SHAPE NC ANNUAL REPORT

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This report describes the evaluation of the Shape NC initiative and the results observed at the end of the third year.

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Shape NC Annual Report

Executive Summary

*Shape NC: Healthy Starts for Young Children* is a six-year, $6 million partnership between The Blue Cross and Blue Shield of North Carolina (BCBSNC) Foundation and The North Carolina Partnership for Children, Inc. (NCPC) created to address early childhood obesity. Shape NC assists communities across North Carolina in their efforts to improve environments where young children spend a significant amount of time to help ensure that their earliest experiences with food and physical activity inspire a lifetime of healthy behaviors.

During the first three years, the initiative engaged 19 communities spanning 27 counties across North Carolina - eight communities joined in March of 2011 (cohort 1), ten additional communities joined in September 2011 (cohort 2), and one final community joined in March of 2013. Activities within each community included organizing an Early Childhood Obesity Prevention team that focuses on community-wide efforts, and working with a designated child care center to transform it into a model for nutrition and physical activity best practices for other local centers.

Evaluation data have been collected from participating communities on a quarterly basis since September of 2011 to track Shape NC efforts and to assess progress toward key goals. While September 2011 is considered to represent baseline data, cohort 1 communities and centers had been engaged in the program for six months. Major accomplishments are highlighted below:

- **Improvements in Shape NC model early learning centers greatly increased the percentage of children exposed to healthy physical activity and nutrition practices.**

  The greatest gains were seen in the areas of active play, fruit, and beans and lean meats.
  - Active Play: The percent of children being provided with 90 minutes or more of physical activity daily rose from 51% to 85% - an increase of two thirds over baseline.
  - Fruit: The percent of children being provided with fruit two or more times per day rose from 34% to 80% - increasing more than 130% over baseline.
  - Beans and Lean Meats: The percent of children being provided with beans or lean meats one or more times per day rose from 9% to 40% - an increase of more 300% over baseline.

Nearly 400 additional children received the recommended servings of fruit and nearly 300 additional children received the recommended minutes of active play and servings of beans and lean meats. These sizable gains were achieved despite slight declines in center enrollment. While data showed notable improvements in the percent and number of children being provided with active play time and healthy foods, it was difficult to detect an impact on child weight. The cross sectional data appeared to show a slight increase across each individual school year in the percent of children at a normal weight, but none of the changes were statistically significant.
Child care centers almost doubled the number of best practices adopted around physical activity, nutrition, and outdoor learning, increasing the percent of best practices met from 40% to 74%; and they accomplished several goals from their individual action plans.

At baseline, centers met an average of only 40% of the best practices. Looking across each of the five areas of Active Play, Screen Time, Healthy Food, Healthy Beverages, and Outdoor Play, the percent of best practices met ranged from 27% (outdoor play) to 60% (screen time). By September 2013 there had been improvements in all five areas, with the percent of best practices met ranging from 69% (outdoor play) to 86% (screen time). The largest improvements were seen in the areas of Outdoor Play and Healthy Foods.

- **Outdoor Play**: Centers more than doubled the number of outdoor play best practices being met. Of the 19 outdoor play best practices, centers went from meeting an average of only 4.81 (27%) best practices to meeting 12.4 (69%) of them.
- **Healthy Foods**: Centers nearly doubled the number of healthy food best practices being met. Of the 31 healthy food best practices, centers went from meeting an average of 11.6 (37%) best practices to 21.9 (71%) of them.

Goal setting and action planning appears to have helped move these centers forward in their adoption of best practices. Action Plans created by center directors included, on average, 16 goals, of which 10 were fully accomplished.

- **Smart Start local partnerships succeeded in bringing together a wide variety of people and organizations, creating a shared vision, and working to create and implement Early Childhood Obesity Prevention Action Plans.**

From the outset, local action planning teams frequently included representatives from the local health department, child care programs, cooperative extension, local colleges and universities, and health care providers. Over time, team size rose slightly from 22 to 26 members. Maintaining engagement and interest within a diverse team can be challenging; therefore, the stability in community groups involved and the slight growth in team size represent a great accomplishment. Working on these teams was seen by all communities to have improved linkages with other organizations and leveraged new resources. The Early Childhood Obesity Prevention Action Plans created by these teams included, on average, nine goals, of which five were fully accomplished.

There are many notable accomplishments from the first three years of this initiative, which have positioned communities well for future success in early childhood obesity prevention. This report describes in detail the changes observed to date at multiple levels – children, child care centers, and communities. The last section of this report also considers what lessons can be gleaned from this initial phase. As Shape NC transitions into the next three years of this initiative, recognizing the lessons learned from both the accomplishments and challenges will be critical for continued success and dissemination of this model.
Part 1: Project Overview

*Shape NC: Healthy Starts for Young Children* is a partnership between the Blue Cross and Blue Shield of North Carolina (BCBSNC) Foundation and The North Carolina Partnership for Children (NCPC) to tackle the problem of early childhood obesity across North Carolina. Shape NC has purposefully directed its efforts at early childhood, as this developmental period has been identified as a critical period for obesity development. Research has shown that eating and activity habits learned during these early years tend to track as children age. Furthermore, children who are overweight or obese during early childhood are at increased risk of becoming overweight or obese adults.

Shape NC has been working with local communities to support the creation of environments that foster healthy eating and physical activity behaviors in young children. Efforts are targeted toward those settings where young children spend a significant amount of time to help ensure that their earliest experiences with food and physical activity inspire a lifetime of healthy behaviors. The initiative has been guided by seven overarching goals:

**GOAL 1.** Establish a state-level childhood obesity taskforce organized by the Institute of Medicine that will develop a blueprint for future policies and programs needed to support healthy Body Mass Index (BMI) among children birth to five.

**GOAL 2.** At least 19 model communities will engage a diverse set of stakeholders to develop and implement locally-responsive childhood obesity action plans.

**GOAL 3.** At least 19 model early learning centers will implement physical activity, nutrition, and outdoor learning environment best-practices for children two to five, as measured by the Shape NC Center Assessment.

**GOAL 4.** The percent of children two to five who are enrolled in 19 model early learning centers and are provided with 90 minutes of active play time daily; and offered healthy fruits (fresh, frozen, or canned in juice), nutrient-dense vegetables (not potatoes, green beans, or corn), and lean protein daily will increase over time.

**GOAL 5.** By the end of year three, at least five Shape NC model early learning centers will be designated as Model Demonstration Sites in nutrition, physical activity and outdoor learning environments.

**GOAL 6.** The percent of four year-old children enrolled in the model centers who are at a healthy weight (defined as below the 85th percentile) will increase over time.
GOAL 7. At least 75 staff in 10 or more model early learning centers will implement staff wellness strategies and achieve improvement in at least one of the following health goals set for the project:

- Participate in 30 minutes of physical activity three times per week
- Eat three to five servings of fruits and vegetables (non-potato) most days of the week
- Drink no more than one-12 ounce sweetened beverage per day
- Not smoke

To help communities achieve these goals, NCPC created the Shape NC Implementation Team, pulling together experts from three well-established programs working to improve nutrition and increasing physical activity among preschool children. These partners include:

1. **Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC)**: a program developed and evaluated by researchers at the University of North Carolina at Chapel Hill that helps child care centers improve their provisions, practices, and policies around food and physical activity.

