Evaluation of School and Child-Care Sector Strategies in Delaware

Final Evaluation Report
## Table of Contents

Introduction.................................................................................................................................................3

Aim One: Enhancing data collection through NHPS’ Delaware Survey of Children’s Health (DSCH)..........................................................................................................................5

Aim Two: Enhancing NHPS’ methodological capacity in the school and child-care sectors.........................................................................................................................................................12
  School Sector ..............................................................................................................................................12
  Child-care sector .....................................................................................................................................19

Aim Three: Increasing NHPS’ capacity for communicating research and evaluation findings nationally........................................................................................................................................27
  NHPS dissemination of findings ..................................................................................................................27
  Nemours’ Office of Policy and Prevention dissemination of findings .............................................31

Next Steps ....................................................................................................................................................35

References .....................................................................................................................................................37
Introduction

Childhood overweight and obesity are of great concern to the public health field. From 2003–06, almost one-third (31.9%) of children and adolescents ages 2–19 years were at or above the 85th percentile of the 2000 body mass index-for-age growth charts. In response to the childhood obesity epidemic, Nemours Health and Prevention Services (NHPS), a division of Nemours, launched a multi-faceted child health initiative to promote healthy eating and physical activity among Delaware’s children. Informed by the social ecological model, NHPS’ theory of change focuses on reducing the prevalence of overweight and obesity, as measured by body mass index (BMI), in Delaware’s children ages 2–17.

5-2-1 Almost None
At the population level, NHPS’ efforts are primarily focused on spreading policy and practice changes that promote healthier environments. This work is supported by the 5-2-1-Almost None healthy lifestyle message:

- 5 - Five or more fruits and vegetables are consumed each day;
- 2 - Screen time (television, video games and recreational computer time) is limited to no more than two hours each day;
- 1 - Children are physically active for at least one hour each day; and
- Almost None - Sugar-sweetened beverages, specifically soft drinks, fruit drinks and sports drinks, are limited to no more than two servings per week.

Delaware has achieved significant policy and practice changes related to the 5-2-1-Almost None behaviors and to healthy eating and physical activity more generally. NHPS has developed and implemented a number of health promotion strategies within the school and child-care sectors of the population—where children live, learn and play. Since its creation in 2005, NHPS has continued to work collaboratively with school and district administrators, as well as child-care providers and policy-makers on strengthening existing policies and practices related to healthy eating and physical activity. It is expected that sector-specific efforts to create systems change will complement NHPS’ ongoing efforts to promote healthy eating and physical activity at the population level—thereby creating a unique opportunity to promote sustained behavior change and increase healthy outcomes among children and families in Delaware.

Purpose and Scope

In 2007, the Robert Wood Johnson Foundation (RWJF) awarded NHPS a grant (RWJF ID: 62078), entitled “Evaluation of School and Child-Care Sector Strategies in Delaware,” with the goals of enhancing existing data collection efforts in schools, child-care settings and at the population level. The three aims of this proposal include:

Aim One: Enhancing data collection through NHPS’ Delaware Survey of Children’s Health (DSCH) by aligning survey questions with other state and national instruments and increasing the capacity to oversample by key demographic and geographic locations;

Aim Two: Enhancing NHPS’ methodological capacity in the school and child-care sectors; and

Aim Three: Increasing NHPS’ capacity for communicating research and evaluation findings nationally.
To address Aims One and Two, this report summarizes findings from a number of data collection efforts during the five-year reporting period. We also discuss ways in which the dissemination of our research and evaluation findings have resulted in changes in our programmatic and policy work. To address Aim Three, we present an overview of how Nemours has leveraged various avenues, including publications, presentations and other modes of information dissemination, to communicate evaluation findings at local and national forums during the grant period.

The purpose of this report is two-fold: 1) to provide a summary of the evaluation enhancements that NHPS has implemented at the population-level and within the school and child-care environments and 2) to summarize findings from these evaluation initiatives over the five years of the grant.
Aim One: Enhancing data collection through NHPS' Delaware Survey of Children’s Health (DSCH) by aligning survey questions with other state and national instruments, and increasing the capacity to oversample key demographic and geographic locations

Purpose:
The Delaware Survey of Children’s Health (DSCH) serves as the primary data collection tool for monitoring population-level BMI trends and healthy eating and physical activity behaviors among Delaware children. This survey was developed by NHPS to collect statewide, population-level data from parents of children birth through age 17.

Methodology:
The DSCH was administered for the first time in 2006. The sampling design allowed for comparisons among four specific locations: the City of Wilmington, New Castle County excluding the City of Wilmington, Kent County and Sussex County. The sample was also designed to support comparisons among children of various age and racial groups (specifically, children ages birth through 5, 6 through 11, 12 through 17; and White, Black and Hispanic children) within each of the four sites. Non-Hispanic Black children were oversampled in New Castle County excluding the City of Wilmington, Kent County and Sussex County; and non-Hispanic Whites were oversampled in the City of Wilmington. The 2006 survey was largely based on the 2003 National Survey of Children’s Health (NSCH); in fact, approximately 75 percent of the questions were culled from this survey. The following data were collected: household demographics; neighborhood characteristics; parent-reported children’s healthy eating and physical activity, TV/computer use, beverage consumption behaviors; children’s social/emotional health; and parents’ recall of Nemours’ 5-2-1-Almost None healthy lifestyle message. In addition, children’s height and weight data were collected from parents and health care providers and adjusted to reflect the most recent and accurate measures of BMI. Data were obtained from 3,055 households and provided baseline information for NHPS’ healthy eating and physical activity campaign in the state of Delaware.

