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GAO

Report to Congressional Requesters

May 2003

SCHOOL LUNCH PROGRAM

Efforts Needed to Improve Nutrition and Encourage Healthy Eating

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GAO-03-506

May 2003

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Highlights

Highlights of GAO-03-506, a report to Congressional Requesters

SCHOOL LUNCH PROGRAM

Efforts Needed to Improve Nutrition and Encourage Healthy Eating

Why GAO Did This Study

Recent trends in children's health and eating habits are alarming. Over 15 percent of children are overweight—double the rate in 1980. Children's diets are high in fat but low in fruits, vegetables, and other nutritious foods. The National School Lunch Program has had a continuing role in providing students with nutritious meals. However, serving the meals is only the first step. Students must choose to eat the nutritious food and limit the less healthful choices. GAO was asked to report on the extent to which school lunches, nationwide, were meeting nutrition standards, and schools were encouraging healthy eating, what barriers selected schools faced in accomplishing this, and what innovative steps they had taken to overcome the barriers.

What GAO Recommends

GAO recommends that the Secretaries of Agriculture, Health and Human Services, and Education work together to identify specific strategies to help schools promote nutrition education while meeting the demands of state academic standards and to encourage each state to identify a focal point to promote collaborative efforts that would further develop nutrition education activities for schools.

www.gao.gov/cgi-bin/getrpt?GAO-03-506.

To view the full report, including the scope and methodology, click on the link above. For more information, contact David D. Bellis at (415) 904-2272.

What GAO Found

Schools are moving toward meeting school lunch nutrition requirements, but more improvements are needed. According to national studies, lunches meet requirements for nutrients such as protein, vitamins, calcium, and iron, but do not meet the required 30 percent limit for calories from fat. Also, efforts to encourage healthy eating could be increased. Students may need more exposure to nutrition education to effect positive changes in their behavior, and most students have access to foods of little nutritional value, such as soft drinks and candy, at school.

In schools we visited, barriers to providing nutritious meals and encouraging healthy eating included budget pressures and competing time demands. Regarding providing nutritious food, officials said when they introduce healthier foods, they take the risk that students will buy fewer school lunches resulting in loss of needed revenue. Regarding encouraging healthy eating, officials said the focus on meeting state academic standards limited time to teach nutrition. Also, schools paid for special activities or other items not covered in the school's budget with profits from vending machines and snack bar sales.

Schools had taken a variety of innovative steps to overcome barriers. With respect to providing nutritious food, while minimizing the risk students might reject healthier choices, schools modified recipes to lower the fat content of popular foods such as pizza and conducted taste tests before adding healthier choices. To encourage healthy eating, schools found time to teach nutrition by integrating nutrition lessons into reading and math classes, and some established school food policies to restrict unhealthy choices. Some schools enlisted help from parents, community organizations, and businesses. Officials noted that overcoming barriers required strong and persevering leadership.

Some Schools Encourage Healthy Eating

Source: GAO.

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Abbreviations

CDC	Centers for Disease Control and Prevention
MOU	Memorandum of Understanding
NSLP	National School Lunch Program
SFA	School Food Authority
SNDA	School Nutrition Dietary Assessment Study
SHPPS	School Health Policies and Programs Study
USDA	United States Department of Agriculture

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Accountability * Integrity * Reliability

United States General Accounting Office
Washington, DC 20548

May 9, 2003

The Honorable Tom Harkin
Ranking Minority Member
Committee on Agriculture, Nutrition, and Forestry
United States Senate

The Honorable Richard G. Lugar
United States Senate

The nation faces a complex challenge in addressing recent trends in children's health and eating habits. The percentage of children ages 6 to 19 who are overweight has more than doubled to over 15 percent since 1980, and the incidence of Type II diabetes—closely associated with obesity—has also increased in the past decade. Children's diets are too high in fat but low in fruits, vegetables, and other foods that provide needed nutrients, according to the U.S. Department of Agriculture (USDA). At the same time, a recent study reported that, in 2001, nearly one-half million children lived in households in which one or more children were hungry at some time during the year because the household lacked money enough for food.[1] Healthy eating patterns in childhood are important to promote optimal intellectual development and prevent health problems.

The National School Lunch Program has played a continuing role in school-based efforts to provide students with nutritionally balanced meals at low or no cost. In fiscal year 2002, about 28 million children each day at about 99,000 public and nonprofit schools and residential child care institutions received meals through this program. USDA's Food and Nutrition Service administers the program at the federal level, and state education agencies typically administer and monitor the program through agreements with local school food authorities—offices responsible for managing the school meals program in one or more schools. School food authorities that choose to participate are federally subsidized for each meal they serve. To be reimbursable, meals must meet certain nutritional

[1]Mark Nord, Margaret Andrews, and Steven Carlson, *Household Food Security in the United States, 2001* Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, 2002.

requirements. However, serving nutritious lunches and other meals is only the first step in promoting a healthy school food environment. Students must choose to eat the nutritious meals as well as limit the other less healthful food they may eat during the day.

Because of your concern about the serious diet-related health problems faced by the nation's children and the role of school lunches in addressing the problems, you asked us to answer the following questions: (1) What is known nationally about the extent to which schools and school food authorities are meeting USDA nutrition requirements and promoting healthy eating among students? (2) What barriers do schools and school food authorities face in serving nutritious food and encouraging students to make healthy eating choices? (3) What steps have schools and school food authorities taken to overcome the barriers to serving nutritious food and encouraging students to make healthy eating choices? We are also issuing two other related reports—one concerns keeping school meals safe from food borne illness and the other addresses the cost of school meals.[2]

To report on the extent to which schools are meeting USDA nutrition requirements and promoting healthy eating among students, we relied primarily on the findings of three national studies[3] considered to be authoritative by researchers and other experts in the field. A statistician and a social scientist examined each study to assess the adequacy of the samples and measures employed, the reasonableness and rigor of the statistical techniques used to analyze them, and the validity of the results and conclusions that were drawn from the analyses. To report on the barriers schools face and the efforts schools and districts have made to

[2]U.S. General Accounting Office, *School Meal Programs: Few Instances of Food Borne Outbreaks Reported, but Opportunities Exist to Enhance Outbreak Data and Food Safety Practices*, GAO-03-530 (Washington, D.C.: May 9, 2003) and *School Meal Programs: Revenue and Expense Information from Selected States*, GAO-03-569 (Washington, D.C.: May 9, 2003).

[3](1) U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis, Nutrition and Evaluation, *School Nutrition Dietary Assessment Study II*, *Final Report* (SNDA-II), July 2001. For subsequent references to the same work: SNDA-II; (2) Centers for Disease Control and Prevention, *School Health Policies and Programs Study 2000: A Summary Report*, (SHPPS 2000) Journal of School Health, Volume 71, Number 7, September 2001. For subsequent references to the same work: SHPPS 2000; and (3) U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis, Nutrition and Evaluation, *The School Meals Initiative Implementation Study*, *Third Year Report*, *June 2002*.

overcome the barriers to serving nutritious food and encouraging healthy eating choices, we reviewed the literature and consulted with experts in the school lunch program and child nutrition area. On the basis of recommendations from these sources, we identified and selected states for site visits that were recognized leaders in the area, schools that had approaches already in place, and schools that had not yet fully implemented such efforts. We selected schools for site visits that represented a range of the following characteristics: school district size, locale (rural, urban, or suburban), type of school (elementary and secondary), and percent of students eligible for free or reduced price meals. We conducted on-site reviews of school lunch activities at 22 schools in California, Kentucky, Michigan, Rhode Island, and Texas.[4] We discussed state operations and activities with officials in each state. In each school district, we discussed efforts and barriers to providing nutritious food and encouraging healthy eating choices with school food authority officials, food service site managers, school principals, and teachers. At some locations, we also discussed efforts with students and parents. We conducted our study from August 2002 to March 2003 in accordance with generally accepted government auditing standards.

