



LiveWell[™]
@SCHOOL
Food Initiative

LiveWell@School Food Initiative Evaluation Report

Prepared for LiveWell Colorado
September 10, 2012

LIVEWELL COLORADO

This report was prepared for LiveWell Colorado, a nonprofit organization committed to preventing and reducing obesity in Colorado by promoting healthy eating and active living. In addition to educating and inspiring people to make healthy choices, LiveWell Colorado focuses on policy, environmental and lifestyle changes that remove barriers and increase access to healthy behaviors. Working in partnership with obesity prevention initiatives across the state, LiveWell Colorado aims to provide every Coloradan with access to healthy foods and opportunities for physical activity in the places they live, work, learn and play. This evaluation report spotlights the efforts and progress LiveWell Colorado has made to reduce childhood obesity rates by helping school districts replace processed foods with student meals made from scratch and to build a statewide movement in support of a culture that makes the healthy choice the easy and preferred choice in our schools' cafeterias.

I. INTRODUCTION

In Colorado, nearly a quarter of the children are overweight or obese.ⁱ With a ranking of 23rd in the nation, Colorado's childhood obesity rate is rising at the second-fastest rate of increase in the nation, recently dropping from 3rd leanest to 23rd.ⁱⁱ

LiveWell Colorado launched the LiveWell@School Food Initiative (the "Initiative") in 2010—with funding and support from the Colorado Health Foundation—to help address Colorado's growing childhood obesity epidemic. The goal of the Initiative is to ensure all children in Colorado have access to and choose healthy food at school by 2022. Participating school districts are offered a range of services designed to increase the knowledge and capacity of kitchen staff to obtain, prepare and serve healthier food. Prioritization is given to Colorado school districts with free and reduced priced lunch rates of 40 percent and higher, although other school districts are invited to take part when space permits.

With more than 800,000 students enrolled in the state's 178 school districts, schools offer the unique opportunity to improve children's access to the nutrition necessary for their growing minds and bodies. LiveWell Colorado aims to build the capacity of schools to obtain, prepare and serve fresh, healthy and delicious student meals through a multi-faceted approach. At the writing of this report, this approach included using three critical components:

School Meal Assessment Reports to evaluate a district's current food service department operations to provide specific recommendations to transition to scratch cooking, including a thorough review of wellness policies, financial records, meal participation percentages, vendor contracts, commodity and procurement practices and every other protocol, procedure or practice related to a school district's food service operations.

Culinary Boot Camps to provide professional culinary training—with more than 20 topics ranging from menu planning to food safety—to help food service staff learn how to eliminate or greatly reduce amounts of added salt, sugars, fats and other additives that can lead to lifelong health problems.

On-site Mobile Chef services to provide ongoing training and support—through the deployment of a dedicated team of culinary experts—to help school districts plan, prepare and serve scratch-cooked student meals in their own kitchens with their current staff.

**Note: In 2012, LiveWell Colorado launched a new program model that customizes services specifically for each participating school district. As a result, all of the program services have been redesigned and renamed.*

LiveWell Colorado's Initiative is a continuation and expansion of efforts initiated in 2008 by the Children's Health Foundation (CHF). The curriculum for the LiveWell@School Food Initiative was developed in 2010 by Cook for America® (CFA), a national school food reform organization with coordination and support by Culinary Caregiver Collaborative, LLC. The initial program model was designed to focus primarily on two areas: 1) the completion of school meal assessments, and 2) food service workers' participation in the culinary boot camps.

This report captures the findings of an evaluation of the Initiative from 2010 to 2012. The evaluation assessed the impact that the Initiative has had on eight selected school districts, with a focus on:

1. Staff knowledge and attitude to obtain, prepare and serve healthy food within their school districts
2. District capacity and policies to obtain, prepare and serve healthy food to their students
3. An increase in healthy food being served to participating students

The program evaluator used a logic model to help determine how program inputs resulted in specific observed outcomes/impact. The eight school districtsⁱⁱⁱ selected for evaluation received all or most of the services described above between 2008 and 2011 and had enrollments of at least 5,000 students, with a minimum of 40 percent of these students receiving free or reduced-priced lunch. Collectively, these districts consist of 225 schools with a combined enrollment of nearly 120,000 students.

- Garfield RE-2 (spring-summer 2008)
- Roaring Fork RE-1 (spring 2009)
- Montrose RE-1J (spring 2010)
- Adams 14 (spring 2010)
- Adams-Arapahoe 28J SD (commonly known as Aurora Public Schools) (spring 2010)
- Weld County SD-6 (commonly known as Greeley 6) (fall-winter 2010)
- Colorado Springs SD-11 (winter 2011)
- Harrison SD-2 (spring 2011)

II. EVALUATION METHODS

Several data sources were used to determine the answers to these research questions (see box on right).