The 2008–09 reporting period focused on updating the DSCH to 1) include questions that could serve as reliable measures of healthy eating and physical activity behaviors and 2) to obtain a sample representative of the cultural and geographic diversity of Delaware’s children and families. To accomplish the first goal, NHPS first engaged in a series of communications with RWJF and the West Virginia and Arkansas RWJF grantees to identify ways to align questions in each state’s population-level survey. The purpose of this endeavor was two-fold. First, NHPS wanted to identify a set of questions that would provide novel information or enhance specificity. Second, aligning questions across the surveys presented opportunities for cross-state comparisons. Given that Arkansas had the most developed survey and implementation, NHPS reviewed their survey, in addition to other national instruments (e.g., Behavioral Risk Factor Surveillance System and Youth Risk Behavior Surveillance System), to identify appropriate and comparable questions. Accordingly, the DSCH was updated to obtain the new information in the Delaware sample. In order to obtain all desired configurations of age, sex, race/ethnicity and area, census data were used to stratify the household screening process. The 2008 DSCH gathered data from 3,081 households. Again, non-Hispanic Black children were oversampled in New Castle County excluding the City of Wilmington, Kent County and Sussex County; and non-Hispanic Whites were oversampled in the City of Wilmington.

The DSCH was again administered in 2011–12 and differed from the previous iterations in several ways. First, the 2011–12 DSCH oversampled Hispanic children at the state-level for the first time. To achieve
this, phone lines in areas with a high proportion of Hispanic households and those with Hispanic surnames were targeted. To facilitate the interview process, a Spanish version of the questionnaire and Spanish-speaking interviewers were made available. The oversampling effort resulted in 618 completed interviews with parents/guardians of Hispanic children and adolescents – almost twice the number obtained from each of the previous administrations. Second, several new sections were added to accommodate NHPS’ broadened, holistic approach to children’s health. The new sections focused on sleep, breastfeeding, and social and emotional health. The social and emotional health section included adaptations of several nationally-recognized and validated scales (e.g., Devereux Early Childhood Assessment, Social Emotional Assets and Resilience Scale, and Strength and Difficulties Questionnaire) that examine a child’s social and emotional competencies, self-regulation, and relationships with parents and peers. Finally, a cellular phone sample was piloted during the 2011–12 administration. A total of 30 interviews were conducted via cell phone in the last stage of the data collection. A monetary incentive proved to be very effective in increasing the response rate of cell phone users.

**Results:**
Following data collection from the third iteration of the DSCH in 2011–12, NHPS analyzed the data for trends in BMI and health behavior indicators. Analysis on BMI trends and associations are presented in this report.

**Body weight:** Definitions for childhood obesity, overweight, normal weight, and underweight are based on the Centers for Disease Control and Prevention (CDC)’s growth charts (2000):

- **Obese** = body mass index (BMI) at or above the 95th percentile
- **Overweight** = BMI from the 85th up to the 95th percentile
- **Normal weight** = BMI from the 5th up to the 85th percentile
- **Underweight** = BMI under the 5th percentile

Childhood overweight affects every community in Delaware. Over one-third of Delaware children have been classified as overweight or obese in all demographic groups in all iterations of the DSCH. In 2006, 36.6 percent of children ages 2 to 17 were overweight or obese. In 2008, the combined percentage of overweight and obese children reached 39.7 percent. This increase was not statistically significant. These results were perceived with cautious optimism; they suggested that the steady increase in overweight and obesity rates over the last three decades were finally slowing down. Results from the 2011–12 DSCH revealed that the combined rate of overweight and obesity remained unchanged from the 2008 rate of 40.0 percent (see Figure 1). Considering the three data points, we can state with confidence that, between 2008 and 2011–12, the obesity trend among Delaware children reached a plateau.
Over the last three iterations, the prevalence of overweight was relatively stable, slightly decreasing from 17.6 percent in 2006 to 17.3 percent in 2008 and to 17.1 percent in 2011. During the same time period, the prevalence of obesity increased from 19.0 percent in 2006 to 22.4 percent in 2008 and to 23.0 percent in 2011. Although the changes in the obese population are not in the desired direction, it is important to note that changes across all three iterations in the overweight and obese categories were not statistically significant.