2. **Preventing Obesity by Design (POD)**: a project of the Natural Learning Initiative at North Carolina State University that works with child care centers to transform their existing playgrounds into stimulating, play and learning environments offering diverse opportunities to encourage increased physical activity and healthy nutrition.

3. **Be Active Kids®**: a program that offers developmentally appropriate curricula and various training modules to increase physical activity of both children and adults in early care and education settings.

NCPC worked with 19 Smart Start local partnerships that serve 27 counties to implement Shape NC. The first eight partnerships (cohort 1, highlighted with dark red) launched their efforts in March 2011, the next 10 (cohort 2, highlighted with red) launched in September 2011, and one final partnership (cohort 3, highlighted with light red) launched in March of 2013. Each partnership formed a local community action planning team to develop and implement an Early Childhood Obesity Prevention Action Plan. Each partnership also identified one local child care center to work with to transform into a model of nutrition and physical activity best practices.

![Figure 1.1 Locations of Partnerships Participating in Shape NC](image)
Four local partnerships were designated as “Hubs” and charged with providing technical assistance to their own community as well as three or four additional surrounding communities in support of Shape NC goals. Each Hub designated a Hub Specialist to be a part of the Shape NC Implementation Team. As part of the Implementation Team, Hub Specialists received guidance from the experts about child obesity prevention best practices to take back to their communities and were able to provide feedback about specific challenges encountered.

To evaluate the impact of Shape NC, NCPC brought on an evaluation consultant and worked with the consultant to design an evaluation plan and create data collection instruments. That plan called for data to be collected from these communities and centers, on a quarterly basis, beginning in September 2011. Baseline data were not collected until the end of the first year because development of the evaluation plan and all measurement tools was part of the first year’s activities. Therefore, evaluation of the initiative’s impact reflects changes observed over the past two years (from September 2011 to September 2013) even though Shape NC is completing its third year. Additionally, communities and centers in cohort 1 had been engaged in the program for six months prior to the initiation of data collection, which may account for some of the differences observed between cohorts 1 and 2 at this “baseline” measurement. Measures collected include:

- **Child Height and Weight:** Hub Specialists measured height and weight of the four year old children at each model early learning center at the beginning and end of each school year. Gender and date of birth was also collected to allow for calculation of BMI percentile and z-score (which allow a child’s BMI to be compared against other children of similar age and sex) and determination of percent of children who are overweight.

- **Shape NC Center Assessments and Model Early Learning Center Activity Trackers:** Every six months Directors of model early learning centers completed the Shape NC Center Assessment and an Activity Tracker. The Center Assessment evaluated the center’s compliance with best practice recommendations around nutrition, physical activity, and outdoor learning. The Activity Tracker collected information regarding the development and implementation of their center’s Early Childhood Obesity Prevention Action Plan.

- **Local Partnership Activity Trackers:** Every three months, Executive Directors of local partnerships completed an Activity Tracker. These activity trackers collected information regarding the formation of the local community action planning teams and each team’s work toward developing and implementing its Early Childhood Obesity Prevention Action Plan. These trackers also captured each team’s efforts to provide technical assistance to their local model early learning center.

- **Hub Specialist Activity Trackers:** For the first two years, Hub Specialists completed an Activity Tracker every three months. Because Hub Specialists are the main channels through which the intervention is disseminated, the majority of questions on their trackers focused on process data – the technical assistance they provided to their assigned local partnerships and model early learning
centers – which is not included in this report. In order to more closely monitor the week-to-week activities of these Hub Specialists, and to be able to respond to their needs more quickly, NCPC assumed responsibility for tracking of these data after June 2012.

These data have been used to create a summary report at the end of each year. These reports review the progress observed to date and help identify priorities for the coming year. Annual reports were written in October 2011 and December 2012. The current document is the third annual report.
Part 2: Project Update

The previous annual report illustrated that many notable improvements had been made and several of the year 3 milestones had already been reached.

- **Children:** Between 70-100% of children in cohort 1 and 38-84% of children in cohort 2 were being provided with 90 minutes of active play time, healthy fruits, nutrient-dense vegetables, or lean protein daily. In all but one area (beans and lean meats), centers were meeting year 3 milestones, which specified that 60% of cohort 1 children and 55% of cohort 2 children receive these provisions.

- **Child Care Centers:** Centers in cohort 1 were meeting, on average, 75% of best practices and centers in cohort 2 were meeting 63% of best practices. On average, cohort 1 centers were meeting their year 3 milestone for this goal (75% of best practices) and cohort 2 centers were just short of their milestone (65% of best practices).

- **Local communities:** Each of the communities (cohorts 1 and 2) formed a local action planning team and worked with that team to develop and implement an Early Childhood Obesity Prevention action plan. Tracking of goals and action plans illustrated that these communities’ action plans had specified, on average, eight goals, of which two had been fully accomplished. Completion of two goals across cohort 1 and 2 met milestones set for year 2 (for all cohort 1 communities to have completed two goals) as well as year 3 (for all cohort 2 communities to have completed two goals).

Given that many of the year 3 milestones had already been reached by the end of the second year, a major charge for this third year has been to maintain these changes. The Shape NC initiative has continued to work in the original 18 communities from cohorts 1 and 2. While there have not been large increases in the number of best practices adopted by centers, they have successfully maintained advancements made during the previous year. Centers have also continued work on their action plans, setting five additional goals and reaching five additional goals on average. In addition, communities have continued to make progress on their action plans, setting one additional goal and reaching three additional goals on average.

Expansion has been another major theme that has emerged from this year’s work. One piece of this expansion was the addition of another local community, specifically a community in the “Transformation Zone” – an area in northeastern North Carolina made up of rural, distressed counties with high needs. That community was identified in March and began implementation in September. Another component of expansion that has received a lot of attention during this past year is conceptualization of how to disseminate the Shape NC initiative. The 19 communities that are already members are very interested in expanding their efforts and using their model early learning centers as a demonstration sites for other centers in their area. Reaching more centers in these 19 communities would amplify the reach of this initiative so that many more children would reap the benefits of improved physical activity, nutrition, and outdoor learning practices by their center. Given the past
success of this initiative and its large potential to expand its impact, the BCBSNC Foundation has extended its partnership with NCPC and expanded the project from three years to six years. This next phase will allow Shape NC to focus its efforts on dissemination.

While these recent expansions have great potential to broaden the impact of this initiative going forward, the remainder of this report will focus on the changes observed to date, specifically the initiative’s impact on children, centers and communities.
Part 3: Impact on Children

Two of the seven Shape NC goals focused specifically on making a positive impact on the children enrolled at these model early learning centers. These goals were:

**The percent of children two to five who are enrolled in the model early learning centers and are provided with 90 minutes of active play time daily; and offered healthy fruits (fresh, frozen, or canned in juice), nutrient-dense vegetables (not potatoes, green beans, or corn), and lean protein daily will increase over time.**

**The percent of four year-old children enrolled in the model centers who are at a healthy weight (defined as below the 85th percentile) will increase over time.**

The 18 centers in cohorts 1 and 2 have made great strides in the provision of active play opportunities and healthy foods to children, but detecting an impact on child weight has been difficult. Progress toward each of these goals is reviewed in detail below. (Note: Because the cohort 3 center had not yet completed any assessments, children in that center are not included in the results.)