To address the first research question focusing on program delivery, the following data were collected and analyzed:

- The culinary boot camp program schedule and registration information for the 2011 culinary boot camps
- The chef instructor and mobile chef training schedules and participant lists
- The school meal assessment reports for the eight selected school districts

To determine the effectiveness of intern chef instructors in the culinary boot camps, the following data were collected and analyzed:

- Participant pre- and post-culinary boot camp self-assessments and participants' final program evaluations to determine both participants' satisfaction with the workshop and their self-reported changes in knowledge and skills
- Intern chef instructors' self-assessments
- Supervisory chefs' evaluations and feedback of intern chef instructors' performance

To determine the degree to which food service personnel have the knowledge, attitude and skills to obtain, prepare and serve healthy food within their school district, the following methods were used:

- Conducted interviews with food service directors
- Conducted site visits to the eight selected school districts, observed lunch production and service, spoke with staff and students
- Collected and analyzed district breakfast and lunch menus
- Collected and analyzed data from the Colorado Department of Education and from district websites

The evaluator for this project was Risa Sackman, a LiveWell Colorado consultant, who had also conducted the formative evaluations of both the culinary boot camps and the chef instructor training program. From August 2011 to February 2012, Sackman collected and analyzed several data sources to find the answers to the research questions: survey data from culinary boot camp participants; self-assessment data from chef instructors; data from interviews with food service directors; data from district menus; data from the Colorado Department of Education (CDE); and data from school district websites. Sackman also conducted site visits to the eight selected school districts listed above.

RESEARCH QUESTIONS: The following research questions served to guide this phase of the evaluation:

1. Were the programs delivered as planned to the expected number of participants as originally intended?
2. Do chef instructors, who also serve as mobile chefs, successfully support the ongoing development of food service personnel?
3. Do school food service personnel have the knowledge, attitude and skills to obtain healthy food within their school district?
4. Do school food service personnel have the knowledge, attitude and skills to prepare and serve healthy food within their school district?
5. Are school districts serving healthy, scratch-cooked foods to students?

III. EVALUATION FINDINGS

Research Question #1: Program Delivery

According to the data, all scheduled workshops were delivered on the planned dates. An additional, event not originally on the calendars was added to the program deliverables (e.g., two mobile chef workshops instead of one). The culinary boot camps were designed for 24 participants. As not all of the culinary boot camps were filled to capacity, a total of 187 participants from all parts of Colorado completed the program.

Research Question #2: Chef Instructors Ability to Support the Ongoing Development of Food Service Personnel

To determine the chef instructors' effectiveness, the evaluator looked at two things:

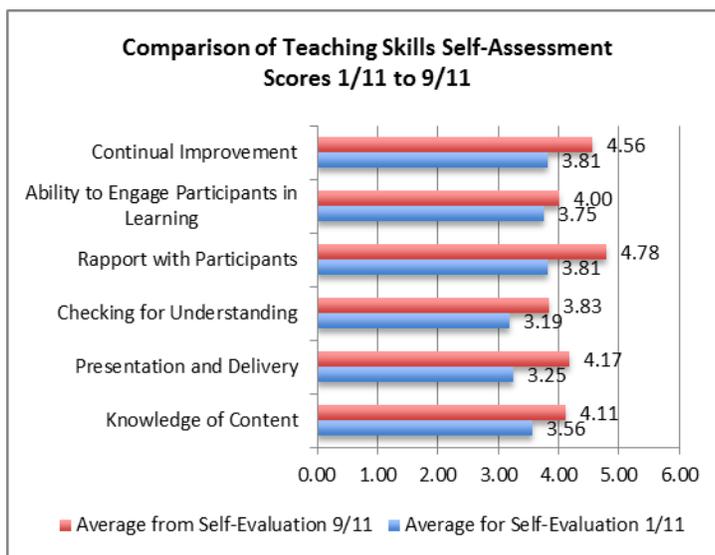
1. The chef instructors' mastery of the culinary boot camp curriculum (as measured by supervisor evaluations and self-evaluations)
2. The chef instructors' teaching effectiveness (as measured by supervisor evaluations, self-evaluations and program evaluations completed by the culinary boot camp participants).
Discussions regarding the self-evaluations and supervisor evaluations are included in this section, and participant evaluations are covered in the following section.

Measuring Instructor Growth: Analyzing and Comparing Self-Assessments—1/11 to 9/11

In both self-assessments the scale ranged from 1—Emerging Learner (this is an area of new learning), to 5—Being an Instructional Leader (Provides a purpose and context for content, inspires learning and positive change).

Content Self Assessment: When comparing the chef instructors' initial self-assessment of their knowledge of culinary boot camp content (taken at the end of the instructor training workshop in January 2011) to their second self-assessment (taken after seven of the eight culinary boot camps were completed in September 2011), it is apparent there were clear signs of the chef instructors' growing confidence in their mastery of core knowledge and skills. The largest areas of self-perceived growth were in vegetable cookery, baking, food safety and time management. While there were no areas of negative slide, the least perceived growth occurred in culinary math, procurement and menu planning, signifying these are areas in which chef instructors may need more support. Data also suggested classroom content was harder to master than kitchen content, both with respect to perceived growth and overall rating.

