Rural Schools: Challenges and Opportunities for School Meal Programs

Healthy Eating Research

Research Review, November 2021

Introduction

People living in rural communities often face multiple barriers to consuming healthier diets, including higher costs and more limited access to healthy foods.[1-5] This likely contributes to the increased risk of obesity observed among children and adolescents in rural regions when compared to their urban and suburban peers.[6-8] In addition, food insecurity is substantially higher in rural areas (12.1%) compared with suburban areas and smaller cities (8.3%), although the rates were similar to those in large cities (12.4%). These disparities have likely increased as a result of the COVID-19 pandemic.[9,10] Addressing these disparities is essential, as poor nutrition tends to track into adulthood and is associated with increased risk for obesity and other chronic diseases.[11,12]

Table 1. Definition of Rural, Suburban, and Urban Schools[1]

Locale		Definition
City	Large	Territory inside an urbanized area and inside a principal city with population of 250,000 or more
	Midsize	Territory inside an urbanized area and inside a principal city with population less than 250,000 and greater than or equal to 100,000
	Small	Territory inside an urbanized area and inside a principal city with population less than 100,000
Suburb	Large	Territory outside a principal city and inside an urbanized area with population of 250,000 or more
	Midsize	Territory outside a principal city and inside an urbanized area with population less than 250,000 and greater than or equal to 100,000
	Small	Territory outside a principal city and inside an urbanized area with population less than 100,000
Town*	Fringe	Territory inside an urban cluster that is less than or equal to 10 miles from an urbanized area
	Distant	Territory inside an urban cluster that is more than 10 miles and less than or equal to 35 miles from an urbanized area
	Remote	Territory inside an urban cluster that is more than 35 miles from an urbanized area
Rural	Fringe	Census-defined rural territory that is less than or equal to 5 miles from an urbanized area, as well as rural territory that is less than or equal to 2.5 miles from an urban cluster
	Distant	Census-defined rural territory that is more than 5 miles but less than or equal to 25 miles from an urbanized area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an urban cluster
	Remote	Census-defined rural territory that is more than 25 miles from an urbanized area and is also more than 10 miles from an urban cluster

[1] Based on National Center for Education Statistics[44]
*Townships are often considered to be similar to rural schools.

Schools play an essential role in public health efforts to address diet-related disparities. In fact, children often consume up to half their daily energy intake while at school.[13] Schools can promote healthier diets by providing free or reduced-price healthy meals through the National School Lunch Program (NSLP) and the School Breakfast Program (SBP). The nutrition standards for both of these programs were strengthened over a decade ago, to align with the concurrent Dietary Guidelines for Americans after the passage of the Healthy, Hunger-Free Kids Act of 2010 (HHFKA).[14]

Rural schools represent about a third (34.9%) of those participating in the NSLP and nationally representative research has found that on average, school meal participation rates are higher in rural schools compared with those in urban areas.[15-17] However, at the same time, both students and parents in rural regions report lower satisfaction with school meals.[17,18] Additionally, differences in the nutritional quality of school meals by locale have been documented, with meals in rural schools less likely to align with national nutrition standards.[19] These differences can, in part, be explained by the greater challenges in meal operations faced by school nutrition professionals in rural areas of the United States.[15]

To develop solutions to these challenges, the aims of this research review are to:

1. Summarize the differences in school meal operational characteristics among rural, suburban, and urban school districts;
2. Discuss the specific challenges that impact the operation of rural school meal programs; and
3. Articulate opportunities for innovation in school meal programs in rural areas.

Operational Characteristics*

Child nutrition agencies administer the NSLP and SBP at the state level and school food authorities (SFAs)—which are usually food service departments within school districts—manage these school nutrition programs at the local level. SFAs can determine how to administer these meal programs (in alignment with the state and federal guidelines). These operational decisions include food procurement, equipment purchases, food preparation and food service, local wellness policy stakeholder engagement, and school nutrition promotion.