Results in Brief

Schools have made significant progress in meeting USDA nutrition requirements since the mid-1990s but need to make improvements both in meeting the nutrition requirements and in promoting students' healthy eating choices, according to national studies of school lunches. Regarding nutrition requirements, the studies found that in 1991-92 and 1998-99, the average school lunch exceeded the required amount of nutrients, such as protein, vitamins A and C, and calcium. Additionally, schools have reduced the average proportion of calories from fat in lunches from 38 to 34 percent, nationwide, during this period. However, more than three-quarters of schools have not yet achieved the required rate of no more than 30 percent. Regarding encouraging healthy eating, a national study of nutrition education in kindergarten through fifth grade found that nutrition is taught by most teachers. However, studies suggest, not enough to show an impact on children's behavior. Moreover, national studies also noted that even when at school, students had access to food from a number of sources other than the meals that are regulated by USDA's programs. For example, students at most secondary schools and many elementary

[4]In addition, we visited one school and talked with a school food official in both Virginia and Washington State.

schools can purchase foods and beverages of limited nutritional value from vending machines and school stores.

Some school and school food authority officials in the 22 schools we visited cited barriers they faced in improving the nutritional quality of their lunches; however, many we spoke with expressed greater concern over the barriers to promoting healthy eating among students. In regard to improving the nutritional quality of lunches, many officials cited a barrier that was financial rather than dietary. They said that when school food authorities introduce healthier foods with lower fat content they take the risk that students will not like the menu changes and will buy fewer school lunches. Because school food authorities operate their programs on a break-even financial basis, and student meal payments make up a large part of their revenue, a decrease in meals purchased can throw their budget out of balance, officials said. With respect to encouraging healthy student eating habits, many teachers and school officials told us that their ability to place more emphasis on teaching nutrition and good dietary habits was limited by the increased focus on devoting class time to the subject matter needed to meet state academic standards. Officials also said that they face barriers to restricting student in-school access to foods of limited nutritional value. For example, many school principals and organizations told us they receive money from vending machines and sales of other food and beverages that may be of limited nutritional value. They said it is difficult to limit these sales because the funds are often used to pay for special activities or items not covered in the school's budget. Similarly, school food authority officials told us that to help manage their budgets, they have chosen to sell less healthful items in the cafeteria, in competition with the USDA reimbursable meals.

Many of the schools and districts we visited had taken steps to overcome such barriers. To improve nutritional quality while minimizing the risk that students would reject healthier choices, some schools developed recipes and techniques that lowered the fat and sodium content of popular foods such as pizza and enchiladas without sacrificing the appeal of these items. Some schools conducted student taste tests before they added new and healthier choices such as yogurt and salads. To encourage healthy eating, some schools changed their cafeteria layout and offered more healthy choices—for example, offering lunch stations or lines with different themes, such as soup and salad or deli sandwich selections. To expand students' opportunities to learn about healthy eating despite limited class time, some schools integrated nutrition education into the existing reading and math curricula and displayed nutrition bulletin boards. To restrict other, less healthy food choices, a few schools had established a school

food policy that, for example, limited certain vending machine items or improved the nutritional quality of foods on school grounds. Finally, some schools had devised a broader approach that reached beyond the school to enlist help from parents, community organizations, and businesses. Together, they sponsored health fairs and organized health-related family activities to raise nutrition awareness. Officials told us that their efforts to overcome barriers and make any change—particularly involving collaboration on a school or community wide level—required strong and persevering local leadership with a focus on nutrition and healthy eating. Leadership at the state level was also viewed as valuable.

In support of such efforts, USDA and the Departments of Health and Human Services and Education have recently signed a memorandum of understanding—an important step in establishing a partnership to address student nutrition and other health-related issues. We recommend that the agencies, using the partnership as a foundation, identify specific strategies and develop materials to help schools promote nutrition education while also meeting the requirements of state academic standards. We further recommend that the agencies, working together through the memorandum of understanding, encourage states to identify a focal point in each state to promote collaborative efforts that would further develop nutrition education activities for the schools.

We received oral comments on this report from USDA and written comments from the Departments of Health and Human Services and Education. The agencies generally agreed with the report and recommendations. However, the Department of Education expressed concern that the information we present appears to imply that accountability provisions in the No Child Left Behind Act may contribute to compromising a healthy eating environment in schools. We believe that nutrition education and other components of a healthy eating environment can and should be compatible with schools' efforts to meet the requirements of state academic standards. It is for this reason that we recommended that federal agencies work together to help schools promote nutrition education and healthy eating among students. See appendixes I and II for the written comments.

Background

The National School Lunch Program (NSLP), established in 1946 and amended many times, provides nutritionally balanced, low-cost or free meals to children throughout the United States. Over 180 billion lunches have been served since the program's inception. USDA's Food and Nutrition Service, state agencies—usually departments of education—and

school food authorities (SFAs) all play a role in managing the program. SFAs that choose to take part in the program are reimbursed with cash subsidies and receive donated commodities from USDA. In return, they must serve lunches that meet federal requirements and offer free or reduced price lunches to eligible children. The federal government reimburses the states, which in turn reimburse SFAs for each meal served.[5] In fiscal year 2001, the federal government spent over $6 billion in cash reimbursements and commodities for school lunches. To ensure nutritional quality, regulations developed under the National School Lunch Act initially required schools to include specific serving sizes of food such as fruits, vegetables, and whole milk in school lunches. In 1994, Congress amended NSLP requirements with the Healthy Meals for Healthy Americans Act[6] to require schools to serve meals that adhere to Dietary Guidelines for Americans, which include limits on total fat and saturated fat. Additionally, school meals must meet one-third the recommended daily allowance for calories and for nutrients such as protein, calcium, iron, and vitamins A and C. Compliance with the standards is determined by averaging the nutritional content of the lunches offered over a school week.

SFAs have flexibility in operating their school meal programs. They may operate the programs themselves or contract with food service management companies to perform functions such as planning and preparing menus and selecting and buying food. All or some food preparation may occur at on-site school kitchens or at central kitchens, which distribute food to satellite schools. In addition, SFAs select one of five menu-planning approaches they use to comply with nutritional requirements: two food-based, two nutrient-based—as well as a fifth option for "any reasonable approach." In a food-based approach, SFAs plan meals to include minimum quantities of five meal pattern items (i.e., milk, meat or meat alternative, two different servings of vegetables and/or fruits, and bread or grain products). In a nutrient-based approach, SFAs prepare a computerized nutritional analysis of the week's menu to ensure that the meals meet nutritional requirements. Schools that use a nutrient-

[5]In school year 2002-03, USDA reimbursed participating schools $2.14 for every free lunch meal provided, $1.74 for every reduced price lunch meal sold, and $0.20 for every other lunch meal sold. The rates are the minimum cash amounts reimbursed. USDA also provides higher amounts for districts with 60 percent or more children approved for free and reduced-price meals, districts in Hawaii and Alaska, and districts identified by states as having critical needs in order to ensure equitable distribution.

[6]P.L. No. 103-448, sec. 106 (1994).

based approach are required to serve milk and to offer at least one entrée and one side dish.

To increase student participation and reduce waste, an "offer vs. serve" provision in NSLP was introduced. Previously, for reimbursable lunches, the entire meal package was served to students. Under the new provision, schools offer foods that meet nutrient requirements and encourage students to take them. Students are not required to take all menu items, but must select specific menu items for a meal to be reimbursed. For example, in SFAs that use a food-based menu planning system, students must take a full portion of a least three of five meal-pattern items offered for a lunch to be reimbursable. In SFAs that use a nutrient-based system and offer the minimum of three menu items, students must select at least two of the USDA meal-pattern items offered, one of which must be an entrée. If more than three menu items are offered, students may decline a maximum of two menu items, however, the entrée may not be declined. SFAs are required to use the offer vs. serve provision for senior high school students, and they have the discretion to use the provision for elementary and middle school students.

NSLP requires state agencies to conduct periodic evaluations of SFA compliance with nutritional and other requirements. State agencies often review SFA compliance with the School Meals Initiative in conjunction with the broader-based administrative reviews called Coordinated Review Efforts that are conducted every 5 years. The procedures followed in conducting School Meals Initiative reviews depend upon the menu planning system used by the SFA. For SFAs using food-based menu planning systems, the state agency must conduct its own nutrient analysis of the menu served during the review period. For SFAs using nutrient-based systems, the state agency reviews the menus and production records and assesses the SFA's nutrient analysis for a 1-week period, which can be any week of the current school year prior to the period of review.

SFAs and schools may allow the sale of food in addition to meals served through NSLP. Under USDA regulations, these foods are considered "competitive foods" if they are sold in competition with lunches served under the program in food service areas during the lunch periods. Competitive foods may also include foods and beverages purchased from vending machines, school stores, and snack bars. The regulations provide the states and SFAs with discretion as to whether to impose restrictions on the sale of all foods, such as by limiting the time or locations of the sales. However, under the regulations, the schools must prohibit the sale

of "foods of minimal nutritional value" in the school cafeteria during meal periods. The federal regulations do not, however, prohibit the sale of foods of minimal nutritional value outside the cafeteria any time during the school day.[7] Foods of minimal nutritional value are defined in federal regulations and include, for example, carbonated soft drinks, chewing gum, and marshmallow candies.