Teaching Skills Self-Assessment: When comparing the chef instructors' initial self-assessment of their teaching skills taken at the end of the two-week instructor training workshop (January 2011) to their second self-assessment taken after seven of the eight culinary boot camps were completed (September 2011) significant gains were seen in chef instructors' confidence around their ability to engage in good instruction. The greatest perceived growth was in the area of rapport with participants (.97 point growth). This was also the area with the highest overall score (4.78 out of 5). The area of presentation and delivery was a close second in terms of growth (.92 point growth), yet judging from the overall

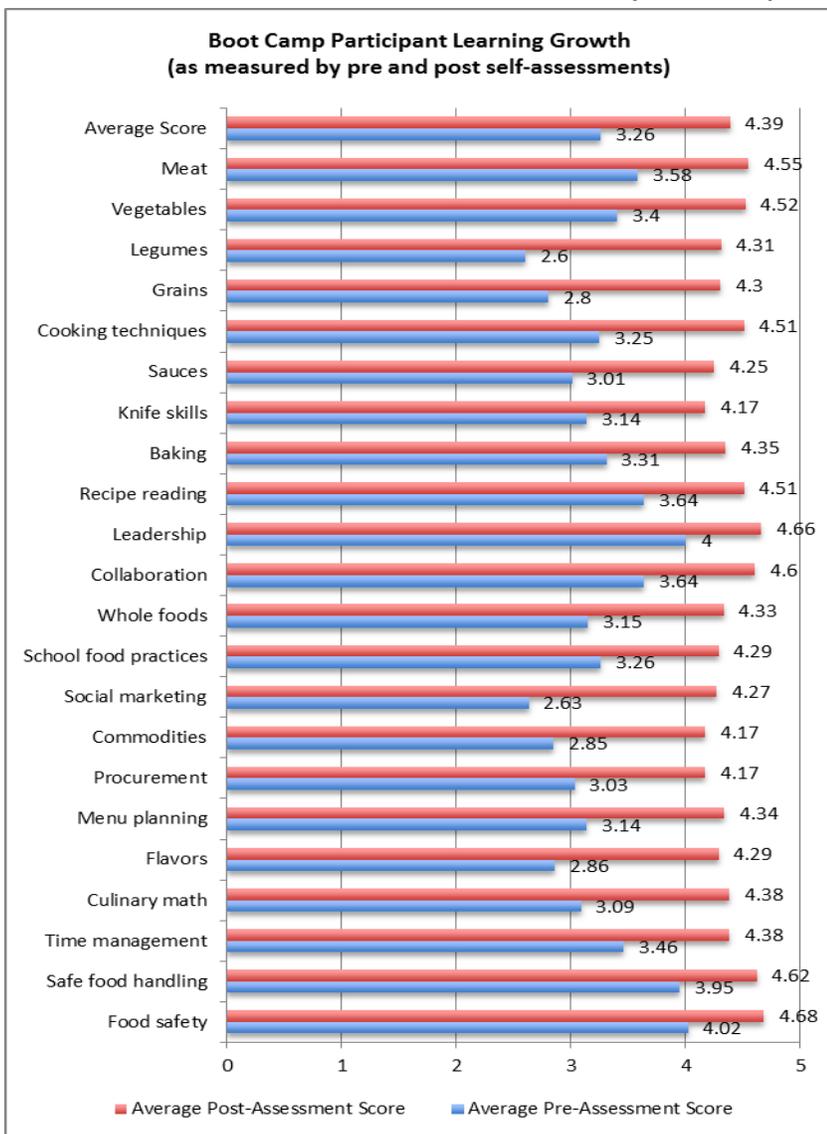


scores, chef instructors still saw themselves as needing growth in this area. The category where chef instructors had the most difficulty was checking for understanding, which received the lowest score of 3.83. While this was a significant improvement over the first score of 3.19 (January 2011), it indicated work still needed to be done in this area. The lowest growth was in their perceived ability to engage participants in learning.

Research Question #3 and 4: Culinary Boot Camps—School Food Personnel Growth in Knowledge and Skills

The impact of the culinary boot camps was contingent on two inputs: 1) the effectiveness of the culinary boot camp curriculum and materials; and, 2) the effectiveness of the culinary boot camp instructors. In each culinary boot camp, participants took a pre-event and post-event assessment, and they took a post-event program evaluation that included quantitative and qualitative responses. This section synthesizes the findings and includes analyses based on these data as well as from direct observation by the evaluator.