Food Procurement Strategies

SFAs use a variety of approaches to procure school meals in a cost-efficient manner. Rural, suburban, and urban SFAs differ in their use of procurement strategies (Figure 1a).

- **Food Purchasing Cooperatives.** Multiple SFAs can join together to create food purchasing cooperatives. This enables them to solicit bids and make purchases as a group, which can help the SFAs receive more competitive prices than when operating alone. Cooperatives can also be used to jointly hire administrative support and/or staff with specialized technical expertise, such as registered dietitian nutritionists, who can assist with staff culinary trainings, procurement, and grant writing, as well as student and community nutrition education. Rural SFAs are more likely to use food purchasing cooperatives than suburban and urban SFAs (which is likely because larger SFAs are already able to achieve economies of scale).[20,21] Despite the benefits, roughly 40% of rural schools are not currently using this strategy. Possible reasons may be a lack of awareness of the potential to form cooperatives; concerns about the initial effort required to establish a cooperative; or concerns about decreased autonomy in food purchasing decisions.

- **Department of Defense (DoD) Fresh Produce Program.** SFAs can use USDA entitlement dollars to buy a variety of fresh fruits and vegetables, including locally grown options. This program can be particularly helpful for rural school districts that do not have regular access to a produce vendor. Currently, less than half of rural SFAs participate in this program. One barrier may be the frequency in which orders can be delivered, which can limit orders of produce with a shorter shelf life.

- **Utilization of Existing Tools for Selecting and Purchasing Healthier Foods.** There are online tools to assist SFAs in finding recipes, planning healty menus, and procuring healthier foods, such as those available through the Alliance for a Healthier Generation. However, rural SFAs use these tools less frequently than SFAs in suburban and urban areas, which may be partially due to lack of awareness or time constraints.

*Based on the School Nutrition and Meal Cost Study (2014-15 School Year)[15] unless otherwise noted.

- **School Gardens.** School gardens can be used to integrate fresh fruits and vegetables into school meals and provide educational and physical activity opportunities for students.[22] Although rural schools likely have access to the land needed for a garden, fewer rural schools have gardens compared with schools in other areas. This may be in part due to limited staffing or the fact that students in rural areas often have access to gardening fundamentals outside of school.[23,24]

- **Procurement of Locally Grown or Produced Foods.** When SFAs buy local (e.g., farm-to-school programs), they can often purchase reasonably priced foods and support local economies. Currently, rural SFAs purchase locally grown and produced foods less frequently than SFAs in other areas. This may be due to lower levels of interest, higher prices (locally grown foods can sometimes be more expensive than USDA commodity foods), and limited capacity to procure local foods.[25]

Figure 1a. Operational Characteristics by Rural, Suburban, and Urban School Food Authorities (SFA)*

*Based on the School Nutrition and Meal Cost Study (2014-15 School Year)[15] unless otherwise noted.