In addition to providing assistance in meeting nutrition requirements, USDA's Food and Nutrition Service established the Team Nutrition initiative in 1995 to develop and disseminate a package of materials that encourage healthy eating and physical activity among students. These materials focus on the benefits of good nutrition and motivating students to change their behavior. Additionally, Team Nutrition provides grants to states and technical assistance materials for school food service personnel and classroom nutrition education materials as well as guidance and materials on how to build school and community support for healthy eating, physical activity, and a healthy school nutrition environment. The initiative has its own Web site and recently began an electronic newsletter to food service personnel as another channel to share ideas for implementing activities and concepts at state and local levels. Changing the Scene and Eat Smart-Play Hard, two additional USDA initiatives that provide resources to promote healthy eating and physical activity are also available to schools. Additionally, the Department of Health and Human Services' Centers for Disease Control and Prevention (CDC) has developed and disseminated a variety of materials and information to help schools implement efforts to address health issues, including nutrition and physical activity. CDC has also provided funding to promote healthy eating and physical activity. For example, in 2000, CDC initiated a grant program to support state health departments in developing and implementing nutrition and physical activity interventions. In 2003, CDC provided support for coordinated school health programs in 22 states that focused on promoting healthy eating behaviors, physical activity, and tobacco use prevention among students. Finally, the role of schools and the community in addressing the national problem of child obesity is underscored in "The

[7]In *National Soft Drink Ass'n. v. Block*, 721 F.2d 1348 (D.C. Cir. 1983), the Court of Appeals for the District of Columbia overturned the federal regulation in effect at the time prohibiting the sale of foods of minimal nutritional value anywhere in the school from the beginning of the school day until the last meal period. The court construed a 1977 amendment to the Child Nutrition Act as allowing USDA to regulate the sale of competitive foods only in food service areas during meal periods. Following this decision, USDA amended its regulation to limit the prohibition of these foods to food service areas during meal periods.

Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity." This document—published in December 2001—emphasizes the seriousness of the health problems associated with being overweight or obese and outlines strategies that communities can use to address overweight and obesity by focusing on both improved nutrition and increased physical activity. The document also recommends providing more healthful food options on school campuses as well as requiring physical education in all school grades. USDA officials reported that Team Nutrition and CDC collaborate on an ongoing basis and are currently developing implementation materials for schools to use to improve their school nutrition environment. The materials address issues such as offering and promoting nutritious food and beverage options in vending machines, school stores, and a la carte. The officials said they will also report on case studies of schools that have made successful changes.

Schools Moving Toward Meeting Nutrition Requirements, but Improvements Needed

Schools have made measurable progress, nationwide, in meeting USDA nutrition requirements and other guidelines over the past decade. Additional improvement, however, is needed not only in meeting the nutrition requirements, but also in encouraging students to eat more healthfully. With respect to nutritional quality, on average, schools are exceeding the requirements for a variety of nutrients. However, while most schools have reduced the average percent of calories from fat in school lunches, few have met the required goal for fat content. Regarding promoting healthy eating, nutrition education is taught at most schools, but studies suggest it may not be enough to show an impact on student behavior. Moreover, students at most secondary schools and many elementary schools nationwide have access to a variety of food and beverages from vending machines, school stores, and other sources that is of little nutritional value—for example, high in fat, sodium, and/or added sugars, but low in nutrients such as vitamins or minerals.

School Lunch Nutrition Improving but Still Not Meeting Requirements

In school year 1991-92, a USDA national study to determine the nutritional quality of school meals found that schools were generally meeting standards for nutrients, including protein, vitamins A and C, calcium, and iron.[8] The average calorie content of elementary school lunches was

[8]Mathematica Policy Research, Inc., *The School Nutrition Dietary Assessment Study, School Food Service, Meals Offered, and Dietary Intakes*, (SNDA-1), Oct. 1993. For subsequent references to the same work: (SNDA-I).

somewhat higher than the standard, and the calorie content of secondary school lunches was slightly lower than the standard. However, the study also found that levels of fat, saturated fat, and sodium[9] in school lunches were not consistent with the standards set out in the "Dietary Guidelines for Americans."[10] As a result of those findings, USDA developed the School Meals Initiative to improve the nutritional quality of school meals through, for example, changes in meal menu planning requirements and enhanced training and technical assistance for school food service personnel.[11]

In school year 1998-99, a USDA follow-up study provided an updated national picture of the nutrient profile of school meals.[12] According to this study, schools across the nation have, on average, continued to meet or exceed required nutrient standards for protein, vitamins A and C, calcium, and iron. The average calorie content of elementary school lunches continued to be somewhat higher than the standard and that of secondary school lunches, slightly lower. The study also reported a significant trend toward lower total fat levels in school lunches from nearly 38 percent of total lunch calories in 1991-92 down to about 34 percent in 1998-99, however, still above the required 30-percent standard. Additionally, according to the study, while the number of schools meeting the 30-percent standard had increased substantially, more than three-quarters of elementary and secondary schools still had not yet achieved that goal. Sodium levels had also declined significantly in both elementary and secondary schools but were still considerably higher than the 800-mg. standard. Table 1 compares the nutritional content standards with findings from these two studies.

[9]According to USDA officials, the standard for sodium level used in SNDA-II is based on National Research Council recommendations.

[10]U.S. Department of Agriculture and U. S. Department of Health and Human Services, *Nutrition and Your Health: Dietary Guidelines for Americans*, 3rd edition, Washington, D.C. (1990).

[11]At the time SNDA-I was conducted, schools were not required to offer meals that were consistent with the *Dietary Guidelines for Americans*.

[12]SNDA-II.

Table 1: Mean Nutrient and Caloric Content of School Lunches Offered in School Year 1998-99 and School Year 1991-92 Compared with NSLP Standards

	NSLP standard	SY 1991-92[a,b]	SY 1998-99[a,b]	Percent change (SY 1991-92 vs. SY 1998-99)
Elementary schools				
Protein (gm)	10	30	30	0
Vitamin A (mcg RE)	224	397	491	+24[d]
Vitamin C (mg)	15	28	37	+32[d]
Calcium (mg)	286	483	505	+5[d]
Iron (mg)	3.5	4.1	4.6	+12[d]
Sodium (mg)	800	1,399	1,285	-8[d]
Cholesterol (mg)	100	84	68	-19[d]
Total calories	664	715	738	+3
% Calories from fat	30%	37.5%	33.5%	-11
% Calories from saturated fat	10%	15.2%	11.9%	-22[d]
Secondary schools				
Protein (gm)	16	33	33	0
Vitamin A (mcg RE)	300	418	519	+24[d]
Vitamin C (mg)	18	34	42	+24[d]
Calcium (mg)	400	518	542	+5[d]
Iron (mg)	4.5	4.8	5.0	+4[c]
Sodium (mg)	800	1,641	1,502	-8[d]
Cholesterol (mg)	100	95	75	-21[d]
Total calories	825	820	798	-3
% Calories from fat	30%	37.5%	33.7%	-10[d]
% Calories from saturated fat	10%	14.6%	11.8%	-19[d]

Source: SNDA-II pp. 148-155.

Note: NSLP Standards reflect minimums defined in current program regulations for grades K-6 (elementary schools) and grades 7-12 (secondary schools). NSLP standards for the percentage of calories from fat and saturated fat were not in effect during SY 1991-92. NSLP standards reflect minimum content requirements for total calories, protein, vitamins A and C, calcium, and iron and maximum content limitations for sodium, cholesterol, calories from fat, and calories from saturated fat.

[a]Data for all public schools in the first School Nutrition Dietary Assessment Study (SNDA-I).

[b]Data from the second School Nutrition Dietary Assessment Study (SNDA-II).

[c]Difference between SY 1991-92 and SY 1998-99 is statistically significant at the 0.01 level.

[d]Difference between SY 1991-92 and SY 1998-99 is statistically significant at the 0.001 level.