**Body weight by age group:** The sample size of the DSCH allows for comparisons of various indicators by geographic location, racial and ethnic group, age group and sex. The percentage of overweight and obese children by age group across the three time points is presented in Figure 2.
Additional highlights of the results include the following:

- The percentage of overweight and obese children ages 2 through 5 increased from 27.6 percent in 2006 to 35.7 percent in 2008 and to 38.8 percent in 2011. The increase between 2006 and 2008 was marginally significant ($p=0.0683$), while the change from 2008 to 2011 was not significant.

- The percentage of overweight and obese children ages 6 through 11 increased significantly ($p=0.0074$) from 37.1 percent in 2006 to 47.5 percent in 2008 and then decreased to 43.1 percent in 2011. The decrease between 2008 and 2011 was not statistically significant.

- The prevalence of overweight and obesity among children ages 12 through 17 decreased from 41.4 percent in 2006 to 35.2 percent in 2008 and then slightly increased to 37.7 percent in 2011. The decrease between 2006 and 2008 was marginally significant ($p=0.0843$), while the increase from 2008 to 2011 was not significant.

Body weight by race and ethnic group: Figure 3 illustrates the changes in the prevalence of overweight and obesity across racial and ethnic groups. The data show that the prevalence of overweight and obesity increased in all the racial and ethnic groups between 2006 and 2008. The increase in the prevalence of overweight and obesity was highest among Hispanic children (36.5% to 46.2%), followed by Black children (42.5% to 47.4%). The increase was smallest among White children (35.2% to 37.0%). After controlling for age and sex differences, all of these increases were not significant. It is important to note that the sample of Hispanic children was relatively small in 2006 and 2008 DSCH iterations, thereby reducing the power to test the differences between these two data points.

Figure 3. Percentage of overweight and obese children ages 2–17 by race and ethnicity: 2006–11

Between 2008 and 2011, the changes in the percentage of overweight and obese children among the different racial and ethnic groups varied in direction. The prevalence of overweight and obesity increased among Hispanic children (46.2% to 50.0%) and among White children (37.0% to 39.1%). Neither increase was statistically significant. The opposite trend was observed among overweight and obese Black children: the percentage decreased substantially from 47.4 percent to 39.4 percent. The change was marginally significant ($p=0.0795$).
Body weight by sex: Sex differences in the overweight and obese categories continued to be pronounced in 2011. After a slight decrease in the prevalence of overweight and obesity among males from 38.3 percent in 2006 to 37.5 percent in 2008, a substantial increase to 44.2 percent was found in 2011. This increase was marginally significant ($p=0.0730$). A reverse trend was observed among female children: after a significant increase ($p=0.0223$) in the prevalence of overweight and obese female children between 2006 and 2008, from 34.7 percent to 41.7 percent, a significant decrease to 35.7 percent ($p=0.0094$) was experienced in 2011 (see Figure 4).

Figure 4. Percentage of overweight and obese children ages 2–17 by sex: 2006–11

Body weight by availability of medical coverage: The 2011 DSCH questionnaire collected data on the type of medical coverage available for the respondent’s child. These data allow NHPS to establish a meaningful association between insurance type and weight category of the child and provide insights on the relationship between the socioeconomic status of the family and body weight of the child. Data from the 2011 iteration of the DSCH showed that for children ages 2 through 17, there was a significant ($p=0.0092$) association between the child’s weight status and his or her insurance type (see Figure 5). The percentage of overweight and obese children enrolled in the State Children’s Health Insurance Program (S-CHIP) (53.4%) was significantly ($p=0.0107$) higher than the percentage of children enrolled in private health insurance (36.3%). The same was true for the children insured by Medicaid: the percentage of overweight and obese children enrolled in Medicaid (47.4%) was significantly higher ($p = 0.0124$) than the percentage enrolled in private health insurance. There was no significant difference between children without any insurance and those with private insurance. The relatively small number of children in the no insurance group reduced the power of the statistical analysis.

Figure 5. Percentage of overweight and obese children ages 2–17 by insurance type: 2011
**Parent perceptions of their child’s body weight:** An alarming statistic was found throughout all iterations of the DSCH: close to 80 percent of parents with an overweight child considered their child to be in the normal weight zone, and over 55 percent of parents with an obese child considered their obese child to be in the normal weight category (see Figures 6 and 7). Unfortunately, the survey instrument was not designed to shed light on the explanations behind this fact. However, a social misconception of such magnitude and its associated consequences should be analyzed further and subsequently addressed.

**Figure 6. Percentage of parents who consider their overweight children ages 2–17 to be ‘normal weight’ by sex: 2006–11**

![Chart showing percentage of parents who consider their overweight children to be normal weight by sex from 2006 to 2011.](chart)

**Figure 7. Percentage of parents who consider their obese children ages 2–17 to be normal weight by sex: 2006–11**

![Chart showing percentage of parents who consider their obese children to be normal weight by sex from 2006 to 2011.](chart)

**Impact of evaluation data on policy and practice:**
The DSCH is the only data source that provides information on the overweight and obesity prevalence rates among populations in different demographic strata (age, location, race/ethnicity and sex) in Delaware. It also contains data collected from a parent or a legal guardian on various demographic and health characteristics, health related behaviors and environmental variables related to Delaware’s children. The unique combinations of variables in the survey permit in-depth studies and exploratory analyses.