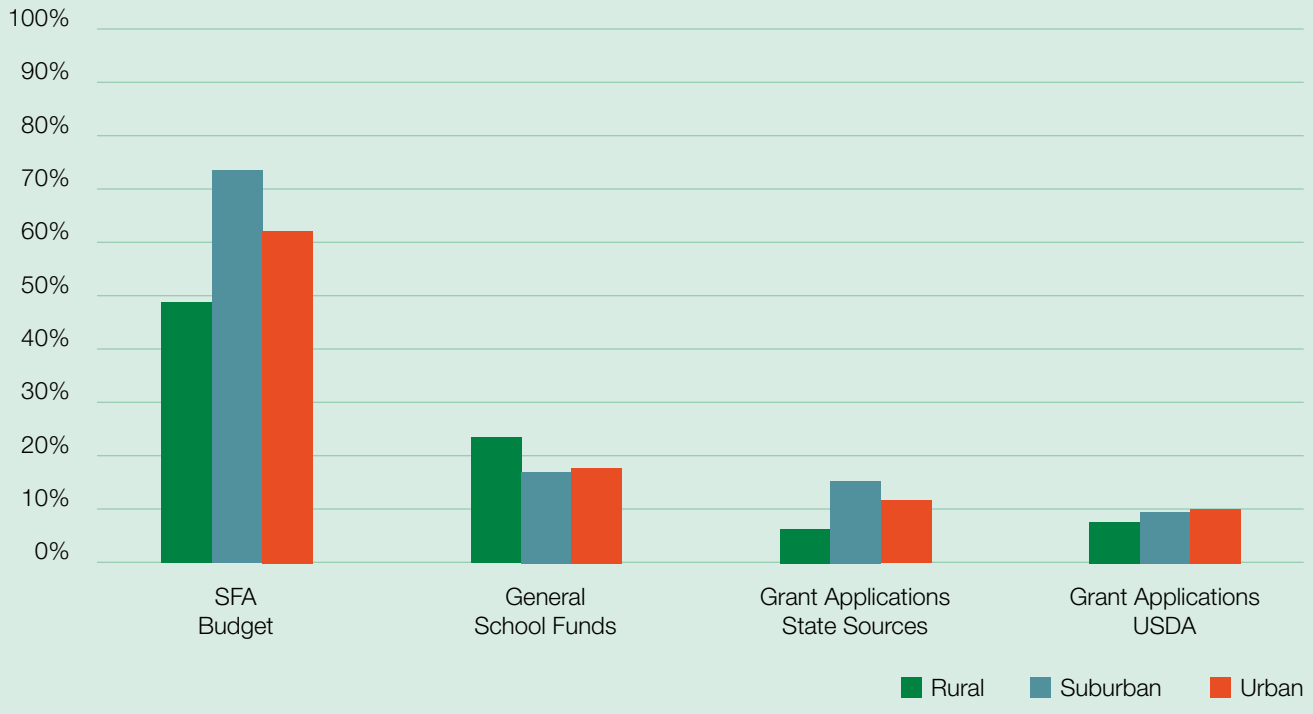
Equipment

Kitchen and cafeteria equipment can support meal programs by: (1) saving time in preparation; (2) facilitating appropriate portioning of meal components; (3) improving service efficiency during mealtimes; and (4) increasing storage capacity. Items commonly purchased by SFAs include food preparation equipment (e.g., food processors, mixers, and slicers); serving portion utensils; salad bar carts; steam table pans; and mobile milk coolers. There are differences in funding sources for equipment and repairs between rural, suburban, and urban SFAs (Figure 1b). This may partially explain why fewer SFAs purchased equipment to help implement the healthier school meal standards under the HHFKA.[21,26]

- **Internal Funding Sources for Equipment.** SFAs typically rely on a combination of funds from their own budget and the general school budget to pay for equipment-related costs. Rural school districts often rely more heavily on general school funds. Consequently, SFAs may have less autonomy and less money for purchases and repairs. In contrast, suburban and urban SFAs tend to have larger budgets compared with SFAs in rural areas.

- **External Funding Sources for Equipment.** Both state and USDA grant funding mechanisms exist to pay for equipment purchases. On average, rural SFAs have lower rates of applying for these grants compared to SFAs in suburban and urban regions. This may be due to lack of awareness regarding the funding opportunities as well as limited staffing, thus reducing capacity for seeking grants by rural schools.