School Food Service Workers’ Growth as a Result of Boot Camp



Boot camp participants’ growth in knowledge and skills was measured using a pre- and post-self-assessment tool. On the morning of the first day and afternoon of the last day, participants used this tool to rate themselves in each of the key learning areas of the culinary boot camp. When participants completed their post-assessment, they did so without referring to their first assessment. The scale ranged from 1—No competence (or no experience), to 5—I am highly competent (extensive experience) and can teach others.

These pre- and post-self-assessments, used at all eight of the 2011 culinary boot camps, showed significant growth in participants’ self-reported knowledge and skills as a result of the culinary boot camp experience. The overall average score went from a 3.26 to a 4.39 (a 1.13 point growth). The areas participants felt most comfortable with at the conclusion of the culinary boot camps were food safety (4.68), leadership (4.66), collaboration (4.6) and safe food handling (4.62). The

most significant growth was in social marketing (1.64 point growth) and cooking legumes (1.71 point growth). Flavor profile, commodities, culinary math, cooking techniques and sauces followed closely as areas where participants made positive growth. While the data indicated that participants felt generally competent after the culinary boot camp, participants reported feeling least confident in the areas of commodities, procurement and knife skills (4.17 for each area).

Paradigm Changes

Many participants wrote about how the culinary boot camp experience caused them to experience major mindset shifts. Three of the most compelling statements include:

- “I really enjoyed this program. I came thinking ‘we’ll see’ and now I feel ‘this is great, we can do this.’”
- “If these ideas can truly be executed in the cafeterias of [our district], it will be the most positive change the district will have had in decades.”
- “I will never buy another bottle of dressing or sauce!”

Research Questions #3, 4, and 5: District Impact: Evidence of District Capacity and Mindset to Serve Healthy, Scratch-Cooked Foods

To evaluate the degree to which school food service personnel had the knowledge, attitude and skills to obtain and serve healthy food within their school districts and determine the degree to which school districts were serving healthy, scratch-cooked foods to students, the program evaluator interviewed the food service directors in the eight selected school districts, analyzed menus in each of these districts, and, where possible, visited schools. The evaluator also spent time interviewing food service personnel, observing meal preparation, observing lunch service and speaking with students in the lunchrooms. The analysis of the data collected in these interviews led to the following conclusions:

A. Importance of the School Meal Assessments—Developing a Common Language and a Vision for Change

The eight food service directors expressed their appreciation for the way the school meal assessment highlighted the weaknesses in their operations and made suggestions for modifications for moving toward scratch cooking. Many food service directors pointed specifically to actions they had taken based on the recommendations in the assessment and noted that their operational changes have resulted in improvements to the food being served to students. It seems that the school meal assessment either provided a vision for or reinforced their sense of the changes that had to be made to improve the amount of fresh, high-quality foods served. In most conversations, the school meal assessment report seemed to be the standard by which the food service directors measured themselves. Each spoke about their shift to scratch cooking in terms of the degrees to which they have addressed the specific recommendations put forth in their assessment reports.

The assessments helped give food service directors leverage to increase the amount of scratch-cooked foods on their menus, avoid diverting commodities (ordering brown box meats instead), reducing disposables and pre-packaging, eliminating flavored milk, and using time management and cost-savings techniques in menu planning (e.g., moving to cycle menus, reducing the number of entrees served each day).

B. Moving Away from Processed Foods and Toward Scratch-Cooking

Food service directors explained that they made a few changes at a time, so that their menus were transformed gradually. “We made small, incremental changes,” explained one director, “like serving chicken nuggets three days per week instead of every day, and pizza twice a week instead of every day.” Another director explained, “When I came to this role, nothing was cooked from scratch. We rolled out our first menu makeover by taking off a few offensive items (like donuts) and adding a few things that brought us closer to scratch cooking, like lasagna that we made in the district using a pre-cooked beef crumble. These were baby steps; nothing earth shattering.” Additionally, food service directors spoke often about transitional items, which they often described as “clean-label,” pre-packaged foods that were not scratch-cooked, but were significantly less processed than the foods they used to serve. These “clean-label,” pre-packaged items helped them to make gradual steps toward serving healthier foods to students without over burdening the capacity of the staff and facilities.

On average, it has taken these eight selected school districts two to four years to move from a heat-and-serve operation to an operation focused on scratch cooking. Processed foods that continue to appear on menus are now primarily (but not exclusively) in the form of processed meat used in the preparation of a scratch-cooked meal. Examples of this are: the ham used in homemade hot pockets; the pepperoni used as a topping on scratch-cooked pizza; and turkey dogs in pigs-in-a-blanket (which they make using whole-grain dough batter). If you were to visit the eight selected school districts before they began to transition to scratch cooking, they were collectively serving 90 percent to 100 percent processed foods. Today, however, they range from serving between 65 percent to 95 percent scratch-cooked foods with little to no processed ingredients (as evident from the food service director interviews and the menu analysis).