Data from the DSCH have been shared with various organizations and partners at state and local levels. Data from the survey are made publicly available through publication of “Kids Count in Delaware” – a
project funded by the Annie E. Casey Foundation, with support from the University of Delaware and the State of Delaware—to monitor the conditions of families, children and individuals in the community.

In addition, DSCH data were used to inform state policy on the built environment. DSCH data on neighborhood characteristics were used in the NHPS policy brief, “Investment in Parks and Recreation is Necessary for Children’s Health,” authored by Patti Miller and Marina Kaplan (2009), to advocate and promote the introduction of zoning and building codes. This policy brief was then distributed to Delaware state, county, and city parks directors; administrators; and staff and policy advocates for promoting investment in parks and recreation. Data from the DSCH were also included in recommendations provided to the Division of Public Health. These recommendations were included in the Preliminary Land Use Service: pre-application and review process required by the Office of State Planning Coordination for major developments and land use plans in Delaware. Finally, demographic and behavioral and health data from the DSCH have also been used in grant proposals to demonstrate the need for programs and policies.
Aim Two: Enhancing NHPS’ methodological capacity in the school and child-care sectors

School Sector
The purpose of Aim Two is to enhance NHPS’ methodological capacity in the school sector (as well as in the child-care sector, which will be discussed in the next section). The initiatives described below enabled NHPS to collect system-level and student-level data to evaluate NHPS’ initiatives aimed at increasing and monitoring physical activity.

Initiative One: Fidelity of implementation of Coordinated Approach to Child Health

**Purpose:**
NHPS was awarded a three-year Carol M. White Physical Education Program (PEP) grant in the summer of 2009 to support the implementation of 150 minutes of moderate to vigorous physical activity (MVPA) in Delaware elementary schools. Using grant PEP funds, NHPS and the Delaware Department of Education (Delaware DOE) implemented the Make School a Moving Experience (MSAME) program in Delaware public schools. Participating schools received technical assistance, professional development, evidence-based programs and materials, and participated in networking opportunities to facilitate implementation of MVPA. The MSAME evaluation included two major evaluation studies: 1) a comprehensive evaluation of the fidelity of implementation (FOI) of Coordinated Approach to Child Health (CATCH) and 2) an evaluation of policies and practices in schools as reported by elementary school principals (described in the next subsection, Initiative Two: School Health Profiles).

A substantial proportion of Delaware’s middle and elementary schools have received training, materials and equipment to implement the evidence-based CATCH program. CATCH is based on the Coordinated School Health Model, which aims to help children adopt healthy eating and physical activity habits. It also includes components for physical education, classroom health education, food service and family engagement. In addition, CATCH addresses all six of Delaware’s standards for physical education through a comprehensive approach that teaches age-appropriate motor skills, movement concepts, spatial awareness and teamwork. The effectiveness of CATCH has already been demonstrated, however, anecdotal observations from the field suggested that CATCH program implementation has occurred with varying degrees of fidelity and follow-up. Therefore, a program implementation evaluation was designed to assess the fidelity of CATCH implementation in Delaware schools.

**Methodology:**
A non-experimental evaluation design was used to assess CATCH FOI. The design included two different components: direct observations of physical activity during physical education classes at a sample of MSAME schools using the System for Observing Fitness Instruction Time (SOFIT); and online surveys of Physical Education (PE) teachers and cafeteria managers at MSAME schools.

**SOFIT:** SOFIT is a valid and reliable sampling observation methodology that provides information about Physical Activity program implementation by measuring student activity, lesson context and teacher behavior during PE class time.

**Online Surveys:** The second component of the CATCH FOI evaluation was the administration of online surveys to PE teachers and cafeteria managers in 74 MSAME schools. The surveys collected data on daily physical activity opportunities for students; PE teacher’s attitudes towards child nutrition, health and physical activity; CATCH implementation in PE classes; coordination across school settings; facilitators...
and barriers to CATCH implementation; access to and use of CATCH materials; and percentage of PE lessons spent on CATCH objectives. Cafeteria managers were also asked to report on nutrition program implementation.

**Results:**

**SOFIT:** For school year 2011–12, observations were conducted in 59 elementary schools during early spring 2012 and in 56 of the same schools in late spring 2012. A total of 244 elementary school PE classes were observed (127 PE classes in early spring and 117 PE classes in late spring). Due to scheduling difficulties, more observations occurred in grade 3 and grade 4 than in grade 5. The SOFIT results suggested that CATCH was implemented appropriately in PE class in MSAME schools. For school year 2011–12, observation results suggested that 3rd- and 4th-grade students in MSAME schools were meeting the recommended goal of MVPA for more than 50 percent of PE class time (53.69% of 3rd-grade students and 53.19% of 4th-grade students). Additionally, 48.35 percent of 5th-grade students almost met the goal (see Figure 8).