**Children Provided with Active Play and Healthy Foods**

Provision of active play and healthy foods was monitored through the Shape NC Center Assessment. There were notable increases in all target areas between baseline and September 2013. As of September 2013, 85% of children at the Shape NC centers received 90 minutes/day of active play time, 80% received two or more servings/day of fruit, and 89% were always served fruit that is fresh, frozen, or canned in juice. While 60% of children received two or more servings/day of vegetables, only 41% received 1 or more servings/day of dark green, red, or orange vegetables specifically. And, only 40% of children received 1 or more servings/day of lean meats.

![Figure 3.1 Percent of children receiving best practices](image)
In addition to the overarching goal of increasing the percentage of children provided with active play and healthy foods, year 3 milestones specified that these best practices should be reaching 60% of children in cohort 1 and 55% of children in cohort 2. Below is a detailed look at each of these practices, the changes observed between baseline and September 2013, and a comparison to the year 3 milestones.

**Active Play Time**
Centers far surpassed milestones for percent of children being provided with 90 minutes or more of active play. Seven of the eight centers in cohort 1 and eight of the 10 centers in cohort 2 were meeting this goal as of September 2013. This translates into 365 children in cohort 1 (93%) and 375 children in cohort 2 (78%). From September 2012, this represents a slight decrease in cohort 1 (one center no longer meeting goal), but a continued increase for cohort 2 (one additional center meeting goal). Between baseline and September 2013, cohort 1 centers have remained fairly stable in the provision of 90 minutes per day of active play to children; and cohort 2 centers have demonstrated steady increases.

**Healthy Fruits**
Centers also far exceeded milestones for percent of children being provided with fruit (not juice) two or more times per day AND for percent of children always being served fruit that is fresh, frozen, or canned in its own juice (and not in syrup). Seven of the eight centers in cohort 1 and eight of the 10 centers in cohort 2 were meeting the goal for servings of fresh fruit as of September 2013. This translates into 365 children in cohort 1 (93%) and 328 children in cohort 2 (69%). Even more children were being served fruit that is fresh, frozen, or canned in its own juice (without added sugar). All eight centers in cohort 1 and nine of the 10 centers in cohort 2 were meeting the goal. This translates into 392 children in cohort 1 (100%) and 379 children in cohort 2 (79%).

Since September 2012, there was a slight decrease in cohort 1 for the percent of children being provided with two or more servings of fruit (one center no longer meeting this goal), but a continued increase in cohort 2 (one additional center meeting goal). Since September 2012, the percent of children being served fruit that was fresh, frozen or canned in its own juice has been stable. While there has been some regression since the previous report, there are still notable increases in both best practices from baseline.
Nutrient-Dense Vegetables

Centers were slightly short of milestones for the percent of children being offered nutrient-dense vegetables one or more times per day. Nutrient-dense vegetables include those that are dark green, orange, red and deep yellow. While only four of the eight centers in cohort 1 provided one or more servings of nutrient-dense vegetables, five centers provided two or more servings of vegetables per day. Similarly in cohort 2, only four of the 10 centers provided recommended servings of nutrient dense vegetables, but six centers provided two or more servings of vegetables. This translates into 195 children in cohort 1 (50%) and 158 children in cohort 2 (33%) being provided with nutrient-dense vegetables. There has been a drop in both cohorts in the provision of nutrient dense vegetables since September 2012. Three fewer centers in each of the cohorts are no longer meeting this best practice. However, percent of children being provided nutrient-dense vegetables remains above baseline levels.
Lean Protein
Children being served lean meats was another area where centers did not fully meet year 3 milestones. As of September 2013, five of the eight centers in cohort 1 and four of the 10 centers in cohort 2 were meeting this best practices. This translates into 213 children in cohort 1 (54%) and 135 children in cohort 2 (28%). While the number of centers meeting these best practices has not changed since September 2012, there has been a decline in the absolute number and percentage of children being offered beans or lean meats one or more times per day due to shifting enrollment numbers. Notable improvements over baseline levels can still be observed.

Children at a Healthy Weight
Children’s height and weight were measured by the Hub Specialists in September 2011 (baseline), June 2012, September 2012, and June 2013. At each time period, Hub Specialists attempted to measure all four year old children currently enrolled at the center (given parents were willing to provide permission) as well as any older children who were still at the center and had been measured at previous time points. While ideally change in weight would be assessed using a single longitudinal cohort, such a cohort was not feasible given the fluctuation of children in and out of centers. However, the strategy employed did allow assessment of change using multiple cross-sectional samples as well as two cohorts (followed for 9 months). Height and weight data, along with child age and sex (boy or girl), were used to calculate BMI, BMI percentile, BMI z-score and assess whether or not children were at a healthy weight.

- **BMI**: BMI represents a ratio of a the child’s weight to height. Specifically, weight (measured in kilograms) is divided by height (measured in meters) squared.
- **BMI percentile**: BMI is plotted on the Centers for Disease Control and Prevention’s (CDC) BMI-for-age growth charts, for either girls or boys, to obtain a percentile ranking. The percentile indicates the relative position of the child's BMI among children of the same sex and age.
- **BMI z-score**: Another way to compare a child’s BMI to other children of similar age and sex is with BMI z-score. The z-score looks at how far away from the mean (above or below) a child is and it uses standard deviations as it’s unit of measure.
- **Normal weight**: Children are defined as normal weight if their BMI percentile for their sex and age is below the 85th percentile.
As seen in the figure 3.8, the percent of children at a normal weight was relatively stable between baseline and June 2013. While promising trends were observed, particularly between September 2011 (baseline) and June 2012 and again between September 2012 and June 2013, there were no statistically significant changes in any of the weight-related outcomes across the four measurement time points in either cross-sectional or cohort analysis.

Cross-sectional data on child weight and demographics are shown in Table 3.1 and calculated changes in child BMI, BMI percentile, and BMI z-score between time points (with p-values) are shown in Table 3.2. The most recent data show that 66% of children at these centers were normal weight, average BMI was 16.5 kg/m², average BMI percentile was 65.8%, and average BMI z-score was 0.58. The cross sectional data appeared to show a slight increase during each school year in the percent of children at a normal weight and very slight decreases in average child BMI percentile and BMI z-score (School Year 1 = September 2011 (baseline) to June 2012, School Year 2 = September 2012 to June 2013). However, none of the changes were statistically significant. There was also a slight increase in BMI percentile and BMI z-score observed between June 2012 and September 2012, which was probably due to an influx of new children, as evidenced by the large increase in the percent of children who were at the center for less than six months.