Figure 1b. Differences in Sources of Funding for Food Service Equipment by Urbanicity



Local Wellness Policies

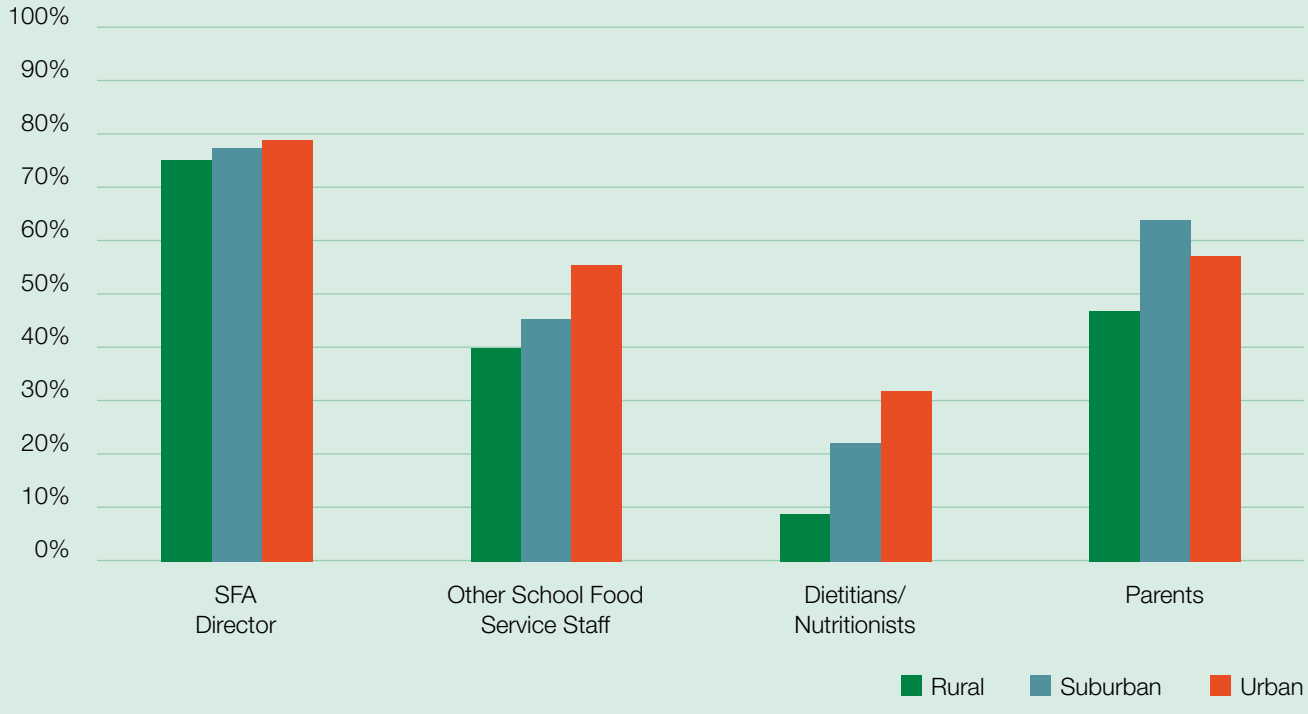
Wellness policies are board-approved, written policies that guide school district efforts to support nutrition and physical activity in schools. These policies can play an important role in creating a school environment that promotes children's health, and the HHFKA further strengthened the federal requirements for local wellness policies. These policies are developed at the district level (often overlapping with SFAs), by a committee that is designed to include food service staff, school health professionals, parents, and other members of the school community. However, rural, suburban, and urban school districts report different levels of engagement for several of these key stakeholders (Figure 1c).

- **Food Service Staff Engagement.** Input from food service staff is essential to ensuring buy-in and compliance with school wellness polices. While SFA director participation in wellness policy development is high in all school districts, participation by other food service staff is typically lower in rural areas compared with suburban and urban areas.

- **Dietitian/Nutritionist Engagement.** Staff members with a background in nutrition can play a key role in providing guidance for wellness policies. However, districts with smaller enrollments (and therefore less funding) are less likely to be able to hire specialized staff with advanced training in nutrition. This may contribute to the lower rates of involvement by dietitians or nutritionists in wellness policy development in rural school districts compared with districts in other areas.