**Figure 8: Average percentage of observation period spent in activity by grade: 2011-12**

![Figure 8](image1.png)

Results for lesson context suggest that across grades, considerably more time is spent in active content activities (e.g., fitness, skills and drills and game play) than in non-active content activities (e.g., management and knowledge). For example, in grade 3, 64.22 percent of observed class time was spent in active content (see Figure 9).

**Figure 9: Average percentage of observation period spent in active and non-active content: 2011-12**

![Figure 9](image2.png)
Online Surveys: Online survey response rates for PE teachers from MSAME elementary schools were satisfactory (43 of 74 surveys were returned [58.1%]). Results suggested that PE teachers had positive attitudes about CATCH and that FOI was strong in MSAME schools. PE teachers reported that schools offer a number of activities outside of PE that keep students active during the school day. For example, most schools provide structured recess (69.8%) and implement Take 10!, an evidence-based program designed to integrate physical activity into classroom lessons (77.4%). PE teachers also reported using the CATCH educational materials (e.g., 97.5% reported that they use or will use the K–2 CATCH PE activity box; 97.4% use the grades 3–5 activity box; and 72.2% use the PE guidebook).

Responses suggested that most of the PE teachers use the recommended instructional management techniques always or most of the time. PE teachers reported that an average 43.3 percent of PE lessons taught at their school integrate CATCH activities. They also reported that CATCH implementation is easy and helps them meet PE goals (see Figure 10).

Figure 10: PE teacher perceptions of CATCH implementation (n=42)

The response rate for cafeteria managers was low; only 23 out of 74 surveys were returned (31.1%). Most cafeteria managers reported that they do not have and/or do not use CATCH materials. However, many reported that they are implementing important nutrition education and health promotion initiatives in the cafeteria. For example, 78.3 percent reported using menus with nutrition messages or games; 82.6 percent offer students mini-servings or complimentary samples of new healthy foods; 73.9 percent invite parents and other special visitors (e.g., grandparents, etc.) to lunch; 90.9 percent encourage staff and the principal to eat lunch in the cafeteria; 72.7 percent display signs with healthy eating messages or other CATCH messages on the tray line; 73.9 percent offer student taste-tests and 73.9 percent give demonstrations and/or healthy snacks at after-school events. However, there are missed opportunities. For example, only 33.3 percent reported labeling healthy and non-healthy foods on menus and only 22.7 percent reported that cafeteria staff members assist teachers with nutrition lessons.

In general, cafeteria managers agreed that children's health, nutrition and physical activity are important for children's current and future health and well-being. Over 60 percent of cafeteria managers reported that they believe that nutrition staff members play an important role in encouraging healthy eating and participating in school health efforts. Cafeteria managers also reported that their schools and districts implement a number of healthy eating policies, including policies that provide students at least 20 minutes to eat (95.7%) and regulate foods brought to school for lunch (85%).
Impact of evaluation data on policy and practice:
Over the past three years, NHPS has successfully engaged over 70 percent of Delaware’s public elementary schools to increase physical activity through MSAME. CATCH FOI evaluation results were shared with teachers and administrators from MSAME schools and districts to encourage them to continue implementing the programs and promoting physical activity in schools. This feedback, in addition to support and technical assistance offered by NHPS, helped partner schools make significant progress toward integrating 150 minutes of physical activity into the school week.

The results of this CATCH FOI evaluation have also been used to inform NHPS’ programmatic work with schools. For example, the results of this evaluation were used to improve the structure, format and focus of the CATCH training curriculum that will be used in future trainings. In addition, the results were used to plan an integrated school-parent-community model focused on promoting healthy eating via social marketing, food accessibility, promotion and education.

Initiative Two: School Health Profiles

Purpose:
The School Health Profiles (SHP) is a system of surveys designed to assess school health policies and programs and to monitor the implementation of school health education requirements and content; physical education and requirements; school health policies related to HIV infection/AIDS, tobacco-use prevention, nutrition, asthma management activities; as well as family and community involvement in school health programs. NHPS, the Delaware DOE and the University of Delaware developed the Elementary School Principal Survey (SHEP) to collect data from principals of Delaware public elementary schools every two years beginning in 2010. SHEP is based on the CDC’s School Health Profile survey.

Methodology:
As reported in the 2011 Annual Report to RWJF, the 2010 Delaware SHEP was administered to 118 school principals either electronically or by phone during the fall semester of the 2010–11 school year (from August 2010 to December 2010). In total, 84 eligible school principals completed the survey (response rate 71%).

Descriptive statistics were run for SHEP content to examine the implementation of health policies and programs in Delaware elementary schools (e.g., general policies and programs; PE and physical activity; nutrition-related policies and practices; health education, asthma, and family/community involvement).

Results:
Over 80 percent of the schools have healthy food sold in school cafeterias and offered at school celebrations. Unhealthy food such as candy, sugary beverages and fast-food meals are not promoted in most schools.