Table 3.1 Weight and Demographic Characteristics of Children

<table>
<thead>
<tr>
<th></th>
<th>School Year 1</th>
<th>School Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>June 2012</td>
</tr>
<tr>
<td># of children</td>
<td>n=252</td>
<td>n=273</td>
</tr>
<tr>
<td>% normal weight</td>
<td>65.7%</td>
<td>68.5%</td>
</tr>
<tr>
<td>BMI</td>
<td>16.6</td>
<td>16.5</td>
</tr>
<tr>
<td>BMI %ile</td>
<td>64.5%</td>
<td>63.2%</td>
</tr>
<tr>
<td>BMI z-score</td>
<td>0.59</td>
<td>0.51</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% White</td>
<td>63.5%</td>
<td>59.3%</td>
</tr>
<tr>
<td>% African American</td>
<td>19.8%</td>
<td>21.2%</td>
</tr>
<tr>
<td>% Hispanic</td>
<td>11.1%</td>
<td>13.9%</td>
</tr>
<tr>
<td>Enrolled at center only 6 months or less</td>
<td>59.5%</td>
<td>18.8%</td>
</tr>
</tbody>
</table>
Table 3.2 Cross-Sectional Analysis of Child Weight changes

<table>
<thead>
<tr>
<th></th>
<th>Baseline-June 2012</th>
<th>Sept 2012-June 2013</th>
<th>Baseline-June 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in BMI</td>
<td>-0.090 (p=0.62)</td>
<td>0.000 (p=0.99)</td>
<td>-0.047 (p=0.80)</td>
</tr>
<tr>
<td>Change in BMI %ile</td>
<td>-1.252 (p=0.62)</td>
<td>-0.260 (p=0.92)</td>
<td>1.281 (p=0.61)</td>
</tr>
<tr>
<td>Change in BMI z-score</td>
<td>-0.083 (p=0.41)</td>
<td>-0.040 (p=0.68)</td>
<td>-0.017 (p=0.86)</td>
</tr>
</tbody>
</table>

The cohort analysis included two cohorts of children – one of which was followed from September 2011 to June 2012 (n=153) and the second of which was followed from September 2012 to June 2013 (n=196). In both cohorts, BMI remained fairly constant at 16.6 kg/m² (cohort 2 experienced a very slight increase at timepoint 2 with average BMI of 16.7). BMI percentile decreased in the first cohort from 64.6% to 62.8%, but remained fairly constant in the second cohort changing from 67.9% to 68.0%. BMI z-score decreased in both cohorts, dropping from 0.59 to 0.52 in the first cohort and from 0.68 to 0.66 in the second cohort. None of these changes were statistically significant. Table 3.3 below reports the mean change observed between time points for BMI, BMI percentile and BMI z-score, with p values.

Table 3.3 Cohort Analysis of Child Weight Change

<table>
<thead>
<tr>
<th></th>
<th>Sept 2011-June 2012 n=153</th>
<th>Sept 2012-June 2013 n=196</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in BMI</td>
<td>0.030 (p=0.83)</td>
<td>0.027 (p=0.67)</td>
</tr>
<tr>
<td>Change in BMI %ile</td>
<td>-1.823 (p=0.32)</td>
<td>0.046 (p=0.97)</td>
</tr>
<tr>
<td>Change in BMI z-score</td>
<td>-0.075 (p=0.32)</td>
<td>-0.025 (p=0.61)</td>
</tr>
</tbody>
</table>

Data from these two cohorts of children were also used to explore the impact of changes in center practices on child BMI percentile. Changes in center practices were measured with the Shape NC Center Assessment, specifically the number of best practices being met across time points. Centers were categorized as making larger changes (improving the percent of best practices met by 30% or more over baseline) versus smaller changes (improving the percent of best practices met by <30% over baseline). In the first cohort (assessed between September 2011 and June 2012), BMI percentile decreased, on average, 1.5 points in children from centers making smaller changes compared to 8.5 points in children from centers making larger changes (p=0.21). While these results appeared promising, the reverse was observed in the second cohort (assessed between September 2012 and June 2013). BMI percentile decreased 1.5 points in children from centers making small changes and increased 1.4 points in children from centers making large changes (p=0.38).

While it is important to try to capture the impact of changes on children’s weight, there are several limitations of the child height and weight data which could impact the ability to detect changes. First, children this age are experiencing a period of rapid growth, and changes in body composition are part of this normal development. These natural changes make it difficult to detect changes in weight-related outcomes, particularly when there is no control group for comparison. Another limitation, particularly
for the cross-sectional analysis, was the changing characteristics (e.g., race) of the sample. National data show that race/ethnicity is a significant predictor of BMI, even in young populations. The fluctuations in the racial make-up of the sample may account for some of the changes in BMI observed in cross-sectional samples. Given the limitations of cross-sectional data, a cohort analysis was also attempted. However, it was not possible to follow a large cohort of children from baseline through to June 2012 because children often move on to school or another child care facility. Instead, we attempted to track two cohorts, but over a shorter period of time (~nine months each). The nine-month exposure may have been insufficient to produce changes in child weight. The cohort analysis was also limited by inconsistent participation across centers. Some centers were completely missing data at certain time points (affected data from two centers), and other centers turned in data for less than five children at some time points (affected data from four centers). Because the cohort analysis controlled for child care center, these centers did not provide sufficient data to be included in those analyses. While it was important to try to capture the impact of these environmental changes on children’s weight, the lack of significant findings may have several explanations.

Overall, data showed notable improvements in the percentage of children being provided with healthy foods and active play time; however, it was not possible to detect a statistically significant impact of these changes on child weight.
Part 4: Impact on Child Care Programs

Three of the Shape NC goals were focused on impacting the child care environment. These goals included one about improving centers’ environments, policies and practices, another on identifying centers that qualify to be demonstration sites, and a third about improving the health behaviors of the child care providers. Specifically, these goals were:

**At Least 19 Model Early Learning Centers Will Implement Physical Activity, Nutrition, and Outdoor Learning Environment Best-Practices for Children Two to Five, As Measured by the Shape NC Center Assessment.**

**At Least Five Shape NC Model Early Learning Centers Will Be Designated as Model Demonstration Sites in Nutrition, Physical Activity and Outdoor Learning Environments.**

**At Least Seventy-Five Staff in Ten or More Model Early Learning Centers Will Implement Staff Wellness Strategies and Achieve Improvement in at Least One of the Following Health Goals Set for the Project:**

- Participate in 30 minutes of physical activity three times per week,
- Eat three to five servings of fruits/vegetables (non-potato) most days of the week,
- Drink no more than one-12 ounce sweetened beverage/day, or
- Not smoke

Centers have made notable improvements in their physical activity, nutrition, and outdoor learning environment practices; and staff have made some progress on their own health behaviors. (Note: Because the cohort 3 center had not yet completed baseline assessments, that center is not included in the results.)

**Centers’ Physical Activity, Nutrition, and Outdoor Learning Practices**

The impact on child care programs was assessed with the Shape NC Center Assessment, which examined relevant policies and practices around physical activity, screen time, foods, beverages, and outdoor learning. Since baseline, centers have made considerable advancement across all areas. Most of the improvements occurred during centers’ first year in Shape NC (between baseline and September 2012). Continued efforts have maintained these improvements and made some additional progress in certain areas, such as outdoor play. As of September 2013, centers were meeting 74% of the best practices, on average. They are generally doing best in the areas of healthy beverages and screen time.
In addition to the overarching goal for best practices being met, year 3 milestones specified that cohort 1 centers should adopt 75% of best practices and cohort 2 centers should adopt 65% of best practices. Four of the eight cohort 1 centers met their milestone, and six of the 10 cohort 2 centers met their milestone (all six in cohort 2 met not just 65% of best practices but 75% or more). Below is a detailed look at each of the best practice areas, the changes observed between baseline and September 2013, and a comparison to the year 3 milestones.