The 1998-99 study also points out that schools may also offer low fat menu options that allow students to choose menu items that provide a lunch that meets the standard, even when the average lunch offered exceeds the 30-percent standard for calories from fat. The percentage of elementary schools that provided such low-fat options increased from 34 percent to 82 percent and for secondary schools, from 71 percent to 91 percent between school years 1991-92 and 1998-99. The study further reported that

99 percent of elementary schools and 96 percent of secondary schools were meeting the cholesterol standard of 100 mg. or less. However, only 1 percent of elementary schools and less than 1 percent of secondary schools were meeting the sodium content standard of 800 mg. or less.

Efforts to Encourage Healthy Eating Could be Increased at Many Schools

In addition to making progress in serving nutritious meals, schools have made a variety of efforts to encourage healthy eating among students. However, such efforts remain limited in many locations, according to national studies. Nutrition education is one way to promote good dietary habits among youth, and a Department of Education study found that in school year 1996-97, 88 percent of kindergarten through fifth-grade teachers presented lessons about nutrition.[13] According to that study, the average total amount of time teachers devoted to nutrition education was 13 hours per school year. Further, a CDC study found that most schools, at all grade levels, require some nutrition to be taught, however, the median amount of time spent on nutrition education as part of schools' health education classes was 5 hours during the elementary years, 5 hours during the high school years, and 4 hours during the middle school years.[14] A 1995 report summarizing the research on nutrition education for school age children concluded that time and intensity of the instruction offered do matter. Programs with longer durations, more contact hours, and more components, such as parent involvement and changes in school meals, result in more positive outcomes.[15] Additionally, the study emphasizes the importance of focusing on student behavior—an approach also supported by the Department of Education report. The study concludes that, given the limited amount of time available, those interventions that focus on specific student behaviors, such as reduced fat intake or use of salt, result in more behavioral change than do general nutrition education programs. Finally, the study underscores the importance of providing a healthy school environment to reinforce and encourage students to make healthy eating choices.

[13]U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, *Nutrition Education in Public Elementary School Classrooms, K-5*, (Feb. 2000).

[14]SHPPS 2000.

[15]Leslie A. Lytle, Nutrition Education for School-aged Children, Journal of Nutrition Education, Vol. 27, No. 6, (Dec. 1995).

The school environment—both inside and outside the cafeteria—is important in encouraging healthy eating by providing students with access to healthful food choices and models of healthful food practices. The 2000 CDC study highlights the need to address those aspects of the school nutrition environment that are not regulated by USDA, such as a la carte cafeteria items and food and beverages in vending machines, school stores, and snack bars.[16] The study reports that while many schools offered low fat foods and fruits and vegetables, many also offered foods and beverages of limited nutritional value that competed with the healthful food for student selection. For example, while 36 percent of elementary school SFAs served low-fat baked goods a la carte in the cafeteria, nearly 49 percent served baked goods that were not low in fat. Additionally, about 43 percent of elementary schools, 74 percent of middle schools, and 98 percent of high schools have vending machines, school stores, canteens, or snack bars, according to the study, which often offered foods high in fat, sodium, or added sugars. Table 2 shows the percentage of schools that offer various foods for sale to students in competition with school lunches both within the cafeteria as a la carte selections and outside the cafeteria.

[16]SHPPS 2000.

Table 2: Percentage of Schools Offering Selected Foods in Competition with School Lunches

Numbers in percent

Type of food or beverage	Schools offering food or beverage a la carte			Schools where students can purchase food or beverage in vending machines, school store, canteen, or snack bar		
	Elementary schools	Middle/Junior high schools	Senior high schools	Elementary schools[a]	Middle/Junior high schools[b]	Senior high schools[c]
Low in fat						
100% fruit or vegetable juice	57.8	63.9	77.4	49.4	53.1	65.0
Fruits or vegetables	68.1	74.0	90.4	20.0	11.8	22.0
Low-fat cookies, crackers, pastries	36.1	40.8	48.0	26.4	37.7	49.6
Low-fat salty snacks	29.5	42.6	58.3	44.5	54.5	65.0
High in fat, sodium, or added sugars						
Soft or sports drinks or fruit drinks not 100% juice	19.0	40.3	57.2	58.1	83.5	93.6
Chocolate candy	2.4	8.9	23.7	29.2	46.6	72.2
Cookies, crackers, pastries not low-fat	48.8	66.8	79.9	52.6	61.2	80.7
Salty snacks not low-fat	25.8	40.6	57.8	51.0	62.4	83.0

Source: School Health Policies and Programs Study, 2000.

[a]Among the 43.0 percent of elementary schools with a vending machine, school store, canteen, or snack bar.

[b]Among the 73.9 percent of middle/junior high schools with a vending machine, school store, canteen, or snack bar.

[c]Among the 98.2 percent of high schools with a vending machine, school store, canteen, or snack bar.

According to the study, a relatively small percentage of school districts have policies in place that require the sale of healthy choices or that restrict the sale of foods with little nutritional value. For example, only about 19 percent of districts require schools to offer fruit and vegetables as a la carte items, and 23 percent of districts require schools to prohibit the sale of foods that have little nutritional value as a la carte items. Furthermore, about half of school districts have a contract that gives a company rights to sell soft drinks at schools in the district. Most of those districts receive a percentage of sales receipts or other incentives.[17] Finally, in most schools, organizations such as student clubs, sports teams,

[17]For more information on commercial activities in schools, see U.S. General Accounting Office, *Public Education: Commercial Activities in Schools*, GAO/HEHS-00-156 (Washington, D.C.: Sept. 8, 2000).

and parent-teacher associations sell food to raise money, and the food sold is typically high in fat and added sugars, according to the study.

Barriers Exist to Providing Nutritious Food and Encouraging Healthy Eating Choices

School and SFA officials in the 22 schools in 13 school districts that we visited cited a number of barriers to meeting nutrition requirements and improving school lunch nutritional quality. However, many officials we spoke with were more concerned with the barriers they faced in encouraging healthy eating among students and establishing a broader community approach. Regarding improving nutritional quality and meeting USDA requirements, SFA officials said that the pressure to balance their budgets could affect the food served in the school.[18] Also, according to state officials we spoke with, they have limited ability to enforce the nutrition requirements. Regarding encouraging healthy eating, school officials said that they have limited time and resources available to teach nutrition education. Additionally, school principals and organizations are reluctant to limit the sale of food and beverages of limited nutritional value at the schools that we visited because they use the money to support student activities not covered in the school budget.

Budget Pressures Can Affect Nutritional Quality of Food

SFA officials we talked with cited financial barriers to providing nutritious meals. Many officials said that they are under pressure to balance their budgets, while at the same time provide meals that meet USDA nutrition guidelines and appeal to students. Some officials said that providing a lunch that meets USDA's guidelines for nutrition and comes in under budget is achievable, but the challenge is in preparing healthful foods that are also appealing to the students and that students will select and eat. Many SFA officials said that when they make changes in the menu items offered, such as lowering the fat content or introducing new items, they run the risk that students will not like the changes and will decline to participate. They noted that because food service programs are typically required to operate on a break-even basis, and student meal payments make up a large part of their revenue, a decline in participation could have a negative effect on the budget. For example, in Rhode Island, an official told us that several years ago SFA officials decided to no longer offer deep-fried French fries to the students. Disappointed by this decision, the

[18]For more information on school meal revenues compared to expenses in school years 1996-97 through 2000-01, see U.S. General Accounting Office, *School Meal Programs: Revenue and Expense Information from Selected States*, GAO-03-569 (Washington, D.C.: May 9, 2003).

students boycotted the entire school lunch program. Within a week the school restored them to the menu—but as an a la carte item. Some SFA officials mentioned that the school food service staff has sometimes been reluctant to adopt standardized recipes that did not include bacon fat, butter, cream, or other ingredients that made their recipes popular with the students.

When schools serve meals that do not comply with federal nutrition requirements, enforcement options are limited, according to state and federal officials. If the state School Meals Initiative review reveals noncompliance, the state agency works with district officials to develop a plan to correct deficiencies and follows up to monitor the progress of the plan. Although regulations allow for withholding of federal meal reimbursements if the SFA has not been acting in good faith to meet the terms of the corrective action plan, state and USDA officials questioned whether this offers a practical or realistic solution because of the possibility of program cutbacks or closure and the effect on the students, especially those receiving free or reduced price lunches.