- **Parent Engagement.** Parents can be effective advocates for strong local wellness policies. However, many parents face barriers to getting involved, including schedule conflicts with work or child care, and challenges in getting to the school for meetings.[27] These barriers may, in part, explain the currently lower rates of parent engagement in the development and implementation of local wellness policies in rural school districts compared with districts in urban and suburban areas. This may also partially explain the lower levels of acceptance of the healthier school meals that have been observed from parents in rural regions.[18]

Figure 1c. Wellness Policy Development: Select Stakeholder Involvement by Urbanicity



School Nutrition Promotion

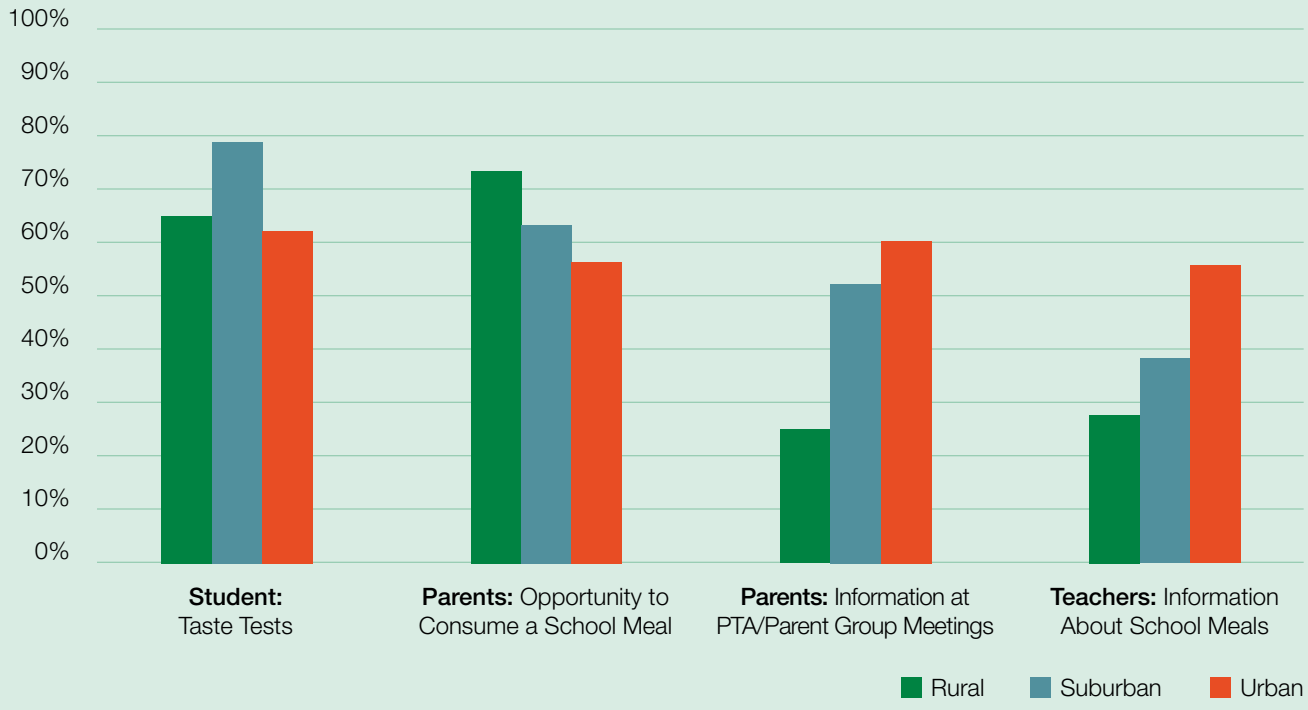
Strategies to promote school meals are important elements of many school wellness policies; however, the implementation of these strategies varies among schools within and across districts. Outreach about school meals can play a key role in obtaining buy-in from students, parents, and school staff. In turn, this has the potential to influence school meal participation and consumption; however, the reported use of these strategies varies by urbanicity (Figure 1d).

