

C.H.E.F.

Culinary Health Education
& Fitness Program

Detailed Findings: Final Evaluation Report

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Partners working together to promote healthful eating and activity and build healthier communities



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The Culinary Health Education and Fitness (C.H.E.F.) Program was designed to help children and families in Lincoln, rural Benton and east Linn counties achieve higher-quality lives free of preventable diseases related to poor nutrition and obesity. C.H.E.F. used evidence-based and promising-practice programs that combine physical activity, nutrition education and experiential cooking to foster a culture of health in our rural communities.

The program comprised three primary components: culinary education classes for children and families (nutrition-focused cooking classes), the school-based physical activity program Coordinated Approach to Child Health (CATCH), and monthly Tasting Tables in CATCH schools to engage children to try new fruits and vegetables. Twenty partners across the tri-county region worked together to implement program activities. Over the three-year program period, approximately 17,025 children and adults (duplicated count) were engaged in one or more components of the C.H.E.F. Program.

GOAL 1

Implement nutrition-focused culinary education courses to empower children and families in Lincoln, east Linn and rural Benton counties to be self-sufficient in the kitchen and to make healthy food choices.

Cooking courses in east Linn and rural Benton counties utilized Fresh Grown Cooking, a curriculum developed by Oregon State University (OSU) Linus Pauling Institute's Healthy Youth Program. In Lincoln County, partnership with Food Share of Lincoln County allowed for the use of the Cooking Matters for Kids, Teens and Families curricula.

These evidence-based curricula for children and adults emphasize preparing healthy meals on a budget and give participants tools for meal planning, smart shopping and kitchen skills. The courses were facilitated by nutrition education staff from OSU Linus Pauling Institute and subsequently transferred to OSU Moore Family Center, students from the College of Osteopathic Medicine of the Pacific-Northwest (COMP-NW), and community volunteers. By including COMP-NW students, C.H.E.F. aimed to engage the next generation of physicians in a whole-foods approach to health.

Cooking classes were conducted by a lead instructor—usually a trained professional (e.g., nutrition educator, OSU Extension staff)—who was assisted by a trained volunteer. Experienced volunteers (community volunteers, medical students and occasionally staff at host locations) may take lead roles over time. Classes were offered in both English and Spanish. When families participated in the courses taught in Spanish, all instruction, written materials and surveys were provided in Spanish, and the course materials and content were specifically developed to be culturally relevant.

Three Spanish-language Family Cooking classes were held over the three-year period, serving a total of 60 community

members. Classes were provided in east Linn County (2018, serving 14 people), Benton County (2019, serving 27 people) and Lincoln County (2020, serving 19 people). These classes were the result of collaborations with community partners—the OSU Healthy Youth Program and OSU Extension.

By March 2020, when COVID-19 school closures forced the suspension of the cooking classes, 56 culinary education courses had been delivered across the tri-county region, reaching a total of 866 children and adults.

Prior to COVID-19, culinary education classes were conducted at a diverse array of sites including industrial culinary education classrooms, school cafeterias, church kitchens, library community kitchens and conference rooms. Typically, the classes met once a week for five weeks, though the class schedules were occasionally modified (in duration and/or format) to better accommodate local needs and improve accessibility.

Most instructors and assistants completed pretests (76%, n=68) and posttests (70%, n=62). Pretests included questions about the training they received as well as questions intended to provide baseline measures relating to their knowledge about methods for teaching cooking classes, attitudes about the value of culinary education, perceived importance of healthy eating, and motivations for volunteering.

A number of questions on the pretests and posttests were modified over the three-year program period. Some were dropped after the first year because they did not provide useful information, and others were added in Years 2 and

3 to capture new information. As a result, the number of volunteers completing specific survey questions varies. This variation does not compromise the validity of the findings. Tests of statistical significance took these variations into account.

Effectiveness of volunteer instructor recruitment and training

The instructor recruitment process was effective. The goal of recruiting and training 96 volunteers (including medical students) was largely met, with 89 individuals trained over the three-year period. Had the year not been interrupted by COVID-19, the goal of 96 trained instructors would likely have been met. A majority were trained during the face-to-face group trainings held at the beginning of each school year, although a few received on-the-job training or completed the online trainings.

Pretest survey data suggest that volunteer instructor recruitment strategies were effective: Most volunteers agreed to teach the classes because they enjoyed cooking, they were confident in their own cooking skills, and they were eager to share their knowledge and skills with children and families in their communities. Medical students earned community service credits for volunteering, and they chose the C.H.E.F. Program instead of other options because they believed in the importance of healthy eating. The vast majority of instructors and assistants volunteered because they were intrinsically motivated to teach culinary education:

“I enjoy cooking and I believe it is an undervalued skill. I have to gain community service experience as well.”

“I think nutrition is a topic that is not covered very thoroughly throughout the education system at all levels. Also, with the current diabetes/obesity epidemic, learning about nutrition is crucial.”

Effectiveness of instructor training

Instructor training was effective. Training was designed to instruct volunteers on teaching the curricula, using curricular resources for planning class sessions, managing participant behavior and facilitating learning. It was systematically evaluated each year. In-depth feedback was gathered regarding the delivery of training, especially in Years 1 and 2.