Efforts to meet various school and district financial pressures have led SFAs to serve less healthful a la carte items in the cafeteria in competition with school lunches. While a la carte items can include such things as fruit and milk, they may also include cookies, candy, ice cream, and deep-fried French fries. One SFA director said that a la carte sales help her balance the budget. She said the SFA probably sells about $600 a day in a la carte items, such as pudding, toaster pastry, beef jerky, and cheese sticks. Less healthful a la carte items may be sending a mixed nutrition message to students, according to officials. SFA officials said that they recognize that some of the a la carte items offered are less nutritious or healthful, but said they need the revenue the items generated to help balance their budgets.

Competing Time and Budget Pressures May Compromise Healthy Eating Environment in Schools

School and SFA officials we spoke with said that time constraints and financial needs within the school sometimes compromise efforts to encourage healthy eating choices among students. Principals, teachers, and other officials said that classroom time is focused almost entirely on making sure that students meet state academic standards, and little time is left to include subjects or information not included on the state academic

standards test.[19] One SFA director said that state testing is leading the curriculum—social skills, nutrition education, and other subjects are being left out. As another official said, "If you want it taught, get it on the test." Three states we visited required students to take nutrition education as part of a health class at the secondary level, but only one state included it when preparing for a required statewide health test. Several schools we visited taught some nutrition education—often as part of a consumer and family sciences course, health, or physical education at the secondary level (middle, junior, and senior high schools). These classes were usually elective and taken by only a few students. Some districts we visited included nutrition as part of their health curriculum at various grade levels, but typically limited it to a few hours class time. Finally, while a variety of materials and information is available to assist teachers in presenting nutrition information to both elementary and secondary students, some teachers said they were not aware of, or did not have time to locate and utilize these resources.

Students at the schools we visited also had access to soft drinks, candy, and other foods of limited nutritional value elsewhere in the school because, according to officials, the school relies on the revenue. For example, at several schools we visited the profits from soda vending machines generated several thousand dollars over a year's time to be used at the discretion of the principal. Some principals said that it was their only funding source for expenditures such as awards for students' academic and athletic achievements, for school or class fieldtrips, and for other educational opportunities. One principal bought a bassoon for the school orchestra because a particularly promising low-income student musician needed it. Officials said that finding another source of funding to replace that generated by these machines would be difficult, and as one principal said, "It would be World War III if the machines were removed."

[19]In 1994, Congress mandated major changes to Title I of the Elementary and Secondary Education Act in response to concerns that Title I funding was not significantly improving the educational achievement of at-risk students. Under the 1994 reauthorization, states were required to adopt or develop challenging curriculum content and performance standards, assessments aligned with content standards, and accountability systems to assess schools' and districts' progress in raising student achievement. The No Child Left Behind Act of 2001 augmented the assessment and accountability requirements that states must implement and increased the stakes for schools that fail to make adequate progress. For more information on state implementation of these requirements see U.S. General Accounting Office, *Title I: Education Needs to Monitor States' Scoring of Assessments*, GAO-02-393, (Washington, D.C.: April 1, 2002).

Many schools that we visited also sold food and beverages as part of Parent Teacher Association or athletic team fundraisers or other school club sales. They acknowledged that often these items sold outside of the cafeteria—such as candy and cookies—are of limited nutritional value. However, officials said that the profits made from these sales provide funds for school activities or projects that would otherwise not be funded, so officials say they are reluctant to restrict or prohibit them. Additionally, in some schools that we visited, a healthy nutrition environment was compromised by teachers and others using foods of limited nutritional value, such as candy and cookies, as a reward for good classroom or hallway behavior, scoring well on a test or project, or from even bus drivers for good conduct on the bus. Some school or PTA activities also included refreshments that were of limited nutritional value. Officials said that foods of limited nutritional value were often less expensive and more convenient.

Schools Have Implemented Approaches to Overcome Barriers

The schools and SFAs that we visited had established a variety of approaches to overcome the barriers they face in providing nutritious food and encouraging students to make healthy eating choices. Nearly all the visited schools had taken actions to improve the nutritional quality of the food served to students and at the same time help ensure that the food would be appealing to the students. To promote healthy eating habits among their students, some schools offered nutrition education both in and outside the classroom. Some had taken steps to limit students' access to foods of limited nutritional value at school. A number of schools had enlisted community organizations and businesses for assistance and resources to help sponsor activities outside the classroom such as health fairs, family events, and nutrition awareness campaigns. Additionally, state and federal agencies had a number of efforts in place to support local initiatives and community-wide collaborations.

A Variety of Efforts Are in Place to Improve Nutritional Quality of School Meals

In most of the SFAs that we visited, officials had taken a number of steps to improve the nutritional quality of the food. For example, some food service officials had modified the recipes of several foods that are popular with students, such as enchiladas and macaroni and cheese, to make them more nutritious yet still appealing to student palates. Their techniques included baking rather than frying, reducing salt usage, and substituting low-fat ingredients wherever possible, such as in gravies, cheese sauces, and salad dressings. At one high school in Kentucky, the food service replaced the nacho cheese sauce with a low-fat substitute, and students told us they were not aware of the change. Several SFA directors said that

they worked with vendors of prepared food to provide items that had healthier nutritional specifications and lower fat content. For example, an SFA in Washington State negotiated with a vendor to supply French fries with less fat and sodium. In Kentucky, an SFA worked with venders to provide low-fat pizza and chicken nuggets.

School food service managers and school officials found that expanding the number and variety of healthy food choices increased the likelihood that students would select them. Two of the schools that we visited were part of a six-school research project that focused on increasing the number of healthy lunch options available to students. Researchers reported that when the number of healthy entrees was increased, the percent of students purchasing them increased and has stayed higher than pre-intervention levels. Also, several SFAs periodically provided free taste testing or samples of proposed new additions to the school lunch. SFA directors considered the student preferences and made changes in the menu as long as their food service operation broke even financially as required. We visited an elementary school in northern Virginia when students were participating in a taste test. The students said that they enjoyed the opportunity to taste the new items. Students filled out an evaluation form, after they ate each sample, providing comments and indicating how much they liked or disliked the item. The SFA director said that the tastings increased student awareness of healthier food items and induced them to taste items that they may not have normally chosen on their own.

Schools Have Implemented Activities to Promote Healthy Eating Choices

The schools and SFAs we visited had efforts in place to overcome the barriers to encouraging healthy eating. They initiated changes in the cafeteria and education activities in the classroom and beyond. Some actions extended throughout the school and to the local community. Efforts to support school activities are also taking place at the state and federal levels.

Efforts in the Cafeteria

SFAs in the districts that we visited had introduced a variety of approaches in their cafeterias to make healthier school food more appealing to students. One approach was to package the food in a manner similar to what students find in fast-food restaurants. For example, a high school in Washington State modeled its salads on those found in a leading chain restaurant. A Kentucky high school served its reduced-fat pizzas in small boxes imprinted with a brand name logo; and a Rhode Island high school used colorful wrappers for its sandwiches. In another approach, a California SFA found that vegetable consumption increased when kitchen

staff let the students serve themselves from the garden bar rather than take vegetables served in individual bowls.[20] In addition, one district we contacted increased the appeal of healthier food by reducing the selling price of items such as string cheese, fresh fruit, and sunflower seeds.

Some schools and SFAs we visited had taken actions to make their cafeterias more attractive to students. In several districts, schools tried to recreate, to some degree, the experience students find in popular restaurants and food courts. They configured school cafeterias with multiple serving lines, each with a different theme. For example, at a high school in Kentucky, one line served the standard school lunch entrees, while other lines were for salads and submarine sandwiches. A high school in Michigan added an area that sold just soup, salad, and deli-sandwiches. Several schools made cafeterias more inviting places to eat by incorporating colorful décor. For example, the cafeteria manager at a Texas high school installed red and white awnings above the doorways into the food area to make it look more like a café. One SFA in Rhode Island had decorated school cafeterias with specific themes. For example one junior high school cafeteria had a nautical décor, and a high school cafeteria had murals of maps and flags representing each of the countries of origin represented in the student body.

In several districts, SFAs used the monthly school menu to reach out beyond the cafeteria and focus attention on nutrition. Some menus contained items of nutritional interest or facts such as the calories and fat content in the various school foods. School food service managers said that since the students often took the menus home, it helped them reach parents and guardians with their message of healthy eating choices. In a related example, a Texas school district reported putting a new nutrition article on their website every month.