- **Student Outreach.** Student outreach activities can include taste tests; involving students in menu planning or naming menu items; and conducting nutrition education in the cafeteria setting or classroom/curriculum. Fewer rural schools report engaging in these activities compared with suburban schools, but more compared with urban schools where such activities may be challenging due to the larger number of students.

- **Parent Outreach.** Special events with families where they can try menu items can be an effective strategy to promote the school meal program and rural school districts report using this strategy more often than suburban and urban districts. In contrast, SFA staff in rural districts report that they are less likely to attend PTA or parent organization meetings to discuss school meal programs.

- **Teacher Outreach.** Engaging teachers in school meal promotion is important because they can influence students' perceptions of school meals and serve as positive role models if they also consume them. Rural school districts are less likely to report having teacher outreach initiatives to discuss school meals compared with suburban and urban districts. This may be due to the smaller food service staff capacity.

Figure 1d. Select Differences in Types of Nutrition Outreach Initiatives by Urbanicity



Challenges

Rural schools face many unique challenges when operating school meal programs. These issues faced by rural SFAs are directly related to the differences in operational characteristics observed by urbanicity.[28,29]

- **Cost of School Meals.** Rural districts may face challenges producing school meals while maintaining low costs; the average foodservice cost per reimbursable meal is higher in rural districts compared with those in urban areas.[30] There are several possible reasons for this. First, the total cost to prepare each meal served is inversely associated with the number of meals served; this can lead to higher prices per meal in smaller, rural school districts.[30] This is in part because greater economies of scale lead to lower per-meal costs, and thus rural schools are at a disadvantage due to lower food purchasing volume compared with urban districts.[30] SFAs in remote areas may also face higher shipping and delivery costs.[31] Lastly, higher meal prices may discourage meal participation among students who pay full price (i.e., those not eligible for free/reduced-priced meals), further exacerbating lower participation rates.[32] These higher costs may result in reduced profits, which can impact rural school operational characteristics, such as the ability to purchase equipment and conduct promotional events.

- **Limited Staff Size and Capacity.** Corresponding to the smaller size of rural schools, there are fewer staff working in nutrition services in each district.[33] Further, schools in rural areas may face challenges recruiting and retaining qualified staff due to lower compensation as compared with other locales.[34] A smaller, less experienced team may find it more challenging to provide nutrition-related promotional activities; develop new recipes; engage stakeholders regarding wellness policy development; implement procurement strategies such as school gardens; and apply for external grants for equipment, improved infrastructure (e.g., sufficient storage space for foods), and programming. External grants often require food service staff to prepare detailed reports on the use of funds, which may be a deterrent for schools with limited administrative capacity.

- **Socio-Cultural Food Preferences and Exposures.** Geographic and cultural influences play an important role in student food preferences, which are informed by the foods served at home. Research suggests that there may be discordance between student food preferences and experiences with foods at home and the foods served in school meals.[33] This may be especially true for fruits, vegetables, and whole grains, which are key components of school meals following the revised meal standards. While this is a challenge faced by all schools, it may be exacerbated in rural areas where families may have financial constraints and decreased access to healthier foods.

- **Student Populations Living In Sparsely Populated Areas.** In rural communities, travel time between students' homes and school can be up to two hours each way. This can result in limited time for students to participate in school breakfast programs or after-school snack programs, resulting in lower participation rates (as well as partially explaining lower parent engagement). Another consequence of long student commutes is higher transportation costs. If rural districts are spending a larger percentage of their budgets on transportation, this may result in reduced funds available for nutrition initiatives and food service equipment.[35]

Opportunities

There are several opportunities—including policy development at the federal and state levels and strategies to support implementation at the local level—to help address the challenges faced by rural SFAs. Additionally, prioritizing research conducted in rural regions can help to elucidate additional issues facing rural schools as well as evaluate implementation strategies to inform schools and policymakers.