In the first year, volunteers suggested that more time be spent on techniques for classroom management. As a result,

this topic was addressed more thoroughly in Years 2 and 3. Similarly, because of valuable feedback from volunteers, additional instruction was incorporated into the training to better provide volunteers with skills they needed to teach children about knife skills and proper handwashing.

Overall, volunteers rated the training they received positively. A majority strongly agreed (76%) or moderately agreed (14%) that the training content was well organized and easy to follow. Most (85%) felt it was the right length of time (typically two to three hours).

All volunteers (100%) strongly or moderately agreed that the trainers were knowledgeable and well prepared. They appreciated the content of the training, especially the techniques for managing children’s behavior and keeping them focused during the class.

While many volunteers felt the training was complete or adequate, many also felt there should have been more training in nutrition as well as class facilitation.

It is worth noting that several volunteers commented at the end of Year 3 that they would have liked to learn more about food insecurity in the local community and about the economic situation of the children and families. These volunteers would have appreciated more information on what the students they would be teaching were actually like.

When asked to identify the “most valuable” thing they learned during the training, most volunteers cited effective teaching strategies and classroom management. Learning about the curricula and teaching resources was also mentioned as a valuable component. Examples of volunteer instructor comments about training benefits included:

“Learning about positive communication versus negative communication in eliciting positive behavior change.”

“Managing kids and providing a safe learning environment.”

Significant gains were observed in volunteer instructor confidence around their kitchen skills. Before the training, and again at the end of the school year, volunteer instructors were asked to rate their confidence around their kitchen skills on a categorical scale from 1 (not confident at all) to 7 (very confident). For the analysis, confidence was operationalized as a rating of 6 or 7.

TABLE 1 *Volunteer instructors gained confidence in their own cooking and food-purchasing skills.*

ITEM	PRETEST	POSTTEST	GAIN	Z SCORE	P
Cooking using whole ingredients.	65.0% (n=20)	89.7% (n=62)	24.7%	2.6	<.009
Reading food labels.	68.4% (n=19)	89.7% (n=39)	21.3%	2.0	<.04
Shopping for food on a budget.	66.7% (n=66)	85.5% (n=62)	18.8%	2.5	<.013
Making homemade meals from scratch.	76.4% (n=68)	83.9% (n=62)	7.5%	—	NS
Adjusting recipe to make it healthier.	73.5% (n=68)	80.6% (n=62)	7.1%	—	NS

TABLE 2 *Volunteer instructors gained confidence in their ability to teach cooking classes.*

ITEM	PRETEST	POSTTEST	GAIN	Z SCORE	P
Using written resources in a cooking class.	35.0% (n=20)	69.2% (n=39)	34.2%	2.5	<.01
Teaching basic cooking skills.	45.0% (n=20)	71.8% (n=39)	26.8%	2.0	<.04
Managing children’s behavior in a cooking class.	26.3% (n=19)	46.2% (n=39)	19.9%	—	NS
Talking about choosing healthier foods.	48.5% (n=66)	63.0% (n=62)	14.5%	—	NS
Teaching cooking class participants how to use a knife safely.	52.6% (n=19)	66.7% (n=39)	14.1%	—	NS

As can be seen in Table 1 above, culinary education volunteers had a high degree of confidence (rating of 6 or 7) in their own cooking abilities when they volunteered to teach classes.

Even though their confidence was relatively high at the time of the pretest, statistically significant gains were measured between the time of the pretest and the posttest in the volunteer instructors’ confidence around their cooking skills. They experienced significant gains in their ability to cook using whole-food ingredients, read food labels and shop for food on a budget (see Table 1 above). Although gains were observed in their confidence in their abilities to make homemade meals from scratch and to adjust recipes to include healthier ingredients, these gains were not statistically significant.

Significant gains were observed on some items related to volunteer instructor confidence around teaching skills. Most volunteers were not professional trainers or teachers. Further, they were largely unfamiliar with the curricula they would be teaching. Accordingly, they were conservative in their baseline assessment of their knowledge and teaching skills.

After completing the training and teaching (posttest), volunteer instructors felt far more comfortable with the curricula, resources and strategies for teaching basic cooking skills. As shown in Table 2, statistically significant gains were made in the percentage of volunteers who rated themselves as “very confident” in their abilities to use the curricular resources and in their abilities to teach basic cooking skills.

TABLE 3 *Children gained confidence in their kitchen skills.*

ITEM	PRETEST	POSTTEST	GAIN	Z SCORE	P
Can make vegetable to eat by myself.	64.2% (n=380)	84.8% (n=273)	20.6%	5.8	<.00001
Can make fruit to eat by myself.	73.9% (n=380)	91.6% (n=273)	17.7%	5.3	<.00001
Can follow recipe directions.	85.5% (n=381)	93.0% (n=272)	7.5%	3.0	<.002
Helped my family cook.	67.8% (n=381)	74.9% (n=271)	7.1%	—	NS

TABLE 4 *Statistically significant increases were observed in the proportion of children who had recently tried a new fruit or vegetable.*