One of the ongoing challenges school districts face in implementing cost-efficient school food reform is the belief that students need a variety of entrée choices each day, with some school districts offering as many as nine or 10 options that would be considered for a reimbursable meal. Often, these alternative entrées, as well as a wide range of à la carte options available for purchase, are highly processed foods that have less nutritional value than the primary menu item. Giving students a choice of only healthy options is the goal. Some schools are solving this problem through creative choices on the salad bar and healthy sandwich options.

One of the most significant challenges many food service directors discussed was the decrease they experienced in student meal purchases as they began to make the transition to healthier food choices. One food service director explained, “We’ve seen our participation drop. It’s starting to come back for us. When I started in this job our [menu items] included 90 percent processed foods, and we set a goal that within two years we would be at 20 percent processed foods. The reality is that we are just now before the two-year mark and we are serving less than 10 percent processed (and that was mostly leftover commodities, ketchup and ham).”

C. Healthy Drink Choices

Many school districts began their transition to scratch cooking by removing flavored milk. Six of the eight school districts have completely removed flavored milk in the elementary schools. For some school districts, it was the first thing they did after completing their school meal assessment. One food service director highlighted the importance of engaging parents in the change process. According to one food service director, “We went to parent meetings and explained our reasons for making the change. We explained about the extra sugar. We still go to PTA meetings at least two to three times per month. As a result, we had no parent calls [about flavored milk].” Most say that they now only serve

low fat/skim milk (plain, unflavored) and water. Several of the food service directors said that while their milk consumption dropped slightly when they initially eliminated flavored milk, milk consumption increased over time.

While some school food staff spoke about how eliminating chocolate milk was a quick and easy way to reduce the amount of sugar served, others explained that they didn't feel it was worth the sugar savings if some students would no longer drink milk. For example, when flavored milk was eliminated from one of the selected school districts, the food service director reported that her milk consumption fell between 29 percent and more than 40 percent. That district, ultimately, decided to serve as much milk as possible, even if that meant serving flavored milk.

D. Reducing the Waste—Saving Money That Could Be Used for Healthier Food Purchases

As a result of information gained in the culinary boot camps and the school meal assessments, many food service directors made efforts to save money by reducing the amount of disposable items they were using in pre-portioning food, such as fruits and vegetables, in their production. Food items that they had been pre-portioning into disposable wares, such as cups and bowls, were often moved to the service line or the salad bar (for self-service). Those food service directors who had fully operational salad bars throughout their school districts explained that by having students serve themselves from the salad bar, they could save money that had been spent pre-portioning (labor and materials) and reassign a staff member to help students at the salad bar. This role also was far more rewarding for food service staff.

At the time of the site visits, most school districts had changed from relying on disposable trays for lunch service to using hard plastic trays that were washed and reused, with the exception of schools that did not have a dishwashing machine. Food service directors reported saving money by making this switch.

Similarly, many schools now also have replaced plastic utensils with metal, although a particular challenge has been to ensure that students don't throw utensils away when they are bussing their trays. During site visits, several kitchen managers explained that a good partnership with a custodian or janitor was a key to success, as was the importance of having a designated staff member assigned to the bussing line to help students properly dispose of their waste, put their utensils in an appropriate bin and stack their trays.

E. Food Access: Economically Viable Practices for Obtaining Healthy Foods

The eight selected school districts reported operating profitably despite the fact that the quality of their ingredients has been greatly improving. "If you saw our bottom line four years ago [compared to] today it would shock you. We now make so much more money than we made four years ago ... to the tune of about \$200,000." One food service director explained that their food bill last year "was less than the year before and less than anticipated." That director explained that they were able to accomplish this rare feat by spending about \$45,000 of their commodity allocations on produce, and in carefully evaluating how to reduce the waste in daily operations, such as replacing disposable trays and utensils with reusable versions.

Several others shared this same process, and attributed it primarily to a few key changes including:

- Not processing their commodities
- Identifying new vendors
- Purchasing more food less often to save on shipping costs (and storing excess food in local facilities)
- Reducing the number of entrée choices

- Increasing staff efficiencies (putting time management systems and structures into place)
- Implementing Breakfast in the Classroom
- Reducing disposables
- Using creative menu planning and recipe production that maximized economies of scale

Additionally, many school districts have found that standardizing recipes and moving toward a cycle menu, where menu items repeat on a cycle, allowed them to simplify their ordering processes and order in bulk, and they were able to use inventory at a later time.

Several of the directors discussed changes they made in their purchasing practices. Some joined new group purchasing organizations and cooperatives of schools that enabled them to get better deals than they would have if purchasing on their own. Additionally, most of the school districts have food orders shipped to a central warehouse location, which both allows them to order in greater quantities, making them eligible for greater savings, and also to save money in shipping because orders are routed to one location.