Policy Recommendations

- **Universal Free School Meals:** State- or federal-level policies encouraging eligible schools to adopt the Community Eligibility Provision (CEP) or other provisions to provide universal free school meals* can be particularly helpful for rural school districts (utilization of the USDA CEP Resource Center may also support implementation[36]). Eliminating the complexities of traditional payment models would enable all school districts to offer free "breakfast after the bell" (i.e., breakfast in the classroom and grab and go options), which may be especially impactful in rural areas. This approach is also likely to increase participation rates and thus improve the stability of the food service program. Overall, healthy free meals for all is a key strategy to address health disparities in rural regions and improve school meal finances.

- **Child Nutrition Agencies:** These state organizations can provide resources and trainings for schools, as well as tailored assistance that addresses the unique challenges faced by rural schools. Both in-person and online training options should be made available based on learning styles, varying abilities with technology, and the limited time that staff often have for training and continuing education opportunities. Child Nutrition Agencies can also provide templates and assistance for local wellness policy development and implementation, as well as CEP technical assistance and support to encourage enrollment by eligible schools. Lastly, these agencies can support rural schools' efforts to obtain equipment by providing outreach to ensure awareness of grant opportunities and providing simplified applications for school staff with limited time and capacity for grant writing.

Kansas State Department of Education (KSDE)

Child Nutrition & Wellness (CNW) within KSDE has implemented several innovative initiatives to support rural SFAs that can be adopted by Departments of Education in other states.

- **Budget Efficiency Support.** Upon request, KSDE connects school districts that would benefit from additional school meal budgetary guidance (e.g., SFAs with food service revenues less than the cost of operating the program) with retired or experienced food service directors who visit the schools, examine school meal finances (e.g., food costs, labor hours, etc.), and provide tailored recommendations.
- **Assistance Network.** KSDE provides assistance through regional trainers who can help SFAs with onsite menu planning, equipment recommendations, advice regarding claims systems, and ideas about how to update the layout and design of school kitchens.
- **CNW Advisory Council.** This council includes representation from rural districts, as well as other types of school districts and the Child Nutrition Programs that KSDE operates. The Council meets regularly to provide input on resources needed—such as technology, professional development, and training—to enable KSDE to update their goals and resource allocation to support SFAs and other sponsors.
- **Extensive Training Opportunities.** KSDE has an extensive professional development system that provides both virtual and onsite training opportunities. Topics include administration of Child Nutrition Programs, culinary skills, food production, health and wellness, food safety, and food service management.
- **Heathier Kansas Menus.** Model production records and recipes are provided to SFAs to support healthy, cost effective, and compliant menus.
- **Weekly Town Hall Meetings.** KSDE arranges these meetings to support two-way communication between KSDE and SFAs. This enables KSDE to provide guidance as needed and also better understand the current challenges faced by SFAs.
- **Online Free and Reduced-Price Application.** KSDE is developing a free, online application tool for SFAs to process free and reduced-price applications for school meals.
- **Wellness Policy/Wellness Impact Tool.** KSDE has developed an electronic Wellness Impact Tool that SFAs complete annually, which streamlines reporting wellness policy progress and encourages SFAs to set new goals to create stronger policies.

*CEP is a provision where schools provide free meals to all students regardless of income. Schools are eligible to participate if ≥ 40% of students are directly certified as eligible for free meals due to their eligibility for other federal aid programs. Due to COVID-19, all students have been provided meals at no cost during the 2020-2021 and 2021-2022 school years.

Local-Level Recommendations

- **Procurement:** To counter higher food costs, rural SFAs can create cooperatives (also known as consortiums) and leverage joint purchasing power to procure foods at lower costs and increase access to a greater variety of foods.[31,37] Overall, cooperatives are associated with lower costs for rural SFAs, including lower administrative and labor costs.[31,38] Where possible, sourcing locally and working with local businesses, as well as increased participation in the USDA DoD Fresh Fruit and Vegetable Program, can also support cost-effective procurement of higher quality foods. Lastly, increasing the use of school gardens can expose students to new foods and provide integrated learning experiences related to academic subjects.[22] SFAs can enlist teachers to use gardens for nutrition education, thus sharing the responsibility for the garden, and maximizing its educational and nutritional contribution.