ITEM	PRETEST	POSTTEST	GAIN	Z SCORE	P
Tried new vegetable in last two weeks.	22.9% (n=380)	47.8% (n=272)	24.9%	6.7	<.00001
Tried new fruit in last two weeks	25.2% (n=380)	43.9% (n=271)	18.7%	5.0	<.00001

TABLE 5 *Statistically significant gains were measured in children’s practical knowledge about food preparation and safety.*

ITEM	PRETEST	POSTTEST	GAIN	Z SCORE	P
“Happy Birthday” twice to wash hands.	38.5% (n=335)	72.3% (N=264)	33.8%	8.2	<.00001
“Claw” is the name for the way to keep food from moving around when cutting,	87.2% (n=273)	97.0% (n=202)	9.8%	3.8	<.0001

Classroom management skills were perhaps the biggest challenge for volunteer instructors. Although gains were observed in volunteers’ ability to manage children’s behavior, talk about choosing healthy foods and teaching knife skills, they were not statistically significant.

Each year, a few volunteers commented on their discomfort with teaching and supervising knife skills. Safety precautions around the use of knives by children were fortified during Years 2 and 3.

Effects on culinary education participants (children)

Children ranged in age from 7 to 14, with a mean age of 11. By design, some classes were intended for younger children while others targeted older children. The gender of children

was balanced, with just over half being girls (56%) and just under half being boys (44%).

After completing culinary education, children were more confident in their ability to prepare a snack using fruits and vegetables and in their ability to follow a recipe (see Table 3).

Exposure to new foods could have resulted from the Tasting Tables or foods introduced during the culinary education classes. Regardless of the source of exposure, statistically significant gains from pretest to posttest were seen in the proportion of children who said they had tried a new fruit or vegetable in the prior two weeks (see Table 4).

In the first year of the program, children were taught to wash their hands for 20 seconds. The evaluation revealed

TABLE 6 *Statistically significant gains were measured in children’s ability to identify healthy foods.*

ITEM	PRETEST	POSTTEST	GAIN	Z SCORE	P
Brown rice	47.8% (n=283)	69.2% (n=201)	21.4%	4.7	<.0001
Tomato	38.0% (n=379)	58.9% (n=272)	20.9%	5.3	<.00001
Bell pepper	38.4% (n=284)	54.2% (n=201)	15.8%	3.4	<.0005
Whole wheat bread	70.0% (n=377)	85.2% (n=272)	15.2%	4.5	<.0001
Grapes	64.8% (n=284)	79.6% (n=201)	14.8%	3.5	<.0004
Banana	67.0% (n=379)	77.2% (n=272)	10.2%	2.8	<.004
Oatmeal	64.3% (n=283)	74.1% (n=201)	9.8%	2.3	<.02
Cucumber	58.5% (n=284)	66.2% (n=201)	7.7%	—	NS
Carrot	65.7% (n=379)	71.3% (n=272)	5.6%	—	NS
Low-fat milk	68.8% (n=381)	73.5% (n=272)	4.7%	—	NS
Apple	81.5% (n=379)	85.3% (n=272)	3.8%	—	NS
Water	93.7% (n=381)	97.4% (n=272)	3.7%	2.2	<.03
Turkey	86.3% (n=285)	89.5% (n=201)	3.2%	—	NS

that this strategy was not effective, with just over half of the children able to answer this question correctly at the end of the first year. As a result, instruction shifted in Years 2 and 3 to teach children to wash their hands before cooking for as long as it takes to sing “Happy Birthday” twice. This strategy was successful, with nearly 75% of students leaving the last class knowing how to properly wash their hands before cooking (see Table 5).

Despite the fact that before the first class, nearly 90% of children were able to correctly identify the proper way to hold food that was being cut (i.e., using a claw hand position), the gain in the proportion of children answering this question correctly after the last class (nearly 100%) was statistically significant (see Table 5).

Participation in culinary education significantly increased children’s ability to select “the healthiest” foods from options that included healthier (e.g., brown bread) and less healthy (e.g., white bread) choices (see Table 6). Although there were gains in the number of students who identified carrots, cucumbers, apples, low-fat milk and turkey as part of a healthy lunch, these gains were not statistically significant.

Children and teens were sparse in their comments on the survey, but several trends emerged. Many students felt that learning to use a knife was their favorite part of class. This was especially true for the younger children. Nearly every student was able to identify a favorite recipe, such as carrot pancakes or Pizzadillas. Some students also mentioned the value of particular health lessons (specifically, the lesson

TABLE 7 Adults gained confidence in shopping for and cooking healthy foods.

ITEM	PRETEST	POSTTEST	GAIN
Confident choosing the best-priced form of fruits and vegetables* (statistically significant gain: $Z=2.5$, $p<.01$).	37% (n=65)	60% (n=52)	23%
Confident helping family eat more healthy foods.	45% (n=65)	63% (n=52)	18%
Confident buying healthy foods on a budget.	42% (n=65)	60% (n=52)	18%
Confident cooking healthy foods on a budget.	42% (n=65)	58% (n=52)	16%
Confident using the same healthy ingredient in more than one meal.	65% (n=65)	62% (n=52)	-3%
Confident using basic cooking skills like cutting and following a recipe.	82% (n=65)	85% (n=52)	3%

on sugar and the lesson about how marketing/advertising affects purchasing habits).