Some food service directors discussed their attempts to procure food from local sources. Several obtained beef from local ranches, and some were working with local farmers to develop deals for the procurement of fresh produce. Several of the school districts in rural regions of the state have made partnerships with local farmers to procure beans, legumes, squash and green chilies. “We’re doing a mix of government produce with fresh, local produce,” explained one director. “You may not be able to afford fresh local raspberries for everyone, but we can extend their reach by mixing them with commodity cherries to make a low-sugar, whole wheat, cherry berry crisp.”

Several school districts have worked to realign their production and distribution centers to make them more efficient. Some have closed central kitchens, while others have opened centralized kitchens and/or have created specialized kitchens that focus on one aspect of menu production for the entire district. One school district changed from five production kitchens that produced all of the food for each of their five geographical regions to using specialized operations to prepare specific foods for the entire district.

F. Engaged, Motivated and Well-Trained Staff: Preparing Healthy Foods

The eight food service directors talked about the culinary boot camp as a catalyst for change and a springboard for shifting from highly processed menu items to cooked-from-scratch meals. After completing their culinary boot camp experience, some school districts began updating recipes that would be served in their school districts. They slowly began to incorporate more scratch-cooked items on their menus. Most often, change began gradually, because systems and structures first had to be established to ensure food service staff would have the knowledge, skills and equipment to make the recipes. In addition, many explained that it took a long time to use all of their processed commodities on hand. As commodities are ordered a year in advance, school districts have to use the food in dry and cold storage before they can submit a new commodity order. For example, while many have begun using raw protein and fresh produce, some took steps, such as obtaining “clean label” beef/turkey crumble for kitchens that lacked adequate space to thaw meat, and allowed schools to reconstitute dehydrated potatoes in the production of mashed potatoes until their staff was ready and trained to make mashed potatoes from scratch. Such gradual menu changes have been good for students and for food service departments and have allowed them to grow accustomed to new menus. Invisible changes included using a higher percentage of whole wheat in scratch-cooked bread and purchased tortillas, and starting out with a blend of white and brown rice before using only brown rice.

When discussing successes and areas in which food service directors felt most proud, staff was often at the top of the list. Willingness to change the way they worked and take a leap of faith, even despite challenges and obstacles, was evident in school districts that have had the most success with transitioning to scratch cooking.

G. An Analysis of District Menus: Are School Districts Serving Healthy, Scratch-Cooked Foods to Students?

An analysis of the breakfast menus and discussions with the food service directors indicated that most of the breakfast items served fell into the category of “clean label” processed foods (e.g., bagel with cream cheese, yogurt, breakfast burritos and sandwiches, pancakes and French toast, cereal, string cheese and a granola bar type of cookie called ultimate breakfast rounds). In school districts where they prepared some of their breakfast items, menus included egg and cheese burritos, scratch-cooked breakfast bars and hard-boiled eggs. Some of the larger school districts that provided Breakfast in the Classroom had moved to a transitional solution of pre-packaged “clean label” items that were easier for food service staff to transport to classrooms, for students to handle and for janitorial staff to keep clean. Through an analysis of the menus, interviews with the food service directors, and site-based school meal service observations, the program evaluator confirmed that all eight school districts were meeting USDA nutrition requirements for breakfast. Additionally, school districts reported that their current offerings were a significant improvement over the breakfast fare they used to serve, which included highly processed items and items with high sugar content.

Lunch was the meal in which school districts showed far greater strides toward scratch cooking, with menus listing between three and four scratch-cooked meals served in an average week. Scratch-cooked items included entrées and sides, as well as a wide range of items. Commonly identified scratch-cooked menu items included: herb roasted potatoes, brown rice, cornbread, marinara sauce (served on pasta, pizza, or several other ways), biscuits, turkey noodle soup, roasted chicken (often herb roasted or barbeque), Asian pork/chicken bowl, enchilada casserole, homemade macaroni and cheese, teriyaki chicken, spaghetti with meat sauce, etc.).

Menus also included transitional items, which were far healthier than the heat-and-serve foods that school districts were serving in the past, but were not nearly as healthy as raw, fresh ingredients cooked from scratch. Examples of these transitional items included: burritos, ground beef tacos made with beef crumble (instead of raw meat), pigs in a blanket (made with homemade whole wheat dough and “clean label” turkey hotdogs), cold cut sandwiches, grilled ham and cheese, etc. Some of the remaining processed foods on the menu were student favorites that eased the production schedule because they were easy to make and required little to no work preceding production demands (including a pizza-like snack known as “pepperoni dip sticks,” chicken tenders, fish strips, egg rolls, pancakes, cold cut sandwiches and ready-made, frozen pizza). But, in most cases, the food service directors explained that many of these “clean label” processed foods are healthier today than they were a few years ago. Food service directors were working hard to select “clean label,” items that contain very few ingredients, all of which are recognizable and represent real food rather than chemical concoctions.