**Physical Activity Best Practices**
The Shape NC Center Assessment evaluates 15 best practices related to Active Play. These best practices address active play opportunities, physical activity environment, provider behaviors, educational opportunities, and policies. Centers in cohort 1 adopted, on average, four additional active play best practices (increasing from eight to 12, and moving from 56% to 78%). Centers in cohort 2 met fewer best practices at baseline, but they had slightly larger improvements in the number of active play best practices adopted. These centers adopted, on average, seven additional active play best practices (increasing from four to 11, and moving from 27% to 71%). Cohort 1 centers saw the greatest improvements between baseline and September 2012, while increases were more gradual in cohort 2 centers. Figure 4.2 illustrates the steady increases observed since baseline in the number of best practices being met.
Screen Time Best Practices

The Shape NC Center Assessment evaluates ten best practices related to Screen Time. These best practices address the opportunities for screen time, provider behaviors, educational opportunities, and policies. Centers in cohort 1 adopted, on average, three additional screen time best practices (increasing from six to nine, and moving from 63% to 89%). Centers in cohort 2 had slightly fewer improvements in the number of screen time best practices adopted. These centers adopted, on average, two additional screen time best practices (increasing from six to eight, and moving from 58% to 84%). Centers in both cohorts met the majority of these best practices at baseline; however, gradual improvements were noted across the two years. Figure 4.3 illustrates the steady increases observed since baseline in the number of best practices being met.

Healthy Foods Best Practices

The Shape NC Center Assessment evaluates 31 best practices related to Healthy Foods. These best practices address foods served, feeding environment, menus, educational opportunities, and policies. Between September 2011 and September 2013, centers in cohort 1 adopted, on average, eight additional healthy foods best practices (increasing from 15 to 23, and moving from 50% to 73%). Centers in cohort 2 met fewer best practices at baseline, but had even greater improvements in the number of healthy food best practices adopted. These centers adopted, on average, 13 additional healthy foods best practices (increasing from eight to 21, and moving from 27% to 68%). The greatest improvements were observed between baseline and September 2012. After which, centers appear to successfully maintain the best practices adopted. Figure 4.4 illustrates the changes observed since baseline in the percent of best practices being met.
Healthy Beverages Best Practices
The Shape NC Center Assessment evaluates 12 best practices related to Healthy Beverages. These best practices address beverages served, provider behaviors, educational opportunities, and policies. Between September 2011 and September 2013, centers in cohort 1 adopted, on average, four additional healthy beverages best practices (increasing from six to 10, and moving from 52% to 84%). Centers in cohort 2 also had slightly large improvements in the number of healthy beverages best practices adopted. These centers adopted, on average, five additional healthy beverages best practices (increasing from five to 10, and moving from 45% to 80%). Cohort 1 centers saw the greatest improvements between September 2011 and September 2012, while increases were more gradual in cohort 2 centers. Figure 4.5 illustrates the steady increases observed since baseline in the number of best practices being met.

Outdoor Play and Learning Environment Best Practices
The Shape NC Center Assessment evaluates 18 best practices related to Outdoor Play and Learning. These best practices address the outdoor environment, provider behaviors, educational opportunities, and policies. Centers in cohort 1 adopted, on average, six additional outdoor play best practices (increasing from seven to 13, and moving from 36% to 72%). Centers in cohort 2 met fewer best practices at baseline, but they had slightly larger improvements in the number of outdoor play best practices being met. These centers adopted, on average, nine additional outdoor play best practices (increasing from three to 12, and moving from 19% to 66%). Cohort 1 centers saw the greatest improvements between September 2011 and September 2012, while increases were more gradual in cohort 2 centers. Figure 4.6 illustrates the steady increases observed since baseline in the number of best practices being met.
Across all areas the two cohorts made great improvements in their adoption of best practices between baseline and September 2013.

- Active play: increase of 50% in cohort 1 and 175% in cohort 2
- Healthy foods: increase of 53% in cohort 1 and 163% in cohort 2
- Outdoor play and learning: increase of 86% in cohort 1 and 300% in cohort 2

Even in areas where centers started out meeting over half of the best practices, there was still visible improvement.

- Screen time: increase of 50% in cohort 1 and 33% in cohort 2
- Healthy beverages: increase of 67% in cohort 1 and 100% in cohort 2

Model Early Learning Centers Action Plans
All centers created an action plan for improving their current policies and practices related to: Physical Activity, Nutrition, and Outdoor Play and Learning Environment. On average, centers in cohort 1 and 2 have created and fully implemented a similar number of goals in each of the areas. A more detailed description for each topic area follows.

For Physical Activity, centers in cohort 1 created, on average, 4.9 goals and fully implemented 3.0 of them. In comparison, centers in cohort 2 created, on average, 5.0 goals, and fully implemented 2.9. When rating their level of progress on these goals (on a scale of 1 to 6, where 1 = have not started, and 6 = fully implemented), the average rating was 5.2 for centers in cohort 1 and 5.0 for centers in cohort 2, indicating substantial progress had been made toward goals.

Among the fully implemented goals, children, child care staff, and parents were common groups being targeting. For children, goals often focused on increasing their opportunities for physical activity, both indoors and outdoors, as part of lessons, and including more structured activities. For child care staff, specific goals addressed provision of training and curriculum or resources that would support their efforts to increase child physical activity. Parents and families were also commonly mentioned, with activities that focused on providing training and education as well as family events that allowed for physical activity. In addition to these specific groups, environment and policy were also common targets.
within the active play goals. Goals targeting the environment often focused on providing visual supports (poster, books, etc.), portable equipment, and games to support children’s physical activity. Goals targeting policy varied greatly – some mentioned creating policies around physical activity or screen time very generally while others noted specific policies they wanted to develop.

For Nutrition, cohort 1 centers created, on average, 5.0 goals and fully implemented 3.9 of them. In comparison, cohort 2 centers created an average of 4.9 goals, and fully implemented 3.4. When rating their level of progress on these goals (on a scale of 1 to 6, where 1=have not started, and 6 = fully implemented), the average rating was 5.4 for centers in cohort 1 and 5.1 for centers in cohort 2, indicating substantial progress had been made toward goals.

Among the fully implemented goals, there was a clear focus on the foods and beverages served to children. Goals often specified providing fruits and vegetables, whole grain food, lean meats, meatless meals, 1% or skim milk; and limiting juice, high fat meats, and fried foods. Serving meals family style was also a common goal. Another common theme was providing education to providers, parents, and/or children. Policy was another common target of goals. At times policies goals were stated very generally, while others were very specific about topics that policies needed to address (healthy celebrations).