Effects on culinary education participants (adults)

Most adults who participated in the family classes were between 30 and 50 years of age, with some grandparents over age 60. More adult females (70%) than males (30%) attended these classes.

The majority of adults identified their race as white, and most participated in one or more assistance programs aimed at low-income families (e.g., WIC, SNAP, Head Start, Food Pantry, Medicaid, free summer meals, free or reduced-price school breakfast, lunch or supper). This finding indicates that the program reached the intended adult target audience.

Survey responses indicate that adults enrolled themselves and their children into classes because they already felt positively about cooking and wanted to share their interest with their children. As they walked into the first class, most adults didn't think that cooking took too much time, that it was frustrating, or that it was too much work to cook meals at home. These attitudes did not change significantly after completing the class.

Participation in the class also did not change the degree to which families planned or prepared their meals together. They were already eating together most of the time before the first class, so their responses on these survey items did not change significantly over the course of the class.

Adults gained confidence regarding cooking and shopping, but the gains were not statistically significant. Participation did increase the confidence of adult participants in their own cooking and shopping skills. Although these increases are noteworthy, only one gain was statistically significant. (The gain in confidence in the ability to choose the best-priced form of fruits and vegetables was statistically significant, as indicated in Table 7.*)

Perhaps the most significant indicator of satisfaction was that 96% of families said they would share what they learned with their family and friends. A frequent comment pertained to the length of the class, with requests to increase the number of sessions: "Longer than three weeks, please." Not a single participant indicated that fewer sessions would be better.

Instructors in Linn County received rave reviews; people loved the primary lead instructor's teaching style, enthusiasm and knowledge.

Effects on medical student volunteers

The purpose of engaging medical students was to explore how teaching culinary education to low-income children and families might affect their attitudes about the relationship between food and health as well as their intention to talk with future patients about healthy eating practices.

The experience of teaching these classes changed the medical students' attitudes and intentions around the relationship of food and health. Statistically significant gains were measured

TABLE 8 Medical students experienced statistically significant gains in attitudes and intentions about healthy eating.

ITEM	PRETEST	POSTTEST	GAIN	Z SCORE	P
Asking patients about the foods they eat is as important as asking about their medications.	64% (n=25)	100% (n=25)	36%	3.3	<.0009
Learning about diet and nutrition before I begin my practice is a high priority for me.	60% (n=25)	96% (n=25)	36%	3.1	<.002
I plan to talk with patients about foods they eat.	64% (n=25)	96% (n=25)	32%	2.8	<.004
I plan to volunteer in the future in community activities that improve individual and community health.	62.5% (n=16)	89.4% (n=19)	26.9%	1.8	<.05

relating to their intention to talk with future patients about the foods they eat, their own commitment to learning about diet and nutrition, and their intention to volunteer in community settings in the future (see Table 8).

Like other volunteers, medical students made gains in their cooking skills and in some aspects of their teaching skills. Working around medical school class schedules and tests was the only noteworthy challenge for these volunteers.

Medical students were asked to describe the “most important thing you learned” as a culinary education volunteer. Here are some examples of what they said:

“I will advocate that cooking can be a family activity. I used to think of cooking in a family as the adults only, but now I see that children can play a big part and enjoy themselves too!”

“There are some misconceptions about what healthy food is and that it is expensive, which simply isn’t true. I can help patients to understand this.”

Medical students as role models

One community volunteer commented on the connection that formed between medical students and the children:

“I found the children’s interest in the medical students amazing. Most of them immediately attached themselves to the medical students. The children asked questions about the classes the students were taking and wanted more personal information from them. I was impressed with the children’s interest and happy to see they could talk about something besides their phones or their games.”

Medical students’ recommendations for future classes

Medical students also provided useful feedback about their experiences and identified important concerns when it comes

to engaging graduate students in community programs. For example, some noted that the organization and structure of the experience did not fit well with their school demands; the scheduling of classes conflicted with their own class and test schedules. This will always be a challenge when students in any discipline are used as instructors in community-based culinary education.

Others felt the training about nutrition was not in enough depth. This is a difficult concern to address, because most medical students felt the instructor training was the right length or even too long. Only a few indicated that they felt the training was too short. Still others felt that they should have had more experience with assisting in the class before being expected to lead the class.

Sustainability of culinary education

Culinary education is now recognized as a vital component in local obesity prevention efforts. C.H.E.F. increased capacity in local communities to conduct culinary education classes. Through C.H.E.F., a cadre of local volunteers has been trained and online training has been developed for new community volunteers, creating a free and fully sustainable method for preparing community volunteers—including medical students—to capably teach culinary education classes in our communities.

The evaluation team was particularly impressed with the capacity of project partners to network within each community to find appropriate sites for culinary education classes. Many of the smallest communities lacked facilities in which these classes could take place. Consequently, relationships were established with local facilities, especially libraries. Culinary education classes were then offered during

normal library operating hours and were well received. This provided unexpected advertising both for C.H.E.F. and for future culinary education classes.

In the long term, development of these relationships brings a completely new partner to the table for provision of health-related programming that can positively impact community health for years to come.