H. Breakfast in the Classroom

Of the eight selected school districts, six provided some type of Breakfast in the Classroom (BIC) program, ranging from a single pilot school to a district-wide implementation. The larger implementations of BIC generally started with a pilot of one to three schools.

The biggest obstacles to establishing BIC programs were teachers and sometimes principals. One food service director explained that the district had no interest in BIC because the district's focus was on maximizing instructional time. In this school district, only 35 percent of the students ate breakfast at school, despite the fact that about 75 percent of the students qualified for free breakfast. The biggest concerns of those against the idea of BIC were: 1) loss of instructional time, and, 2) mess (with a concern that food waste would attract rodents and other pests). To address the second concern, food service directors paid for more regular shampooing of carpets and exterminator services. They also invested the district's custodial and maintenance staff in the solution and paid for their extra work time and supplies (e.g. extra garbage bags). With regard to the concern about instructional time, many teachers said BIC was a very productive way to begin the day. As the teacher took morning attendance and handled some of the housekeeping issues for the day, students could eat breakfast and clean up. In the school district that had implemented BIC district-wide, the food service department had created a video that they shared with principals for the purpose of helping new teachers quickly learn about the BIC process.

In the successful implementation cases, the food service director found solutions regarding transporting the food to the classrooms (e.g., purchasing rolling coolers with icepacks and hot bags in them). In one district, the food service director hired school clubs to do the delivery, which supported the club's fundraising efforts. The food service director also taught the food service staff how to implement the program and worked with teachers to explain their role in the process. And, they figured out how to get the equipment back to the kitchen for timely restocking and cleaning. Two of the school districts that implemented BIC programs found that they did not yet have the means to consistently deliver scratch-cooked breakfasts, so they identified "clean label" products that would provide their students with a nutritious, whole grain, high-protein breakfast option.

In school districts that were quickly growing their BIC programs, they faced the challenge of over-burdening their systems and structures. For example, food deliveries and storage space were stretched to capacity. Space and time in district warehouses was an issue once they began receiving a week's worth of food for BIC as well as fresh produce and ingredients for scratch cooking for lunch. School districts that had daily deliveries needed to hire additional delivery personnel and obtain additional delivery trucks, including refrigerated trucks.

Despite the challenges, the benefits of wide-scale BIC classroom programs were beginning to be felt. Schools have reported to the food service directors in this evaluation that BIC resulted in a decrease in student absences and fewer student visits to the school nurse. Some principals have even reported a decline in student discipline issues. Nevertheless, this information is simply anecdotal at this point, and more research must be done to measure these outcomes more quantifiably.

I. Marketing and Social Marketing

Food service directors had varying abilities and interest in communicating the district's changing vision around healthy, scratch-cooked food. Some directors launched a social marketing campaign before they even made the first menu changes. "We began to talk about good food. We needed to communicate the vision to [all of our constituents] and we targeted students and parents [in our outreach]." Some directors wrote articles for parent newsletters and updated their sections of the school district's website to promote their new focus on healthy foods.

Several of the food service directors spoke about the impact of implementing a new dress code requiring their kitchen staff to wear chef attire. One food service director explained during an interview

that people were noticing these changes, and in some cases assumed that the district hired all new staff—those who “really knew what they were doing.”

Some school districts maximized technology as a marketing tool and worked to get their stories on local television; created Facebook pages to generate dialogue; put Quick Response (QR) codes on their menus so that using a cell phone to read information embedded in the code, parents could easily access information online; and collaborated with their district’s communications department to create marketing and educational videos (e.g., how to implement Breakfast in the Classroom).

At least five of the eight school districts promoted their catering services on their websites. Two school districts created a branded name and image for their scratch-cooking initiative, complete with logos, brochures and all of the other components of a brand. “Brand image is key to engaging people in a school district’s transition to scratch cooking. Now we’re recognized as a positive entity in the school district,” said one food service director.

In investigating the degree to which the other constituents in a school district supported school food reform, it was easy to see the correlation between consistent social marketing and wider buy-in and support. Outreach occurred through presentations at PTA meetings, principal meetings and other district-wide gatherings.

IV. CONCLUSION

A. Lessons Learned

While the food service directors in each of these eight selected school districts began their transition to scratch cooking at different times, all proclaimed that the school food being served today was a vast improvement from their practices of a few years ago.

Readiness for Scratch Cooking in District Kitchen Operations

Data indicate that the eight selected school districts demonstrate readiness for scratch cooking in their school kitchen operations as determined by the following short- and medium-term outcomes defined by the research study:

- School districts have clear identification/understanding of their areas of strength and areas for growth around healthy, scratch cooking (short-term outcome)
- Greater efficiency in school/district food service operations (medium-term outcome)
- Implementation of effective scratch-cooking skills and techniques (medium-term outcome)
- Recipe/menu development that incorporates scratch-cooked foods (medium-term outcome)
- Piloting of universal breakfast strategies (medium-term outcome)

B. Evaluation Highlights

The factors that supported scratch cooking in district kitchens include:

School Meal Assessments Serve as a Critical Starting Point

The school meal assessment seemed to provide the pathway and the steps to begin the change process.