For Outdoor Learning Environment, centers in cohort 1 created, on average, 5.9 goals and fully implemented 2.7 of them. In comparison, centers in cohort 2 created, on average, 6.4 goals, and fully implemented 4.1. When rating their level of progress on these goals (on a scale of 1 to 6, where 1=have not started, and 6 = fully implemented), the average rating was 4.8 for centers in cohort 1 and the average rating for centers in cohort 2 was 4.9, indicating good to substantial progress had been made toward goals.
Among the fully implemented goals, there were specific aspects of the environment that were commonly targeted for improvement as well as activities to make better use of that environment. Specific improvements to the environment that has been targeted included adding more natural elements (trees and loose parts like leaves, mulch, nuts, pinecones, and sticks), creating or expanding gardens (raised bed, container, fruit/veggie, flower), adding play areas (learning and activity centers, stage, swing, seating, "stimulating elements" to enliven the character of the area), and creating pathways (bicycle/tricycle, walking). Some centers also mentioned adding visual displays inside of the improvements to the outdoor play and learning environment. Training was a common activity that was included in goals, with targets of the training including the center, child care providers, parents, and children.

**Designation as a Demonstration Site**

While all centers have made numerous improvements to their practices, the implementation team identified what they felt was the basic criteria that centers would need to meet in order to be considered ready to become a demonstration site. These criteria specified that a center must be meeting 75% or more of the Shape NC best practices, including 21 specific best practices that were seen as essential. These 21 specific best practices addressed areas of nutrition, physical activity, and outdoor play and learning.

- **Nutrition:** The nutrition best practices that were seen as essential specified that foods provided each day should include two or more servings of fruit (not juice); fruit that is always fresh, frozen or canned in juice; two or more servings of vegetables (not fried); one or more servings of dark green, red, orange or deep yellow vegetables each day; cooked vegetables that are always prepared without added fat; and one or more servings of beans or lean meats. Also, high fat meats, fried meats, and fried potatoes should be limited to less than once a week. In addition, drinking water should always be freely available to children both indoors and outdoors. And lastly, the center should have a written nutrition policy that addresses foods offered, the food environment, provider behaviors, and education.

- **Physical activity:** The physical activity best practices that were seen as essential specified that children should be provided each day with 120 minutes or more of active play time; two or more occasions of outdoor active play time, regardless of season; two or more occasions of structured or teacher-led physical activities. In addition, teachers should often encourage children to be active and join children in active play during play time. And lastly, the center should have written physical activity and screen time policies that addresses provider behaviors, education, indoor and outdoor active play opportunities, and screen time use.

- **Outdoor Play and Learning:** The outdoor play and learning best practices that were seen as essential specified that the outdoor learning environment should include 10 or more different types of play and learning settings; a curved and looped pathway that is connected to the building and is preferably five feet wide and a hard surface; a designed vegetable garden; and vegetables, fruit trees/vines, and nuts that are planted adjacent to the play area. In addition, produce from vegetable garden is used for meals and snacks at least two seasons a year.
As of September 2013, only one center met all criteria for becoming a demonstration site; however several additional centers were close to qualifying. Three centers met 75% of more of best practices, but were missing one of the 21 essential best practices. In addition, there were five centers that met 75% or more of best practices, but were missing just two or three of the essentials.

While only one center met all criteria for being a demonstration site, there were eight additional centers that were very close to qualifying.

Staff Health Behaviors
The impact on staff health behaviors was assessed using staff surveys. These surveys assessed behaviors related to physical activity, fruit and vegetables intake, sweetened beverage consumption, and smoking. The goal was for 75 staff to adopt one additional healthy behavior, and survey data have been able to show Shape NC was just one staff member shy of this goal. Seventy four staff members improved at least one of the targeted health behaviors, 20 of which improved on two or three health behaviors. As of September 2013, 55% participated in 90 minutes/week or more of physical activity, 65% ate three or more servings of fruits and vegetables each day, 76% drank less than one 12-oz sweetened beverage per day, and 87% of staff members were non-smokers. Additional details about the changes observed are described below.

To date, 336 staff members have completed at least one staff health behavior survey. However, we were able to track only 95 staff members from baseline to September 2013. An additional 32 staff joined the centers and provided data in September 2012 and September 2013. There were an additional 45 staff that left the center but still had data from September 2011 and September 2012. While cross-sectional snapshots represent the data from all 336, changes in staff behaviors reflect data from only the 172 for which we have multiple time points measured.

Physical Activity
On average, staff members participated in 135.2 minutes of physical activity per week in September 2013. This represents an increase from the 117.4 minutes per week reported in September 2011, but a decrease from the 151.4 minutes per week reported in September 2012. Based on these averages it may appear that staff always exceeded the Shape NC goal for getting 90 minutes per week of physical activity. However, at any given time point, the percent of staff actually meeting the goal was roughly 50%. Based on cross-sectional data, the percent of staff meeting the physical activity goal has risen slightly from 45% in September 2011, to 54% in September 2012, to 55% in September 2013. Tracking of individual staff in the cohort showed that 31 staff members had increased their physical activity so that they are now getting 90 or more minutes per week; but 20 staff members have decreased their activity so that they are no longer meeting the physical activity goal.
Fruits and Vegetables
On average, staff members were eating 3.8 servings of fruits and vegetables per day in September 2013. This represents a slight increase from the 3.3 servings per day reported in September 2011, and basically no change from the 3.9 servings per day reported in September 2012. Based on these averages it may appear that staff always exceeded the Shape NC goal for eating three to five servings per day of fruits and vegetables. However, at any given time point, the percent of staff actually meeting the goal was between 50% and 65%. Based on cross-sectional data, the percent of staff meeting the fruit and vegetable goal has risen slightly from 53% in September 2011, to 67% in September 2012, and declining slightly to 65% in September 2013. Tracking of individual staff in the cohort showed that 35 staff members had increased their fruit and vegetable intake over the past year so that they are now getting 3 or more servings per day; but 15 staff members have decreased intake so that they are no longer meeting the fruit and vegetable goal.

Sugar-Sweetened Beverages
On average, staff members were consuming 0.8 sugar sweetened beverages per day in September 2013. This represents a decrease from the 1.3 servings per day reported in September 2011 and the 1.4 servings per day reported in September 2012. Based on the most recent average intakes, it may appear that staff met the Shape NC goal of limiting intake of sweetened beverages to one servings or less per day. While not all staff actually met the goal, there have been improvements over time. Based on cross-sectional data, the percent of staff meeting the fruit and vegetable goal has risen steadily from 63% in September 2011, to 69% in September 2012, to 76% in September 2013. Tracking of individual staff in the cohort showed that 26 staff members had decreased their sugar sweetened beverage intake over the past year so that they are now consuming less than one serving per day; but nine staff members have increased their intake so that they are no longer meeting the sugar sweetened beverage goal.