In-kind contributions from partner organizations that hosted the classes included advertising and recruitment, assistance with program facilitation, and the free use of facilities. This contributed greatly to the program's success. Continuation of in-kind support will be critical to the sustainability of culinary education classes in our communities.

We expect that the increased knowledge, increased cooking skills, and reported changes in eating preferences measured in adults and children who participated in the culinary

education component of the program will be retained over a lifetime.

The engagement of higher education in delivery of cooking classes will be continued after C.H.E.F. ends. Community volunteerism is a requirement for medical students at COMP-NW, and we expect that future culinary education classes held in the communities adjacent to the medical school will have access to a pool of medical students who are both committed to the value of healthy eating and motivated to teach those in their community how to prepare healthy meals at home.

Their experiences with C.H.E.F. are also likely to contribute to a lifelong shift in the way this next generation of physicians approaches the topic of nutrition with their patients. After teaching culinary education, medical students' post-graduation intention to teach culinary education in their local communities and to talk with future patients about healthy eating increased.

GOAL 2

Expand CATCH as a sustainable program for promoting health and the attainment and maintenance of a healthy weight for children in Lincoln, east Linn, and rural Benton counties.

CCCWN first introduced CATCH to schools in Linn and Lincoln counties in 2012 when federal funding was received to implement the program in 27 schools. Since then, CATCH has reportedly been sustained in 100% of those original schools. C.H.E.F. successfully expanded the delivery of CATCH in 11 additional schools (including four middle schools), both increasing the program's reach and providing continuity for students as they move from elementary school to middle school.

The 11 schools were Lacombe School, Hamilton Creek School, and Seven Oak Middle School in Lebanon; Central Linn Elementary School in Halsey; Monroe Grade School in Monroe; Alsea Charter School in Alsea; Oceanlake Elementary and Taft Middle/High School in Lincoln City; Yaquina View Elementary School in Newport; Waldport Middle School in Waldport; and Siletz Valley School in Siletz. Combined enrollment in these schools in 2020 was 2,662.

In Year 1, C.H.E.F. established CATCH in seven schools. During this time, the groundwork was laid to implement CATCH in the remaining four schools. The target goal of

establishing CATCH in 11 schools was attained in Year 2. All schools continued to implement CATCH in Year 3, up until the mandated school closures in March 2020 due to COVID-19.

Depending on the school where they were enrolled and their grade level in 2017, students may have participated in CATCH during physical education classes for one, two or three years total. Except in extraordinary situations, 100% of children in the grade levels where CATCH was implemented are required to take PE. As a result, approximately 100% of enrolled students in those grade levels engaged in CATCH activities.

To educate parents and interested community members about CATCH, kickoff events were held throughout the grant period in conjunction with other school events, such as parent-teacher conferences and Community Wellness nights. CATCH kickoff events were conducted by Project Director Krystal Boyechko along with County Coordinator Sommer McLeish or Shelagh Baird in Lincoln County and Diane Giese in Linn and Benton counties.

Attendees were invited to play the “Go-Slow-Whoa” food identification game, and CATCH handouts were distributed on Go-Slow-Whoa foods, Being Active, and Pick of the Month. Handouts were also provided about culinary education classes conducted as part of the C.H.E.F. Program.

Each May, CATCH Champions were invited to complete an end-of-the-year survey. Combined, over the three-year period, 19 Champions from the 11 participating schools completed the survey. Taking turnover into account, this represents a nearly 100% response rate from the Champions.

CATCH Champion and educator trainings were held in each year

Multiple CATCH trainings were held each program year, providing hands-on instruction in CATCH implementation to site CATCH Champions and other school staff. Initial training provided comprehensive information on the C.H.E.F. Program, the CATCH curriculum, supportive resources, and ways to promote healthy eating and physical activity throughout the school day.

Subsequent booster trainings provided opportunities for practicing new physical activities and strategies for effecting policy and systemic change. In most schools, the PE teacher functioned as the CATCH Champion, but some schools also chose to train teachers to utilize CATCH activities for “brain breaks” in the classroom.

Over the course of the three years, 12 trainings were conducted—often in partnership with OSU Extension Service of Lincoln County—reaching a total of 74 CATCH Champions and educators. In Year 1, three trainings were held across the region, training 20 CATCH Champions and other school staff in implementation of the curriculum. Four trainings were held during Year 2, training 42 CATCH Champions and staff. Five CATCH booster trainings were held throughout the fall of Year 3, building capacity in 12 more educators.

CATCH activities revitalized PE classes

Nearly 6,500 students in participating grade levels were engaged in CATCH from 2017 to 2020. Champions were consistent in their reports that the CATCH curriculum got children moving quickly, a particularly important feature of the program given that most school schedules fell short of reaching the Oregon mandate of 150 minutes of PE for children in grades K-5 and 225 minutes for youth in grades 6-8. Because of scheduling constraints, only 60% of the

Champions reported that 80–100% of their students engaged in MVPA for 30 minutes at least three times a week.

Fortunately, CATCH’s easy implementation and focus on inclusivity enabled PE teachers to maximize available PE time. According to one Champion,

“The activities are easy to set up and a quick way to get kids moving.”