Although most respondents reported that their school assigns staff to teach health education, nearly two-thirds of the schools do not meet the minimum state requirement for number of hours of health education instruction. Based on these results, the health education curriculum provided by schools includes only the core health topics. However, more than 30 percent of the schools do not include the required drug and alcohol prevention content in the curriculum. These findings suggest that policies and programs that promote health education in schools need more consistent implementation.
Results suggest that a majority of Delaware elementary schools require at least one PE class per week. Many schools also provide students with physical activity opportunities outside of PE (see Figure 11). Over 80 percent of schools provide at least 20 minutes of recess and almost 40 percent offer structured activities during class time.

**Figure 11. Percentage of physical activity opportunities outside of physical education classes**

![Percentage of physical activity opportunities outside of physical education classes](chart)

Associations between MSAME participation and school policies and practices were examined using chi-square test. Results showed that schools enrolled in MSAME are more likely than those not enrolled in MSAME to provide various physical activity opportunities beyond PE class (see Table 1). These findings highlight the large impact that this program has had on participating schools.

**Table 1. Percentage of schools implementing physical education- and physical activity-related policies and practices**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>MSAME schools (%)</th>
<th>Non-MSAME schools (%)</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation of <em>Take 10!</em></td>
<td>100.0</td>
<td>46.4</td>
<td><em>p</em>&lt;0.0001</td>
</tr>
<tr>
<td>Morning exercises</td>
<td>52.6</td>
<td>23.1</td>
<td><em>p</em>&lt;0.05</td>
</tr>
<tr>
<td>Walking programs</td>
<td>57.9</td>
<td>29.2</td>
<td><em>p</em>&lt;0.05</td>
</tr>
<tr>
<td>Structured PA during class time</td>
<td>63.2</td>
<td>32.3</td>
<td><em>p</em>&lt;0.05</td>
</tr>
<tr>
<td>Having three or more PA opportunities aside from PE classes</td>
<td>63.2</td>
<td>24.6</td>
<td><em>p</em>&lt;0.01</td>
</tr>
</tbody>
</table>

**Impact of evaluation data on policy and practice:**

These data were used to evaluate the impact of the MSAME program on physical activity- and physical education-related policies and practices. Associations between MSAME participation and school policies and practices were shared with teachers and administrators from MSAME schools and districts to encourage them to continue implementing the programs and promoting physical activity in schools. Results have also been included in policy briefs to support the implementation of 150 minutes of physical activity in elementary schools.
Initiative Three: FitnessGram®

**Purpose:**
FitnessGram® is a health-related fitness assessment tool developed by the Cooper Institute. The tool uses criterion-referenced standards, called Healthy Fitness Zones (HFZ), to define healthy levels of physical fitness. The Delaware DOE and NHPS collaborated to analyze and monitor Delaware students’ physical fitness levels as measured by FitnessGram®.

**Methodology:**
The Delaware DOE requires annual testing of students (in grades 4, 7 and 9/10) on five FitnessGram® tests (PACER, Curl-up, Trunk Lift, Push-up, and Back Saver Sit and Reach). Data from these tests were collected, cleaned and analyzed. The total number of usable cases was 40,979 for school year 2010–11 (from August 2010 through June 2011). Students’ physical fitness levels were classified into six levels based on how many of the five tests they achieved within the HFZ (0 of 5, 1 of 5, 2 of 5, 3 of 5, 4 of 5 and 5 of 5). Data were analyzed using SAS®9.3. The General Linear Model was used to examine the association and relationships between students’ physical fitness levels, Delaware Comprehensive Assessment System (DCAS) scores (math and reading performance), attendance and discipline-related behaviors such as suspension rates while controlling for sex, race/ethnicity and other factors.

**Results:**
**Relationship between fitness levels and academic achievement:** The analysis shows a significant \( (p<0.0001) \) linear relationship between academic achievement scores and students’ fitness levels after controlling for the students’ sex, race, family income and school district. DCAS reading and math performance levels were selected as the indicators for academic achievement. Although there are four DCAS performance levels (well below standard, below standard, meets standard and advanced), the graphs below (see Figures 12 and 13) only use data from the advanced and well below standard categories to illustrate the relationship between academic achievement and fitness levels.

Figures 12 and 13 show that, among 7th-graders, as the number of fitness levels achieved increases, the percentage achieving advanced performance for math and reading also increases. On the other hand, as the number of fitness levels achieved decreases, the percentage of students achieving well below standard performance decreases. Analysis of reading and math performance among 4th-graders and 9th/10th-graders revealed the same associations, although the slopes were slightly different.

**Figure 12. The percentage of 7th-grade students achieving advanced and well below standard performance on DCAS math test, school year 2010–11 (n=8,183)**
Figure 13. The percentage of 7th-grade students achieving advanced and well below standard performance on DCAS reading test, school year 2010–11 (n=8,148)

Relationship between fitness levels and days of suspension: The results show that there is a significant difference ($p<0.0001$) among the average number of days students (all grades combined) are suspended per year and the number of HFZ achieved, after controlling for the students’ school, sex, race and family income. Figure 14 illustrates this inverse relationship. The average number of suspension days was 1.8 for students who did not achieve any HFZs, 1.3 for students who achieved only one HFZ and less than one for students who achieved three or more HFZs.