Case Example: Shared Service Model in South Dakota

Ten rural districts in South Dakota formed a successful cooperative with multiple benefits for the participating schools:

- **Increase Buying Power**, which lowered purchasing costs for all the affiliated districts.
- **Purchase Nutrition Menu Software** to assist with menu planning, meal standard compliance, cost control (i.e., pre-costing of menus), inventory control, and student approval (i.e., using tracking metrics to determine more successful meals).
- **Implement Wellness Initiatives** for community and staff, including a newsletter and wellness challenges (e.g., drinking more water, exercising 30 minutes or more, sleeping 7+ hours, eating fruits and vegetables for healthy snacks with fruits and vegetables).
- **Offer Free School Meals to All Students** with administrative support from the cooperative to assist with enrollment and compliance.
- **Hire a Registered Dietitian Nutritionist** in a cost-effective manner to support districts as an assistant director (e.g., manage menus, support nutrition education, and implement wellness initiatives).
- **Provide Training for Staff** including effective food procurement, utilization of foods ordered with simple recipes, production record management, culinary skills and cooking demos, and budget management (e.g., calculating meals per labor hour and setting prices for à la carte foods).

- **Wellness Policies:** Greater involvement in the development and implementation of wellness policies can support a healthier school food environment and increase buy-in for participation in school meals. In rural regions, scheduling remote meetings and/or meetings as part of existing community events can help improve the feasibility of attendance. The formation of school health advisory committees (an action-oriented advocacy group) can also help to address the challenges faced by schools regarding wellness policies. To increase the breadth of the wellness committee membership, SFAs and other district leaders can speak with potential members (e.g., SFA staff, teachers, and parents) about how to make the wellness committee more inclusive. There are a number of tools available to support districts in wellness policy development, including the WellSAT and resources from USDA, CDC, and Action for Healthy Kids.[39-42]

- **Participation In Free School Meal Initiatives:** Rural schools that are eligible for free school meal funding options, such as CEP, should consider enrolling to increase participation rates.[43] Providing free breakfast in the classroom can also increase school breakfast participation rates overall, and especially to meet the needs of students who travel a considerable distance to school.

- **External Partners:** School food service staff can collaborate with other partners on initiatives such as nutrition education, training opportunities for staff, school gardens, or other programming to overcome the barriers of small staff numbers and limited capacity. Potential partners are teachers, parents, nonprofit organizations, county cooperative extension agents and institutions of higher education in the region. Local colleges and universities can also provide assistance with grant writing and program implementation. In the long term, higher education institutions in rural areas can increase training opportunities for students interested in careers in school nutrition to address the labor shortages in rural communities.

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About Healthy Eating Research

Healthy Eating Research (HER) is a national program of the Robert Wood Johnson Foundation. Technical assistance and direction are provided by Duke University under the direction of Mary Story PhD, RD, program director, and Megan Lott, MPH, RDN, deputy director. HER supports research to identify, analyze, and evaluate environmental and policy strategies that can promote healthy eating among children and prevent childhood obesity. Special emphasis is given to research projects that benefit children and adolescents and their families, especially among lower-income and racial and ethnic minority population groups that are at highest risk for poor health and well-being and nutrition related health disparities. For more information, visit *www.healthyeatingresearch.org* or follow HER on Twitter at *@HEResearch*.

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For more than 45 years the Robert Wood Johnson Foundation has worked to improve health and health care. We are working alongside others to build a national Culture of Health that provides everyone in America a fair and just opportunity for health and well-being. For more information, visit *www.rwjf.org*. Follow the Foundation on Twitter at *twitter.com/rwjf* or on Facebook at *facebook.com/RobertWoodJohnsonFoundation*.

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