Another Champion echoed that sentiment and elaborated on other benefits they found with the curriculum:

“These activities get kids moving. Some of them also give the students a challenge in different ways, whether it is a social challenge, or a problem-solving challenge. Especially in today’s world, those are great activities for them.”

Across all three years, the CATCH Activity Box and Guidebook were the most frequently used resources. Survey responses confirmed observational data: The ease of being able to bring the activity box into the gym meant it was used most frequently by the most teachers. First-year teachers found the activity box to be especially helpful.

Overall, the Champions are enthusiastic supporters of CATCH. They appreciate the “simplistic” directions as well as the “direct hands-on” and “non-elimination” aspects of the activities. Champions also reported that they were able to easily incorporate CATCH components with curricula and programs already in place.

Sustainability of CATCH

CATCH will continue to promote better health and the maintenance of a healthy weight for children in the tri-county region. This conclusion is based on prior experiences implementing and sustaining CATCH in the original 27 schools and data gathered during the 2017–2020 C.H.E.F. Program.

The evaluation team has seen firsthand how CATCH has had important and sustained impacts on school culture and on the surrounding community. PE teachers in the original CATCH grant have continued to use CATCH activities in their gym classes for years after participating in the original grant project. Similarly, CATCH nutritional principles have been sustained in the original cohort. Continued reminders of the Go-Slow-Whoa concepts are aided by the placement of colorful posters in the lunchrooms and school foyers. Classroom teachers who choose to eat

lunch with the students incorporate Go-Slow-Whoa into their conversations.

Champions who implemented CATCH through the C.H.E.F. Program also believe that the CATCH principles of non-exclusionary activities that engage children in moderate to vigorous levels of physical activity and the nutritional concepts of Go-Slow-Whoa are here to stay in their schools. These Champions report that children come into the gym ready to engage in vigorous physical activity. Not a single CATCH Champion suggested that CATCH activities in PE would be discontinued after the end of the grant.

Barriers to schoolwide adoption of CATCH

CATCH Champions were encouraged to promote CATCH principles throughout the school. This was a more daunting challenge, and while Champions were pleased with progress made in the PE class, they were not as pleased with the degree to which other teachers in the school used CATCH principles in their classrooms. Most CATCH Champions felt that others in their school viewed physical activity as less important than the core academic subjects. Motivating other educators to use CATCH physical activities for brief breaks in the classroom was arguably the most difficult challenge for CATCH Champions. (Not surprisingly, these same barriers were also mentioned by CATCH Champions in the original 2012–2014 CATCH grant.)

Recommendations of CATCH Champions regarding implementation during COVID-19 school closures

Per the governor's order, all Oregon schools were closed as of March 12, 2020. In response, school districts implemented distance learning, including PE, to varying degrees. In the event that schools need to close again, CATCH Champions were asked to share their best practices when implementing CATCH during the current school closures and to provide recommendations for PE teachers who may need to make these accommodations in the future.

Concerns about losing ground in efforts to address pediatric obesity are valid when after-school sports teams, in-person PE classes and even neighborhood pickup games are canceled. Additionally, physical activity is critical during times of stress and uncertainty, especially for children.

PE, by nature, is a subject that can be more challenging to teach from a distance. One unanticipated benefit that came

with using the CATCH curriculum—which is a commercial product—was the company's rapid development of coordinated online resources for at-home PE programming. *CATCH At-Home* provided PE teachers with extensive online resources for online learning and for creating printable guides to be sent home for students without internet access. Champions who used these resources found them useful. One recommended that others “utilize the website! It has everything you could possibly need and is easy to navigate.” Champions particularly liked that the materials were eye-catching and aligned with the Oregon PE standards.

Best-practice recommendations from Champions include:

“Use CATCH materials to create packets that can be sent to student homes, as not all students have access to the internet.”

“Focus on activities that students can do using items around the house.”

“Rewrite online lessons into a less wordy format to increase accessibility.”

Other resources that Champions recommended for creating at-home content included the CATCH demo videos, CATCH book and DVDs, YouTube workout videos, oregonshape.org and shapeamerica.org.

Despite the availability of *CATCH At-Home* and other online resources, Champions reported that fewer of their students were engaged in MVPA after school closures. Prior to COVID-19, a majority reported that 80–100% of their students engaged in MVPA for 30 minutes at least three times a week while at school. After school closures, fewer than half believed their students were this active. One reason for children's reduced engagement in physical activity after school closures may be the communication challenges associated with at-home learning. In spring 2020, 70% of Champions reported that they had less communication with their students than they had while schools were open.

Finally, according to the Champions, the biggest challenge to promoting at-home CATCH activities was the difficulty parents had with navigating the website. Multiple logins and passwords added extra stress for parents during a time when they were already overwhelmed. Some parents just gave up trying. In the event of future school closures, supporting parents who have difficulty getting online will be important.

GOAL 3

Increase consumption of fruits and vegetables among children in Lincoln, east Linn and rural Benton counties.