Figure 14. Mean suspension days by number of HFZs achieved for all grades, school year 2010–11 (n=40,970)

Relationship between fitness levels and student attendance: The results show that there is a significant difference ($p<0.0001$) among the average number of days students (all grades combined) attended school per year and the number of number of HFZs achieved, after controlling for the students’ school, sex, race and family income. Figure 15 illustrates this inverse relationship. At the state-level, the average number of attendance days was only 140 for students who did not achieve any HFZs compared to 164 for students who achieved five out of five HFZs – a difference of 24 school days.
A similar trend for the mean number of attendance days holds true for students in grades 4, 7 and 9/10 in school year 2010–11: as the number of HFZs achieved by a student increases, the average number of days students attend school also increases. It is important to note that for 9th-/10th-graders, the average number of attendance days was only 131 for students who did not achieve any HFZs compared to 166 for students who achieved five out of five HFZs – a difference of 35 school days.

**Impact of Evaluation Data on Policy and Practice:**
The findings from the FitnessGram® evaluation have been used to support stakeholders and Nemours in advocating for a policy requiring 150 minutes of physical activity in Delaware elementary schools. In addition, the results were shared with teachers and administrators from Delaware schools and districts to encourage them to continue implementing the programs and promoting physical activity in schools.

**Child-care sector**
Over the past several years, NHPS’ programmatic work in the child-care sector has focused on building collaborative partnerships with state agencies and child-care providers to promote HEPA in child-care centers throughout the state. In addition, NHPS has designed and implemented interventions aimed at creating policy and practice changes among Delaware child-care providers to support and encourage healthy eating and physical activity among children in child-care settings. These interventions include regulatory changes through the Office of Child Care Licensing (OCCL) in the areas of healthy nutritional standards, mandated time for moderate to vigorous physical activity, and reduced screen time. NHPS also supported the Delaware DOE’s Child and Adult Care Food Program (CACFP) regulations on nutrition and meal standards. The following section highlights how NHPS has enhanced its evaluation capacity in the child-care environment, including the Child Care Learning Collaborative (CCLC), the Delaware Child Care Provider Survey (DCCPS) and the Team Nutrition Training.

**Initiative One: Child Care Learning Collaborative**

**Purpose:**
NHPS implemented the CCLC with child-care providers and staff to promote healthy eating and physical activity in the child-care environment. Through the collaborative, NHPS disseminated resources that promote best practices for implementing nutrition and physical activity standards in the child-care
environment. The learning collaborative and train-the-trainer model was piloted at four large child-care centers in 2005 and formally implemented in 28 centers starting in 2007 and 2008.

**Methodology:**
Several qualitative and quantitative data sources were analyzed to evaluate the effectiveness of this model, including pre/post-intervention learning surveys; pre/post-intervention observations; focus groups with center directors and teachers; and self-report data from the Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC) survey. Additionally, child-care center wellness policies were assessed for comprehensiveness and strength using an adapted version of the Pre-School Wellness Policy Evaluation Tool. Enhancements to increase coding efficiency and decrease redundancy were made to the methodology used for the third and last round of the direct observations conducted in February 2010. Findings from the third round of direct observations helped to determine the sustainability of changes in staff-level practice. Trained observers visited two classrooms from each participating center and observed a number of classroom-level practices and behaviors, including the content of meals served, the frequency and intensity of physical activity provided to children, and staff behaviors (e.g., sitting with the children and eating the same food, etc.).

**Results:**
The results indicate that healthy eating and physical activity practices significantly improved in 81 percent of the child-care centers (see Figure 16). Healthy eating practices significantly improved in the following areas: not serving fried foods; serving lean meat; serving reduced fat milk; staff not eating less healthy foods in front of children; staff encouraging children to eat healthy foods; and staff not using food to reward behavior. Physical activity practice changes included doubling the number of free-play physical activity events; increasing teacher-led physical activity; increasing the quality of the physical activity environment; and decreasing sedentary time and screen time.

**Figure 16. Healthy eating and physical activity mean profile changes in participating child-care centers (n=28)**

Results from the third round of direct observations showed promising findings in terms of sustained staff-level practice changes (see Figure 17). For example, the proportion of classrooms serving two or more fruits each day between Time 2 (67%) and Time 3 (70%) remained statistically unchanged, when controlling for fruits provided by parents. Significant improvements were made in terms of vegetable servings: 50 percent of children received two or more servings in Time 3, compared to 25 percent of children in Time 2. Data showed that the proportion of classrooms serving the recommended type of
milk to children over the age of two (i.e., skim milk) remained statistically unchanged between Time 2 (92%) and Time 3 (90%). Lastly, the proportion of classrooms that served whole grains increased from 25 percent in Time 2 to 60 percent in Time 3, when controlling for food provided by parents.

Figure 17. Servings of selected food groups in observed classrooms

In addition to the many promising findings, the results also highlighted a number of opportunities where NHPS could focus technical assistance and training efforts. For example, the proportion of classrooms serving lean meats decreased to 30 percent and the proportion of classrooms serving high-fat meats increased between Time 2 (17%) and Time 3 (60%). These results may suggest a need for more child-care provider training on standards for serving meats and meat alternates.