Smoking
The majority of staff were already non-smokers in September of 2011. Later staff health behavior surveys show that there has been little change - the vast majority was still non-smoking in September 2012 (89%) and September 2013 (87%). Among those that do smoke, daily cigarette consumption appears to have declined from 21 cigarettes per day in September 2011, to 15 cigarettes per day in September 2012, to 7.5 cigarettes per day in September 2013. While average cigarette consumption has declined, tracking of individual staff in the cohort showed that seven staff members have picked up smoking while three staff members have become non-smokers.
Part 5: Impact on Local Communities

One of the Shape NC goals focused specifically on impacting local communities. This goal was:

**AT LEAST 19 MODEL COMMUNITIES WILL ENGAGE A DIVERSE SET OF STAKEHOLDERS TO DEVELOP AND IMPLEMENT LOCALLY-RESPONSIVE CHILDHOOD OBESITY ACTION PLANS.**

Local community partnerships have been very successful in creating local community action planning teams and working with those teams to create and implement an Early Childhood Obesity Prevention Action Plan. Details on the progress toward this goal are reviewed in detail below.

**Membership of Early Childhood Obesity Prevention Action Planning Teams**

Membership of these teams and their progress on action plans was monitored through an activity tracker completed quarterly by the executive director of each local partnership. Each of the local partnerships in cohorts 1 and 2 assembled and maintained an action planning team. As of September 2013, average size of these teams was 26 members; however, the number of members on these teams varied widely across partnerships. Smaller teams had nine or 10 members, while larger teams had 40, 50 or even 85 members. Trackers asked about involvement of 14 specific types of community groups and organization, and on average, nine of these groups and organizations were included on teams; thus illustrating good and diverse community engagement. Table 5.1 lists the groups from the community that were most commonly involved and not involved in these action planning teams.

<table>
<thead>
<tr>
<th><strong>Table 5.1 Percent of teams with representations from specific community groups</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Most commonly involved groups</td>
</tr>
<tr>
<td>Health departments (100%)</td>
</tr>
<tr>
<td>Child care programs (94%)</td>
</tr>
<tr>
<td>Cooperative extension (83%)</td>
</tr>
<tr>
<td>Local colleges or universities (83%)</td>
</tr>
<tr>
<td>Health care providers (72%)</td>
</tr>
</tbody>
</table>

Over time there was a slight increase in average team size, moving from 22 to 26 members. Note: When data was missing, previously reported size was carried forward. All teams had some degree of fluctuation in size; for most teams this was less than 25%. However, four teams increased membership by 50% or more, and two teams had membership drop by 50% or more.
The number and types of community groups and organizations involved in action planning teams appear to have remained stable over time. While trackers assessed involvement of 14 specific types of community organizations and groups, data showed that teams included, on average, about nine of them at most all time points, as illustrated in Figure 5.2. Note: When data was missing, previously reported involvement was carried forward. Most communities reported involvement by the Health Department, Child Care Programs, Cooperative Extension, Local Colleges and Universities, Health Care Providers, Parks & Recreation, and the School System. Few communities reported involvement by the Planning Department, Faith-Based Organizations, Other Local Government Offices, and Volunteer Organizations. Participation by community group is illustrated in Figure 5.3 below.

Figure 5.2 Number of different community groups represented on action planning teams over time

Figure 5.3 Participation by community groups over time
When reviewing individual community level data over time, the general trend is that the groups who are involved at the beginning remain engaged, and there are only a few cases where new groups join the team. This speaks highly of the local partnerships and their ability to identify and engage the key players in their community from the outset and to keep them engaged over time. Most communities also had between two to five community groups with sporadic participation. Sporadic participation appears to be less of an issue for teams with a large membership. A possible explanation for this is that large memberships may allow for multiple representatives from the same community group to be included on the team, thus making it more likely that at least one representative from each community group is present and engaged.

The majority of local partnerships (n=11 or 61%) reported that they had all necessary community groups involved on their action planning teams (based on September 2013 responses). For nine of these 11 partnerships, this satisfaction with community involvement had been fairly consistent over time – they had assembled and maintained a team that involved all necessary groups from the community. However, there were another seven partnerships that fairly consistently reported that they did not have all necessary groups involved.

Both size of the team and the specific community groups engaged probably influenced the partnerships’ satisfaction with community involvement, but it is challenging to identify clear trends.

- Partnerships with the largest teams felt they had all necessary groups involved; however, so did some of the partnerships with the smallest teams. While absolute team size may have been small, membership may still reflect high involvement of the community groups that are present and available in those communities.
- While certain community groups (i.e., health departments, child care programs, cooperative extension, local colleges and universities, and health care providers) were commonly represented on these teams, it is challenging to say which community groups were the most essential and drove feelings of satisfaction with community involvement. Across those seven communities that consistently reported not having all necessary community groups involved, the groups identified as missing were very specific to each community. For some, the problem was getting the group engaged – they were never recognized as being part of the team but their presence was recognized as missing. For other groups, the problem appeared to be inconsistent or inadequate engagement – they fluctuated on and off the team or they may have been on the team officially but not an active participant.

The stability in size and types of community groups involved in these local action planning teams is a great accomplishment. These Smart Start local partnerships had great success bringing together a wide variety of people and organizations, creating a shared vision, and working to achieve common goals.
**Action Plans for Improving Nutrition**

These action planning teams have created, on average, 3.9 goals related to nutrition and fully implemented 1.8 of them. Average ratings of progress toward these goals has increased greatly since baseline going from an average rating of 2.6 to 4.5 (based on a scale of 1-6, where 1=we have made no progress and 6=we have fully implemented the objective). These scores indicate that as of September 2013, teams feel that they have made “good” to “substantial” progress on their nutrition goals.

![Progress toward Nutrition goals](image)

**Figure 5.4 Progress toward Nutrition goals**

Within the goals that these teams have accomplished, there are key themes that emerge related to the targets, activities, and topics. Common targets (groups of individuals) that the teams worked to move to action included child care programs and providers, families, the community, doctors and other health care providers, and businesses. The activities they engaged in included partnering with other agencies, providing education and trainings, leading campaigns, disseminating information, and implementing curricula and programs (e.g., NAP SACC and Be Active Kids). The topic addressed in these efforts was often healthy eating (stated very generally); however, at times more specific topics were addressed such as breastfeeding, gardening, staff wellness, and menu development.

**Action Plans for Increasing Physical Activity**

Action planning teams have created, on average, 3.4 goals related to physical activity and fully implemented 1.8 of them. Average ratings of progress toward these goals has increased greatly since baseline going from an average rating of 2.8 to 4.5 (based on a scale of 1-6, where 1=we have made no progress and 6=we have fully implemented the objective). These scores indicate that as of September 2013, teams feel that they have made “good” to “substantial” progress on their physical activity goals.

![Progress toward Physical Activity goals](image)

**Figure 5.5 Progress toward Physical Activity goals**

Once again there were themes around targets, activities, and topics within the accomplished physical activity goals. Common targets that the teams worked to move to action were children, families, child
care programs and providers, the community, and local agencies. The activities they engaged in included increasing opportunities for physical activity (stated very generally), partnering with other agencies, identifying or supplying resources, providing education and trainings, disseminating information, and implementing programs (e.g., Be Active Kids). These goals were all designed to address physical activity; however, some efforts were clearly directed toward specific topics within physical activity such as outdoor learning, active living, family activity, and gardening.