Tasting Tables were hosted at the 11 CATCH schools, reaching 100% of students

Tasting Tables provided approximately 8,900 children with an opportunity to try new fruits and vegetables. C.H.E.F. introduced children to new fruits and vegetables in two different ways: monthly Tasting Tables and culinary education. It is important to note that there is no way to separate out the impact of these two concurrent activities. That said, statistically significant gains were measured in the proportion of children who said they had tried a new fruit or vegetable in the past two weeks. These gains were measured in the proportion of children (who participated in culinary education) who said they had tried a new fruit (25.2% at pretest compared to 43.9% at posttest) or new vegetable (22.9% at pretest compared to 47.8% at posttest). These children had likely also tasted a new fruit or vegetable at a Tasting Table the same month they took their culinary education class.

During site visits, evaluators heard enthusiastic student comments, such as “Hurry up! It’s Tasting Table day!” In addition, some schools chose to expand the Tasting Table to teachers by using their wellness dollars to provide the same sample in the teacher’s lounge. The wellness culture of these schools appears to have been positively impacted by the C.H.E.F. Program. Building on the momentum generated by C.H.E.F., some communities and schools adopted other wellness initiatives around drinking water, the 5-2-1-0 Challenge, and Screen-Free Week.

OTHER C.H.E.F. ACTIVITIES

Annual Health Summits were held in 2018 and 2019 as planned. The first, held in April in Lebanon, addressed the impacts of screen time on youth. It was very well attended, bringing together 160 participants from regional health and education organizations. Although held in Linn County, many attendees traveled from Lincoln County to participate.

The 2019 summit was held in April at the Newport Performing Arts Center. This summit, also well attended, addressed food insecurity and generated meaningful conversations around local food security issues. Due to the pandemic, the planned April 2020 summit was held in September as a virtual event. The topic was generational poverty.

Sustainability of Tasting Tables

After COVID-19 has been contained, we hope that Tasting Tables will return and their sustained presence will continue to increase consumption of fruits and vegetables among children.

In the original cohort of CATCH schools, the presence of monthly Tasting Tables featuring a local Pick of the Month became institutionalized with administrative support, the involvement of kitchen staff, and the eager anticipation of students and faculty. We hope the same will be true for the 11 new schools participating in C.H.E.F. There is reason for optimism. Before the pandemic, these schools had committed to continue providing Tasting Tables, thus providing students with healthy snacks and encouraging them to sample foods they might have otherwise not tried.

Lebanon Community School District is likely to return to their long-established practice of hosting Tasting Tables for children and now teachers. Similarly, OSU Extension will work with the Lincoln County School District to resume the Tasting Tables in schools on the coast.

Tasting Tables have also been adopted at the medical school, which features local produce on their “Wellness Wednesdays” and in other community settings, increasing adults’ access to local produce and educating community members about healthy food choices.

The growing popularity and impact of these summits, held annually since 2009, is likely due in part to the thoughtful selection of issues addressed and the summit format itself. Issues are relevant and meaningful to health, education and social service providers across the region. Opportunities to explore subtopics in greater depth during breakout sessions allow for deeper discussions.

All HRSA reporting requirements (e.g., the annual progress and PIMS reports) were met throughout the three-year grant period, and all required plans were completed, including the Strategic Plan, Marketing Plan, Business Plan and Sustainability Plan.

1. Dashboard Measures

GOALS	STRATEGIC OBJECTIVES		DETAILS
<p>A. By April 2020, implement CATCH in 11 schools, increasing physical activity levels of at least 80% of eligible children.</p> <p>Sites: Hamilton Creek School, Lacombe School, Seven Oak Middle School, Central Linn Elementary, Monroe School, Alsea School, Taft Middle School, Oceanlake Elementary, Yaquina View Elementary, Waldport Middle School, Siletz Valley Schools.</p>	Outcomes	# schools	<p>CATCH</p> <ul style="list-style-type: none"> The no-cost extension was approved. C.H.E.F. will be able to continue providing CATCH implementation support and resources through December 31, 2020. Opportunities for virtual CATCH trainings have been shared with CATCH Champions.
	Year 1	7/11 schools 1,176 students	
	Year 2	11 schools 2,588 students	
	Year 3	11 schools 2,662 students	
<p>B. By October 2018, provide at least 80% of eligible children with the opportunity to try new fruits and vegetables by hosting monthly Tasting Tables at 100% of CATCH schools.</p>	Outcomes	# schools	<p>Tasting Tables</p> <ul style="list-style-type: none"> The no-cost extension was approved. C.H.E.F. will be able to continue providing Tasting Table implementation support through December 31, 2020. Pick of the Month flyers are being shared with partner organizations.
	Year 1	7/11 schools 2,311 students	
	Year 2	11 schools 3,221 students	
	Year 3	11 schools 3,377 students	
<p>C. By April 2020, conduct 69 culinary education courses across the tri-county region, serving at least 1,380 adults and children.</p>	Outcomes	# courses taught	<p>Culinary Education</p> <ul style="list-style-type: none"> The no-cost extension was approved. C.H.E.F. Program will be able to continue providing cooking class implementation support through December 31, 2020. Virtual cooking classes are being developed.
	Year 1	15 courses 294 participants	
	Year 2	26 courses 379 participants	
	Year 3	15 courses 193 participants	
	<p>Total courses: 56 Total participants: 866</p>		
<p>D. By April 2020, train at least 96 volunteers and medical students to deliver culinary education courses.</p>	Outcomes	# trained	<p>Culinary Education Volunteers</p> <ul style="list-style-type: none"> The no-cost extension was approved. C.H.E.F. will be able to continue providing cooking class implementation support until December 31, 2020. OSU dietetics interns and an OSU Extension nutrition education intern will be assisting with the virtual culinary education classes.
	Year 1	35	
	Year 2	29	
	Year 3	25	
<p>Total trained to date: 89</p>			

2. Meeting/Events: The Community Health Summit on Generational Poverty has been rescheduled as a virtual summit on September 11, 2020.