Educational Efforts

Many schools had identified opportunities to instruct students about nutrition both in the classroom and in other school activities. One SFA in California had a nutritionist visit fourth grade classrooms to explain the food pyramid and the importance of fruits and vegetables in their diet. As part of her presentation, she gave the students samples of different fruits. At a Rhode Island middle school, we watched a family and consumer

[20]USDA cautions that schools must take other issues into account when considering adding a salad bar including food safety practices associated with preparing and storing the salad bar items as well as proper student use.

science class prepare a raspberry ice yogurt as a healthful alternative to the traditional milk shake. The teacher said she used USDA nutrition education materials as well as those from food industry associations. She also had class visits to farms, a farmers' market, and restaurant kitchens. An SFA in California reported a noticeable change in what students chose and ate after providing students with more information about fruits and vegetables. Its schools placed nutrition-themed posters in hallways and the cafeterias and started teaching nutrition in the classroom. With the help of a Team Nutrition grant, a Michigan elementary school integrated nutrition education into existing reading and math curriculum. The project helped the school overcome the difficulty of finding time to teach nutrition, a subject with less priority to teachers because it is not included in state academic standards assessments. The school was also using the School Health Index for Physical Activity and Healthy Eating, a self-assessment and planning guide developed by CDC, to assess its nutrition and physical activity policies and create a healthy school environment.

School Policies, Practices, and Community Activities

Some schools and districts had adopted new policies or practices to restrict or replace food of limited nutritional value sold in schools. These policies and practices varied widely in their scope from those limited to a single classroom to school and districtwide efforts. For example, at the classroom level, in several elementary schools we visited, teachers said that they no longer used candy as a reward in the classroom as a means of supporting the healthy eating message. Instead, they substituted healthful snacks, stickers, or extra minutes for recess as incentives. One teacher in a Rhode Island elementary school rewarded her students with pennies for demonstrating good health habits. Students could later exchange the pennies for healthful snacks.

At the school level, some schools that sold competitive foods through vending machines or in a cafeteria a la carte line, regulated the type of items that could be sold. For example, at one Rhode Island elementary school, at the principal's request, the food service manager replaced school snack bar items, such as candy bars and potato chips, with healthier choices, such as rice cereal cookies and raisins. According to the food service manager, students accepted the new selections with minimal controversy, sales rebounded, and other elementary schools in the district adopted the same changes. A Texas school district had a similar experience when it revised its vending machine policy to include only healthier items. An elementary school principal in California said her school made more money selling healthier snacks than the limited nutritional value items previously sold in the school. One district that we

visited in Michigan allows middle school students to make snack purchases only after they have eaten their regular lunch.

At the district level, one large urban SFA that we visited was beginning to implement a broad districtwide food policy that set multiple goals focusing on improving the nutritional quality of school food, serving enjoyable foods from diverse cultures, and improving the quality of food service jobs. The policy also established a Nutrition Advisory Board that includes teachers, principals, students, parents, and community representatives in addition to district administration and SFA staff. Several districts that we visited had established policies that prohibited candy and soft drink machines at elementary schools and some regulated a la carte sales in their secondary schools. A number of districts focused on increasing the offerings of healthier items such as milk, water, and juices.

In addition to efforts in the cafeteria, educational efforts, and changes in policies and practices to encourage healthy eating, several schools that we visited had taken steps to establish a broader more systematic healthy school environment that includes both healthy eating and physical activity. Two elementary schools in Texas—as part of a university and state health department study funded by CDC—were working closely with their SFAs to increase low-fat choices in the cafeteria, were providing more nutrition education to students, and were increasing students' physical activity through physical education and other activities. These schools had established a school committee of faculty, staff, students, and parents to plan many of the school activities. Also, one elementary school that we visited in Rhode Island had established a comprehensive school health initiative that included both nutrition and physical activity efforts. The school nurse taught health and was working on integrating nutrition education into classroom lessons. She recently taught a lesson on comparing the nutritional information on cereal boxes. The school had established a healthy schools committee which meets twice a month and was using a $1,000 grant to set up a walking program. Last year, the school held a heart health fair for students and parents that included healthful snacks and group exercise.

Several school districts had expanded their nutrition education efforts beyond the school by collaborating not only with families, but also with community organizations and businesses to raise healthy nutrition and lifestyle awareness. Several districts held health fairs for families of students in which nutrition was a central theme. For example, a fair at one Rhode Island school had restaurant chefs speak to parents, demonstrate healthful food preparation, and provide samples of healthful snacks. Three

schools in another Rhode Island district also had a health fair that had the sponsorship of organizations such as the local police department. A health insurance company sponsored a pilot project at two middle schools in Grand Rapids, Michigan, in the spring of 2001. The "Trek Around the World" encouraged students to increase their physical activity and eat more fresh fruits and vegetables.

Many SFA officials, principals, and other officials that we contacted said leadership makes a difference in the success of nutrition and healthy eating efforts. They emphasized the importance of local leadership in implementing and sustaining a successful child nutrition and health program in the school and community. For example, one elementary school principal made a point of frequently eating fresh fruit in front of her students. A middle school administrator roamed the cafeteria at lunchtime encouraging students to eat healthful foods. In some schools we visited, other people such as a teacher, a physical education teacher, the school nurse, or the local parent-teacher association president had taken a leadership role in implementing and sustaining efforts to encourage good nutrition and create a healthy school environment.

State Efforts to Support School Activities

State efforts to support local leaders in improving school meal nutrition and encouraging healthy eating among students in the states we visited included a variety of approaches. For example, in Rhode Island, a private nonprofit organization facilitated Team Nutrition efforts, providing a focal point for assistance and outreach to schools and districts. In Michigan, the Michigan State University Extension and the Michigan Department of Education worked as a team to promote Team Nutrition. The extension service provided materials, information, and assistance to schools and SFAs. The state department of education and the extension service have a history of collaboration to address a variety of state issues, according to state officials. In Kentucky, Rhode Island, and Texas, state departments of education and health have also established ways to collaborate to address student health issues, including nutrition. In California, the state passed legislation that will take effect in 2004 that establishes restrictions on beverages sold in elementary and middle schools and places nutritional standards on the type of foods that can be sold—including in vending machines. State education department officials in California report that they are working with school districts to promote districtwide healthful food policies. School and SFA officials acknowledged that state assistance and leadership was valuable in implementing local activities. However, USDA officials report that not all states have established a state focal point for leadership or have begun collaboration among state agencies to address nutrition education.

Federal Efforts to Support School Activities

A growing support structure for these local efforts is in place at the federal level. According to USDA officials, the agency will continue and expand its nutrition and healthy eating efforts through the Team Nutrition initiative. According to officials from USDA and CDC, they collaborate on a number of health efforts to avoid duplication and ensure a single message is communicated. Additionally, USDA, CDC, and the Department of Education partnered with a number of national organizations to sponsor a Healthy Schools Summit in October 2002. The conference emphasized collaboration to foster change at the state, district, and local levels and launched the establishment of Action for Healthy Kids teams in 50 states and the District of Columbia. Further, in June 2002, the Secretaries of the Departments of Agriculture, Health and Human Services, and Education signed a memorandum of understanding to strengthen and promote the education and health of school-age children. The memorandum specifies the types of activities the departments will conduct over 5 years. For example, USDA will develop and distribute grade-specific materials to schools to use in the classroom, and Health and Human Services will provide technical assistance to help state education agencies support schools in selecting or developing effective physical education and nutrition education curricula. Additionally, the Department of Education will encourage schools to participate in Team Nutrition and encourage state boards of education to develop policies that will provide healthy school environments. However, the memorandum does not identify specific strategies to address how schools will find time to use the materials and technical assistance provided by federal agencies given the time requirements for meeting state academic standards—for example, by facilitating the integration of nutrition education into the existing curricula and activities and by focusing on student behavior. Furthermore, the memorandum does not specifically address the importance of leadership and agency collaborations at the state level in addressing nutrition and healthy eating in schools.

Conclusions

With an urgent health problem threatening the well being of the country's youth, it is important that actions be taken to reverse current trends toward obesity and related physical problems. While schools and the school lunch program cannot be expected to solve these problems alone, they are well positioned to positively influence what children eat and what they know about the importance of good nutrition. However, many schools are sending a mixed message when they provide nutritious meals and encourage healthy choices, but at the same time rely on the sales of foods of limited nutritious value to fund school and student activities. Despite the difficulties of making significant changes in the foods sold at

schools, a number of schools and districts have shown that healthful food policies and practices can be put in place. These policies not only help ensure that the food children eat at school is healthful; they also provide a positive model within the school and an opportunity to learn about healthy eating outside the classroom. Many schools, however, continue to face challenges to providing nutrition education in the classroom, in part, because of the need to focus on subject matter covered to meet state academic standards.