**Action Plans for Improving the Built Environment**

Action planning teams have created, on average, 1.8 goals related to the built environment and fully implemented 1.2 of them. Average ratings of progress toward these goals has increased greatly since baseline going from an average rating of 2.9 to 5.1 (based on a scale of 1-6, where 1=we have made no progress and 6=we have fully implemented the objective). These scores indicate that as of September 2013, teams feel that they have made “substantial” progress on their built environment goals.

![Figure 5.6 Progress toward Built Environment goals](image)

Within the accomplished built environment goals, there was less variety in the themes that emerged around targets, activities, and topics. Child care centers had been the target for most built environment goals. Occasionally, efforts had been directed toward other targets like families or the community. The activities they engaged in included providing training and technical assistance, making physical improvements, identifying or supplying equipment and/or resources, and partnering or expanding partnerships. Efforts had generally been directed toward improving the built environment; however, some focused on gardening and active living topics specifically.

![Benefits of Action Planning Teams](image)

When looking across the entire project, the most commonly reported benefits of working on these teams were establishing linkages with other community organizations and leveraging new community resources (noted by all communities). The other commonly noted improvement was changes in policies (56% of communities).
Local community action planning teams have been very effective in implementing their Early Childhood Obesity Prevention Action Plans. They have accomplished several goals and are making good progress on others. They have made positive strides in their communities to improve nutrition, physical activity, and the built environment.
Part 6: Moving Forward

As noted in the Project Update, the Shape NC initiative was recently expanded. The BCBSNC Foundation has funded the continuation of this partnership with NCPC for an additional three years. However, the next phase of the project will focus on bringing the original Shape NC model to scale. The first three years have focused on cultivating relationships and building capacity in 19 communities. Much effort was dedicated to working with the 19 model early learning centers to adopt nutrition, physical activity, and outdoor play and learning best practices so that they could become demonstration sites. The next three years will build on this foundation, but focus on dissemination of messages and expanding the program’s reach to impact greater numbers of children across the state.

One of the major goals is to bring the Shape NC program to 240 additional child care centers. To accomplish this goal, the initiative will retain the four Shape NC regional hubs, which are housed in the Smart Start local partnerships of Buncombe, Edgecombe-Nash (Down East), Onslow, and Randolph counties. While each hub currently provides technical assistance to 3-4 additional counties, they will gradually expand the number of counties they serve to provide coverage to many more children and child care centers. Shape NC will also develop a team of 40 to 50 technical assistance staff specifically trained to disseminate the Shape NC messages to and share resources with new centers. One of the resources will be the child care demonstration sites. As the 19 model early learning centers become qualified as demonstration sites, these centers will serve as models to new centers in the surrounding community and offer on-site visits by other centers to see the nutrition, physical activity and outdoor learning environments in action and learn about how these improvements were accomplished.

Another major goal moving forward is to continue to move local communities forward in their changes to support early childhood obesity prevention. To accomplish this goal, Shape NC will use the ABLe Change Framework to guide its design and implementation of community change efforts. This framework employs three key strategies to ensure the integration of content and process efforts and effective mobilization of broad scale systems change: Systemic Action Learning Teams, Simple Rules, and Small Wins. This framework has been used successfully in Michigan’s Great Start Early Childhood Initiative to influence community change. Training, consultation, and coaching on use of this framework will be provided by the System exChange Team led by Dr. Foster-Fishman at Michigan State University.

There are several lessons learned from the past three years about working with child care centers that should be kept in mind as Shape NC moves into this next phase. One lesson is that motivated centers can achieve great improvements with a short period of focused effort, as evidenced by the sizable increases in best practices met during the first year (baseline to September 2012). However, maintaining improvements in center practices requires ongoing effort. Centers’ self-assessments of their practices over time have demonstrated improvements as well as backsliding. Those who reach best practices are not always able to maintain them. It is important to continually monitor centers practices for possible deterioration, so that technical assistance can be provided to move them back toward best practices.
Another lesson is that centers may need better tools and instruction regarding how to judge their compliance with best practices. There were several reports from Hub Specialists that their centers required assistance when completing self-assessments to make sure that they were applying similar standards to evaluate their current practices. This lesson has two important implications. First, centers qualifying as demonstration sites should undergo a more objective assessment of practices using a standard process agreed upon by the experts on the Shape NC implementation team to confirm compliance with all criteria. To date, all assessments have relied on self-report and there may be issues with response bias from center directors who have been the target of Shape NC efforts. Another implication is that improvements may be needed to the self-assessment tool to ensure more consistent interpretation of items. The Shape NC Center Assessment was an early attempt to update the original NAPSACC self-assessment tool and to incorporate outdoor play and learning items. Fortunately, Go NAPSACC has released fully updated self-assessments that cover five areas: child nutrition, breastfeeding and infant feeding, infant and child physical activity, outdoor play and learning, and screen time. These updated self-assessments have undergone rigorous review by child care providers and other early care and education professionals as well as careful editing for readability. Definitions have also been incorporated throughout for any terms that would benefit from clarification or specific examples. Future plans also call for the Shape NC technical assistance team to be trained on the use of the Go NAPSACC tools, including the self-assessments. All of these improvements should help promote more consistent interpretation of self-assessed practices.

There are also important lessons from the first three years about working in local communities. One lesson is that Shape NC should retain its flexibility to allow communities to take the Shape NC model and make it their own. As the activity trackers from local partnerships showed, the efforts by each community looked very different. Some communities formed very large teams, while others created much smaller teams. However, both small and large teams could be effective in making changes. Representation of various community groups and organizations often required key players like the health department, child care programs, cooperative extension, local colleges or universities, and health care providers. Beyond this short list of usual suspects, it was clear that communities had different ideas about what additional groups and organizations were needed on teams. Resources will vary from one community to the next and the flexibility of the Shape NC program allowed for communities to decide for themselves how best to pull these resources together to effect change. Use of the ABLe Change Framework should allow Shape NC to retain this flexibility, allowing community action planning teams to creatively pursue their own unique direction. However, it will also provide a certain level of structure and promote shared learning across teams.

While local communities were successful in forming action planning teams and accomplishing many of the goals they set, the built environment appeared to be a more challenging area that many teams opted not to address. Therefore, another lesson is that Shape NC may need to provide additional guidance about making improvements to a community’s built environment to support children’s healthy eating and physical activity habits. It would be worthwhile to interview teams that have not addressed the built environment in order to better understand the reasons why it was not included in their action
plan and any perceived barriers to tackling this issue. Teams that successfully improved their built
environments should also be interviewed to learn about strategies used to overcome common barriers.

The North Carolina Partnership for Children has positioned itself well to carry the Shape NC initiative
into its next phase. They have been diligent in their efforts to identify and respond to challenges. They
regularly review data collected from centers and local partnerships. They have also undertaken
supplemental assessments throughout the course of the project (including a mid-course review and a
supplemental survey of local partnerships) to ensure that they are directing their efforts most
appropriately. While there are undoubtedly challenges ahead, NCPC has tried to anticipate these issues
and incorporate new resources, including a larger Shape NC technical assistance team, expertise in use
of the ABLe Change Framework, and Go NAPSACC resources. The Shape NC initiative has already helped
19 communities make progress toward creating environments for children that support healthy eating
and physical activity habits, but this next phase is essential in learning how to bring this model to scale
so that it can be efficiently translated in other communities.
References