3. Upcoming Deadlines/Updates: The no-cost extension was approved, allowing for continuation through December 31, 2020. The PIMS report is due July 31, 2020.

Evaluation findings

It was an unprecedented time in Oregon's history due to challenges of the COVID-19 pandemic and the historic wildfires affecting our region. And yet the C.H.E.F. Program continued to function, completing all of its activities and objectives and—ultimately—its goals to improve the health and well-being of our communities.

The purpose of the evaluation during the no-cost extension was to document the transition from in-person activities to virtual activities and to judge the relative effectiveness of the new strategies.

Network leadership

With sustained leadership provided by Coast to Cascades Community Wellness Network (CCCWN) and the collaborative efforts of Partners for Health (PFH), the C.H.E.F. Program was able to overcome barriers presented by the COVID-19 pandemic. With the exception of one PFH meeting that was canceled because fires were impinging on those living in Lincoln and Linn counties, all meetings were convened virtually on their scheduled days.

CCCWN most recently met in November 2020. A major accomplishment of this meeting was the members' decision to sign a renewal of the Memorandum of Agreement for 2021-2023. This is unambiguous evidence that the Network will be sustained. The CCCWN Steering Committee met every two to three months, providing timely guidance on program activities. PFH met monthly to address and solve day-to-day issues. Generally speaking, these formal meetings had higher attendance than they had when they were held in-person. Travel time (some members must drive over an hour to attend the meetings) was no longer a barrier. Meetings were conducted efficiently, sometimes ending earlier than scheduled. Because of the high functionality of these leadership groups, as well as the hard work of the program staff, the new (virtual) C.H.E.F. activities were resumed as soon as possible.

Virtual summit

The annual Community Health Summit originally scheduled for April was rescheduled for September 11 as a virtual event. Program staff and community partners carefully researched online platform options and decided to use Zoom. After modifying the conference agenda to be suitable for a virtual

event, the conference leadership team practiced hosting the event until they acquired the necessary technological and professional skills. To their credit, the event took place flawlessly with no technical glitches. Attendance was high; 140 participants learned about generational poverty. Ratings on the participant satisfaction survey were remarkably high: Approximately 90% of the 67 participants who completed the survey "strongly agreed" that they would recommend this event to their friends (the remaining 10% "agreed" with the statement). Just over 85% "strongly agreed" that they had learned things they would apply in their personal and professional lives. It is recommended that future summits be based on a hybrid model, accommodating in-person as well as virtual attendance.

Culinary education

Eight remote cooking courses serving 124 participants were conducted during the no-cost extension period, for a total of 64 courses and 990 participants. OSU Extension Service of Lincoln County conducted two remote nutrition and culinary education sessions (three classes each) that used a modified version of the Cooking Matters curriculum. One of the sessions provided bilingual instruction for Latinx families.

OSU Moore Family Center conducted six remote cooking class sessions (four classes each) in east Linn and rural Benton counties. The format of these sessions closely aligned with the in-person cooking classes provided before the pandemic, although the content and instructional strategies were modified to accommodate remote instruction. Participants received packets of instructional materials ahead of time and modest financial support to cover the purchase of the foods needed for each session.

The evaluator observed a sample of these sessions and found them to be conducted with integrity, warmth and humor. In some ways, virtual classes had advantages over in-person classes conducted in a remote location: Participants were working in their own kitchens, extended family members could participate, and children learned where to find kitchen tools and ingredients in their own homes. Although some classes were challenged by variable attendance, the same challenge occurred during in-person classes. One advantage of virtual learning is that a single class could include families from all three counties, reducing the problem of low enrollment in in-person classes restricted to a single community.

Now that the curriculum has been converted for a virtual format, there are good reasons to retain the virtual option in addition to in-person classes (when they can be resumed).

CATCH

CATCH Champions were asked about strategies they recommended for others who were trying to implement CATCH for at-home learning. The most frequently recommended resource was the CATCH Global Foundation website, which quickly developed resources last spring for PE teachers who have to teach their students virtually. Four CATCH Champions participated in CATCH's virtual trainings and found them to be helpful. C.H.E.F. provided additional information and online resources to all 11 sites for hybrid and online learning.

Tasting Tables

Unfortunately, Tasting Tables were discontinued when the schools closed. They had been institutionalized by many schools prior to the pandemic. Nutrition Services leadership have indicated that they will be resumed when barriers presented by the COVID-19 pandemic are resolved.

The Pick of the Month flyer—featuring nutritional information and recipes for local, seasonally available produce—will continue to be produced and shared regionally. The flyer is produced by Samaritan Health Services and is available in both English and Spanish.



**Coast to the Cascades
Community Wellness
Network**