Scratch Cooking Can be Achieved

In these eight selected school districts that were previously serving 90 percent to 100 percent processed foods, they now serve 65 percent to 95 percent of meals produced by scratch cooking with few or no processed foods (data gathered through menu analysis and food service director interviews).

Shifting from Processed to Scratch-Cooked Meals

Changing school kitchen operations from preparing and serving highly processed menu items to meals made from scratch was most effective when done gradually, over a two- to four-year period, which allowed staff and students adequate time to adjust to the changes.

Managing Student Choice

Giving students a choice of only healthy options is the goal.

Serving Healthy Food is Economically Viable

Despite the myth that school districts cannot afford scratch cooking, all eight of the selected school districts reported that they were operating profitably, even though the quality of their ingredients had greatly improved.

Reducing Disposables and Moving to Self-Service Saves Money

Many food service directors saved money by reducing the amount of disposable items they were using and the frequency with which they pre-portioned menu items. Formerly pre-portioned menu items were often moved to the service line or the salad bar for self-service.

Maximizing Operational Efficiencies and Ensuring Adequate Equipment for Making the Change

Several school districts have worked to realign their production and distribution centers to maximize efficiencies. Some have closed central kitchens, while others have opened centralized kitchens and/or have created specialized kitchens that focus on one aspect of menu production for the entire district. Similarly, ensuring that school districts have adequate equipment to support their operations is crucial.

Social Marketing

The ability for food service departments to communicate their vision for the importance of healthy food and the reasons it is a core issue in which students need to be educated is paramount to their ongoing success in transitioning to scratch cooking.

Engage Parents and Other Stakeholders

Food service directors must remember the importance of engaging parents in their shift from highly processed menu items to meals made from scratch. When parents understood and supported changes, school districts were likely to be far more successful; yet when parents disagreed with the changes because of misunderstandings and/or misinformation, they could hinder a school district's efforts.

Staff Readiness

Data indicate that the food service staff in the eight school districts is developing the knowledge, attitude and skills to promote fresh, scratch-cooked foods and to obtain, prepare and serve healthy foods in their school districts as determined by the following short- and medium-term outcomes defined by the research study:

- Food service staff's increase in knowledge and improved attitudes about the importance of healthy school food practices (short-term outcome)
- Food service staff's growth of knowledge and skills about obtaining, preparing and serving healthy food within their schools/districts (short-term outcome)
- Improved commodity ordering practices (medium-term outcome)
- Increased ability to effectively utilize social marketing and programming to cultivate food literacy in students and teachers (medium-term outcome).

Culinary Boot Camps

Data suggest that the culinary boot camp provided a major paradigm shift for many participants. It not only gave them the sense that change was worthwhile, but also the confidence that they had acquired the knowledge and skills to make necessary changes.

Professionalizing the Kitchen Staff

Food service directors spoke about the impact of implementing a new dress code that required their kitchen staff to wear chef attire. As food service staff began to feel that they had been professionally trained, and they dressed in the way that professional chefs do, they began to view themselves differently. They saw themselves as true assets to their schools and recognized that they were using their culinary skills to feed students healthy, scratch-cooked foods.

Supporting Culinary Leadership in the School District

Data suggests that the leadership and management provided by food service directors is an essential component of implementation success.

C. Key Recommendations

As a result of the evaluation findings, the researchers are making the following five recommendations:

1. **Initial Needs Assessment:** School districts begin by completing an initial benchmark assessment to outline needs.
2. **Action Planning:** School districts create a roadmap for transforming their food service to scratch cooking.
3. **School Food Reform Implementation Supports and Training:** School districts utilize capacity-building tools and trainings.
4. **On-Site Implementation Support:** Chefs provide customized on-site support to staff and leadership.
5. **Wellness Policies and Community Dialogue:** School food reform becomes part of a larger wellness initiative.

ⁱ Behavioral Risk Factor Surveillance System, Centers for Disease Control and Prevention, 2010; Colorado Child Health Survey, Colorado Department of Public Health and Environment, 2010.

ⁱⁱ 2007 National Survey of Children's Health.

ⁱⁱⁱ The eight participating school districts include the following: Garfield RE-2 (spring-summer 2008); Roaring Fork RE-1 (spring 2009); Montrose RE-1J (spring 2010); Adams 14 (spring 2010); Adams-Arapahoe 28J SD, commonly known as Aurora Public Schools, (spring 2010); Weld County SD-6, commonly known as Greeley SD-6, (fall-winter 2010); Colorado Springs SD-11 (winter 2011); and Harrison SD-2 (spring 2011).