastructure/CHAIP/index.cfm

- The CHANGE Tool by the CDC's Healthy Communities Program http://www.cdc.gov/healthycommunitiesprogram/tools/change.htm
  - The CHANGE tool helps community teams (such as coalitions) develop their community action plan. This tool walks community team members through the assessment process and helps define and prioritize possible areas of improvement. Having this information as a guide, community team members can create sustainable, community-based improvements that address the root causes of chronic diseases and related risk factors. It can be used annually to assess current policy, systems, and environmental change strategies and offer new priorities for future efforts.

General Resources by State

Alabama

- Agriculture in the classroom http://www.alabamaaitc.org/
- Strategic Alliance for Health, Centers for Disease Control http://www.cdc.gov/healthycommunitiesprogram/communities/sah/index.htm
    - The Strategic Alliance for Health targeted communities focus on capacity building to institute policy changes that improve physical activity and nutrition, improve access to quality healthcare, eliminate health disparities, and reduce complications from obesity.

Florida

- Agriculture in the classroom http://www.flagintheclassroom.com/
- Strategic Alliance for Health, Centers for Disease Control http://www.cdc.gov/healthycommunitiesprogram/communities/sah/index.htm
    - The Strategic Alliance for Health targeted communities focus on capacity building to institute policy changes that improve physical activity and nutrition, improve access to quality healthcare, eliminate health disparities, and reduce complications from obesity.

Georgia

- Healthy Community Grants, Wellpoint Foundation http://www.wellpointfoundation.org/wps/portal/wellpointfoundation?content_path=noapplication/f2/s0/t0/pw_b142061.htm&label=WellPoint%20Foundation%20Funding&rootLevel=2
- Agriculture in the classroom http://www.gfb.org/programs/aic/default.html
- Strategic Alliance for Health, Centers for Disease Control http://www.cdc.gov/healthycommunitiesprogram/communities/sah/index.htm
    - The Strategic Alliance for Health targeted communities focus on capacity building to institute policy changes that improve physical activity and nutrition, improve access to quality healthcare, eliminate health disparities, and reduce complications from obesity.

Kentucky

- Healthy Community Grants, Wellpoint Foundation http://www.wellpointfoundation.org/wps/portal/wellpointfoundation?content_path=noapplication/f2/s0/t0/pw_b142061.htm&label=WellPoint%20Foundation%20Funding&rootLevel=2
- Agriculture in the classroom https://www.kyfb.com/federation/program-links/ag-in-the-classroom/

Louisiana

- Agriculture in the classroom http://www.aitcla.org/

Mississippi

- Food Corps http://foodcorps.org/where-we-work/mississippi
- Health is Academic http://www.healthyschoolsms.org/ohs_main/funding_opps.htm

- Agriculture in the classroom http://www.msfb.com/Programs/aitc.aspx

North Carolina

- North Carolina Healthy Schools http://www.nchealthyschools.org/funding/
- Food Corps http://foodcorps.org/where-we-work/north-carolina

South Carolina

- Agriculture in the classroom http://www.scfb.org/getinvolved/agintheclassroom.aspx

Tennessee

- Agriculture in the classroom http://www.tnfarmbureau.org/education-resources

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