Federal efforts to promote and support local initiatives, including increasing collaboration among agencies, show promise. The recent memorandum of understanding signed by USDA, the Department of Health and Human Services, and the Department of Education underscores the importance of agencies working together and contributing what they do best. This federal partnership could be fruitful in increasing the emphasis on, and resources available for, encouraging healthy eating and the integration of nutrition education into schools' existing curriculum in ways that would meet state academic standards requirements while advancing students' awareness of the importance of healthy eating.

The state role in promoting nutrition education—both in the classroom and beyond—is also seen as an important part of the nutrition and healthy eating equation. Efforts in some states are promising. However, not all states appear to have established the focused and coordinated effort among appropriate state agencies that could facilitate active partnering with the federal agencies that provide resources and assistance.

Providing healthful food and encouraging healthy eating among students is a complex undertaking and schools differ in their needs and capabilities so that no single program can be appropriate for all. Moreover, healthy eating is only one of the changes needed to address the growing overweight and health problems among our nation's youth. Ultimately, a more comprehensive program that addresses students' entire environment, and one that provides multiple exposures to nutritious food and information on healthy eating—as well as promoting appropriate physical activity—appears to offer the most hope of success. The Surgeon General's office has emphasized the importance of individuals and groups, across all settings, working in concert to educate people about health issues related to overweight and obesity and to promote balancing healthy eating with regular physical activity. A number of models have already been developed for schools to use in that endeavor, including USDA's Changing the Scene and East Smart-Play Hard and CDC's School Health Index. However, nationwide progress could be facilitated by enhanced and continuing

collaboration among officials and organizations at the federal, state, and local level to inform, promote, and help sustain efforts.

Recommendations for Executive Action

We recommend that the Secretaries of Agriculture, Health and Human Services, and Education use their recently signed memorandum of understanding as a vehicle to

- identify specific strategies and develop materials to help schools promote nutrition education while still meeting the requirements of state academic standards and
- encourage states to identify a focal point in each state to promote collaborative efforts that would further develop nutrition education activities for the schools.

Agency Comments

We requested comments on a draft of this report from the Secretary of Agriculture or her designee. On April 11, 2003, officials from USDA's Food and Nutrition Service, Child Nutrition Division, provided us with the following oral comments on the draft. The officials said that they were in general agreement with the findings and recommendations as presented in the report. However, they said that targeted nutrition education training funds, which were provided to states in the past, are no longer available, and they believe that, without additional funding, states are unlikely to implement our recommendation that each state identify a focal point to promote collaborative efforts to develop nutrition education activities for schools. We recognize that states are currently facing budget shortfalls and may find it difficult to create new staff positions at this time. However, we believe that states, at a minimum, can identify a focal point from among existing positions to promote a focused and coordinated effort among appropriate state agencies.

The officials also noted that they believe their major school nutrition initiatives—which are Team Nutrition, Changing the Scene, and Eat Smart-Play Hard—all play an important role in encouraging schools to serve nutritious food and in encouraging children to eat well. We agree that such initiatives can play an important role in improving the school nutrition environment in schools where they are implemented; however, not all schools participate in the initiatives. Our recommendations focus on the need for various federal and state agencies to work together as a next step to help focus resources and activities on nutrition education and other efforts to encourage children to eat healthy foods. Regarding this need for collaboration, Food and Nutrition Service officials said that they would like to be more active in their support for, and collaboration with, CDC.

However, they believe USDA is not always in a position to support CDC as much as they would like and would need additional resources to do so. In our review, we did not analyze funding levels of the different agencies. Finally, in addition to these observations, USDA provided technical comments that we have incorporated as appropriate.

The Department of Health and Human Services provided written comments on a draft of this report. (See app. I.) Health and Human Services generally agreed with our findings and recommendations and provided information on the Steps to a Healthier US initiative. It also provided technical comments that we have incorporated as appropriate. Along with the technical comments, the department provided a table summarizing the strategies for improving school nutrition that were presented in the report. We have included the table in appendix I.

The Department of Education also provided written comments on a draft of this report. (See app. II.) Education said that the report provides a review of the many issues facing schools in their efforts to meet USDA nutrition requirements and promote healthy eating among students and they also provided additional information on department initiatives that support student health and nutrition. However, Education expressed concern that the information we present appears to imply that accountability provisions in the No Child Left Behind Act may contribute to compromising a healthy eating environment in schools, and it raised questions about the support for our finding that school officials have difficulty finding the time to incorporate nutrition education into every day lessons because of pressures to meet state academic standards. Our findings are based on the views expressed by school and SFA officials we interviewed, and we believe we have fairly reflected the views of those officials. We believe that nutrition education and other components of a healthy eating environment can and should be compatible with, and complementary to, schools' efforts to meet the requirements of state academic standards. It is for this reason that we have recommended that federal agencies partner and work with states to help schools find ways to promote nutrition education and healthy eating among students.

Education suggested that we acknowledge other provisions of the No Child Left Behind Act that can support nutrition and also suggested that we include more examples of physical activity programs in our report. It specifically noted the Carol M. White program, which includes elements that address both physical activity and healthy eating. We recognize that there may be a number of programs that have the potential to contribute to nutrition and healthy eating efforts, and we agree that physical activity

programs could be an important component of a healthy school environment. However, the scope of our study did not include a comprehensive review of initiatives that support nutrition or physical activity. Also, the department recommended that we include the Action For Healthy Kids Initiative with our examples of community collaborations to promote children's nutrition as well as physical activity. We have done so.

Education also provided us with technical comments, which we have incorporated as appropriate.

We will send copies of this report to the Secretaries of Agriculture, Health and Human Services, and Education, appropriate congressional committees, and other interested parties. In addition, the report will be available at no charge on GAO's Web site at http://www.gao.gov.

If you or your staff have any questions or wish to discuss this material, please call me at (415) 904-2272 or Kay E. Brown at (202) 512-3674.

David D. Bellis
Director, Education, Workforce,
and Income Security Issues

Appendix I: Comments from the Department of Health and Human Services

DEPARTMENT OF HEALTH & HUMAN SERVICES

Office of Inspector General

Washington, D.C. 20201

APR 15 2003

Mr. David D. Bellis
Acting Director, Education, Workforce
and Income Security Issues
United States General
Accounting Office
Washington, D.C. 20548

Dear Mr. Bellis:

Enclosed are the department's comments on your draft report entitled, "School Lunch Program: Efforts Needed to Improve Nutrition and Encourage Healthy Eating." The comments represent the tentative position of the department and are subject to reevaluation when the final version of this report is received.

The department provided several technical comments directly to your staff.

The department appreciates the opportunity to comment on this draft report before its publication.

Sincerely,

Dennis J. Duquette
Acting Principal Deputy Inspector General

Enclosure

The Office of Inspector General (OIG) is transmitting the department's response to this draft report in our capacity as the department's designated focal point and coordinator for General Accounting Office reports. The OIG has not conducted an independent assessment of these comments and therefore expresses no opinion on them.

Comments of the Department of Health and Human Services on the General Accounting Office's Draft Report, "School Lunch Program: Efforts Needed to Improve Nutrition and Encourage Healthy Eating" (GAO-03-506)

General Comments

The Department of Health and Human Services (department) appreciates the opportunity to review and comment on the draft report of the General Accounting Office (GAO) entitled *School Lunch Program: Efforts Needed to Improve Nutrition and Encourage Healthy Eating.* The department commends GAO for this report which focuses on concerns regarding recent trends in children's health and eating habits. Obesity, physical activity, and diabetes are among the department's priorities.

In fact, the department has many programs underway to help foster a healthful school nutrition environment. The recent memorandum of understanding between the department and the U.S. Departments of Agriculture and Education, "Healthier Children and Youths," will afford many opportunities to coordinate efforts to promote healthy eating and physical activity behaviors among the nation's school-aged children and youths. Together, the departments are actively promoting awareness among school officials of the importance of a school environment which supports physical activity and eating a nutritious diet so that children and youth may stay healthy and be ready to learn.

In addition, Health and Human Services Secretary Tommy Thompson's Steps to a HealthierUS (Steps) initiative will advance President George W. Bush's HealthierUS goal of helping Americans of all ages to live longer, better, and healthier lives. This initiative specifically targets diabetes, obesity, asthma, cancer, cardiovascular disease as well as risk factors such as poor nutrition and physical inactivity, tobacco use, and youth risk behaviors. Building on a growing body of prevention research which shows that small, simple steps can often prevent or control these health burdens, Steps will promote programs to motivate and support responsible health choices, support community initiatives to promote and enable healthy choices, encourage healthcare and insurance systems which target reduction of risk factors and complications of chronic disease, and encourage cooperation among policy makers to invest in health promotion.

Also included in our technical comments is a draft table which provides a clear summary of ideas that can be used to improve school nutrition. This draft table would serve as a complement to the narrative.

Recommendations for Executive Action

"We recommend that the Secretaries of Agriculture, Health and Human Services, and Education use their recently signed memorandum of understanding as a vehicle to

- identify specific strategies and develop materials to help schools promote nutrition education while still meeting the demands of state standards based assessments, and

1

- direct states to identify a focal point in each state to promote collaborative efforts that would further develop nutrition education activities for the schools."

Department Response

In the second bullet, the department would like the word "direct" changed to the word "encourage." To "direct states to identify a focal point in each state…" may be perceived by some as an unfunded federal mandate. Under the terms of the current memorandum of understanding, as stated in the report, the department will provide technical assistance to state education agencies to help schools select or develop effective physical education and nutrition education curricula.

2

Strategies for Improving School Nutrition

Challenge	Strategy employed
Improve nutritional quality of school meals	▪ Bake rather than fry ▪ Reduce salt ▪ Use low-fat ingredients ▪ Expand number and variety of healthier foods ▪ Taste test proposed menu items
Promote more nutritious eating choices	▪ Use packaging to increase the appeal of food ▪ Install a "garden bar" so students can self-serve their vegetables ▪ Decrease price of healthier foods ▪ Dedicate serving lines to specific healthier foods ▪ Increase the aesthetic appeal of cafeterias ▪ Include nutrition information on school menus and school websites
Provide education	▪ Involve dietitians in nutrition education ▪ Complement nutrition education with actual tasting of foods ▪ Include preparation of healthful foods in nutrition education ▪ Take students on field trips to farms, farmers' markets, restaurant kitchens ▪ Complement classroom nutrition education with nutrition information elsewhere in the school (e.g., posters in hallways) ▪ Integrate nutrition into existing curriculum (e.g., reading and math) ▪ Use existing resources, such as the School Health Index to guide change
Develop policies, practices, and community outreach	▪ Adopt policies or practices (comprehensive or specific) that restrict access to less nutritious items and/or increase access to healthier foods ▪ Use rewards other than food to support positive classroom behavior ▪ Regulate the sale of competitive food items ▪ Establish a nutrition advisory board to implement nutrition policies ▪ Implement comprehensive change that includes nutrition and physical activity ▪ Hold health fairs for families ▪ Have school personnel serve as positive role models ▪ Support school nutrition "champions"
Action by states	▪ Partner with compatible organizations ▪ Provide resources ▪ Provide assistance and leadership on legislation that supports school nutrition
Action by federal agencies	▪ Provide support while avoiding duplication

1

Appendix II: Comments from the Department of Education

UNITED STATES DEPARTMENT OF EDUCATION

THE UNDER SECRETARY

April 15, 2003

Mr. David D. Bellis
Acting Director
Education, Workforce, and Income Security Issues
General Accounting Office
Washington, DC 20548

Dear Mr. Bellis:

Thank you for the opportunity to review and comment on the draft report, "School Lunch Program: Efforts Needed to Improve Nutrition and Encourage Healthy Eating." The report provides a review of the many issues facing schools in their efforts to meet USDA nutrition requirements and promote healthy eating among students. We were particularly pleased to see the auditors' review of some of the challenges that schools face trying to serve nutritious foods and teach students to eat healthy foods, as well as the creative methods some schools are using to overcome those challenges. We have a number of comments and suggestions below for improving the report and making it more accurate and complete. We also have enclosed some more specific and technical comments.

We strongly recommend the deletion of the unsupported statement on pages 15 and 16 (and especially footnote 17) that appears to imply that the accountability provisions in the No Child Left Behind Act (NCLB) may contribute to "compromising" a healthy eating environment in the schools. On the contrary, as noted below, NCLB has many provisions that promote a safe and healthy environment for students, conducive to learning. Furthermore, the accountability provisions are designed to support learning and parental choice and should in no way compromise a healthy eating environment in the schools. While we have no problems with the recommendation on helping school districts identify strategies and develop materials to help schools promote nutrition education while still meeting the demands of state academic standards, we also have some concerns about related statements on pages 5, 23, 24, and 25 on related issues. In the enclosure, we suggest some revisions that make these statements more appropriate.

On pages 21 and 22, the auditors include examples of nutrition and physical activity collaborations with community organizations. The Action for Healthy Kids (AFHK) Initiative, which came out of the Healthy Schools Summit held last fall in Washington, D.C., has state nutrition and physical activity teams that are examples of the state collaborations the report recommends. Some of these state teams are working directly with schools in their areas on nutrition and physical activity issues. Alicia Moag-Stahlberg, M.S., R.D., L.D., is the Executive Director, and the organization's Internet address is www.ActionForHealthyKids.org. All five of the states your auditors visited

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for this report have AFHK state teams. We recommend that you expand your examples of community organization collaborations to include the AFHK state teams.

On page 23 of the report, the auditors discuss Federal efforts to support school activities in health and nutrition. It would be helpful if the report also acknowledged the provisions in NCLB that can be used to support nutrition, physical education, and health-related services. For example, provisions in Title I (section 1115(e)(2)) and the Carol M. White Physical Education program under Title V (Part D, Subpart 10) of the Elementary and Secondary Education Act (ESEA), as amended by NCLB (a competition for new awards was announced on April 1, 2003) should be mentioned as supportive of improved nutrition and health. Additionally, Title V of ESEA could support nutrition education and other related program activities, and some funds from after-school programs under the 21st Century Community Learning Centers can be used for nutrition activities (including after-school snacks to provide nourishment so that students can participate well in learning activities).

Additionally, the President has requested $10 million in fiscal year 2004 for a new physical education initiative that would help build capacity nationally for long-term improvements in physical education. Grants to school districts would support the demonstration of high-quality, research-based approaches for incorporating regular physical activity into students' everyday lives and promoting lifelong personal fitness activities and healthy habits tied to state standards in physical education. Each grant would include a rigorous evaluation component designed to assess outcomes, including student success in increasing knowledge of, and forming positive attitudes about, physical fitness, as well as attaining increased levels of fitness. Results of this demonstration activity would be widely disseminated to state and local educational agencies and community-based organizations that work with youth. We hope that this initiative will be included in your revised discussion of physical activity programs.

Although the report does include some examples of physical activity programs, we hope this discussion will be expanded as noted above. In addition to the health and wellness benefits of physical activity, preliminary research indicates a direct link between physical activity and improved academic performance. Studies have found that participation in physical activity increases adolescents' self-esteem, as well as physical and mental health. Physically active students are also less likely to be regular or heavy smokers and to use drugs or alcohol; they are more likely to stay in school and have good conduct and high academic achievement.

In addition to our interest in the link between nutrition and physical activity programs, we are also interested in the research done with students in each of the states that GAO visited. The draft report includes very few examples of student comments or feedback, especially about the success stories from individual states. Therefore, we recommend that you revise your discussion to incorporate more of this valuable student information.

We appreciate the mention of the memorandum of understanding (MOU) among the Departments of Agriculture, Health and Human Services, and Education. Since the

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creation of this MOU, we have worked aggressively to fulfill our responsibilities to promote healthy eating and physical activity. We have coordinated with USDA and HHS to develop a better understanding of the health-related programs of each department.

Again, thank you for providing a copy of this draft report for our review. The Department of Education has an important interest in ensuring that children are healthy and ready to learn. We appreciate the opportunity to comment and would be glad to assist in the redrafting or reviewing of a revised draft response. Please let me know if you have any questions about our comments.

Sincerely,

Eugene W. Hickok

Eugene W. Hickok

Enclosure

Appendix III: GAO Contacts and Staff Acknowledgments

GAO Contacts

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Staff Acknowledgments

In addition to the individuals named above, Robert B. Miller, Dianne L. Whitman-Miner, Shana B. Wallace, Tamara L. Fucile, Daniel A. Schwimer, Karyn I. Angulo, and Stanley G. Stenersen made key contributions to this report.

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