Impact of evaluation data on NHPS policy and practice:
Using findings from this evaluation, NHPS and the University of Delaware Institute for Excellence in Early Childhood (DIEEC) revised the CCLC model in 2011. They engaged 24 child-care centers in a year-long process of learning, action planning and implementation throughout 2011. Participating centers were linked to new information, resources and technical assistance to help them improve policies and practices regarding healthy eating, physical activity, limiting screen time, staff behaviors and family engagement. Methodology used to evaluate the first collaborative was also used in the evaluation of the second collaborative: the DIEEC used all of the indices from the pre- and post-NAP SACC survey, as well as the direct observation methodology.

Initiative Two: Delaware Child-Care Provider Survey (DCCPS)

Purpose:
The DCCPS is NHPS’ primary instrument for monitoring the Delaware child-care environment. The survey collects data on child-care providers’ knowledge, attitudes, perceptions and practices regarding nutrition, physical activity and screen time standards and recommendations. Data from this survey were examined to investigate the relationships between center-level policies and classroom-level practices within participating child-care facilities.
Methodology:
The DCCPS was first administered in the fall of 2006. Data were obtained from 223 center-based child-care programs and 780 home-based programs. These data were used to guide NHPS’ child-care sector program development and to establish a tool for measuring the progress of policy and practice outcomes for child-care providers. In 2007, NHPS was awarded the grant from RWJF, and funding was invested into the DCCPS in an effort to enhance evaluation capacity within the child-care environment. Informed by observation data from the CCLC, an enhanced version of the DCCPS was administered in 2009. This improved survey was developed as a mechanism for conducting a system-level evaluation of nutrition and physical activity policies and practices among a statewide representative sample of child-care centers. The sample was stratified by participation in the CACFP and by geographic location. The 2009 DCCPS included two components: a survey for center directors examining policy implementation, staff training, staff/parent engagement; and a survey for two teachers from each center examining center practices, behaviors, knowledge and training. Home-based programs were not sampled in the 2009 DCCPS. The 2009 DCCPS was administered among 150 licensed child-care centers, representative of Delaware’s population of 450 child-care centers.

The DCCPS was administered again in 2011, and several enhancements were made to this iteration. The 2011 iteration consisted of three child-care provider components: 1) an in-person survey of child-care center directors; 2) a survey of two teachers at the same child-care center; and 3) a mailed survey of family child-care home owners. Stratified random sampling was used to generate a representative sample of licensed child-care centers and family child-care programs. Following a strong response rate in 2009, the center surveys were again administered in-person. Given the time constraints and large amount of in-home providers, the family child-care provider survey was mailed. These surveys examined center and program practices and providers’ behaviors, knowledge and training. The child-care provider surveys included a new section on social and emotional health with questions about issues occurring within facilities, training needs and other topics to assist in program planning. The 2011 iteration also included a fourth component, a survey for parents, which was piloted at selected centers. The primary purpose of the parent survey was to gather information about food brought from home and communication between parents and child-care providers. In total, 179 centers, 313 family child-care providers and parents from 31 centers in New Castle County participated in the survey.

Results:
2009 DCCPS. The information gathered from the 2009 iteration of the DCCPS helped NHPS understand the relationship between director awareness, center policies and teacher practices for both nutrition and physical activity regulations. Results of the analysis on nutrition are presented in this report. Indices were created to assess the performance of each center in three domains: awareness, practice and policy. A nutrition awareness index was constructed of 14 nutrition standards that pertain to one of the following four groups: fruits and vegetables; meats and meat alternates; whole grains and beverages. A practice index was created by matching items on director-level awareness of the four food groups with items on teacher-level practices. A policy-strength index was constructed to reflect the level of implementation of each of the 14 standards at the center-level. Results of the analysis showed that as scores from the directors’ awareness index increased, scores from the teacher practice index and center policy-strength index also increased. These results demonstrate a strong positive relationship between the three domains.

This relationship was explored further by looking at the zero and first order correlations between the three indices. The zero order correlation revealed a very strong relationship between director awareness and center policies. The relationships between awareness, practices and policy-strength...
were significant, but of smaller magnitude. Results indicated that the majority of the centers reported that the new standards were adopted as informal policies. Furthermore, there was a significant relationship between director awareness and teacher practices with reduced magnitude, when controlling for the strength of policies.

**2011 DCCPS.** During the grant period, the Delaware CACFP and OCCL developed new nutrition, physical activity and screen time standards for the Delaware child-care environment, now known locally as the Delaware CACFP/Delacare Rules. Starting in January 2010, all licensed child-care programs were required to comply with these new standards, regardless of their CACFP affiliation. The results of the 2011 DCCPS iteration were used to assess knowledge and compliance with these revised regulations. Teacher participants served as the unit of analysis for current classroom practices within the center, while owner participants served as the unit of analysis for practice within the family child-care program. Compliance was defined as those respondents who reported practices consistent with the regulation or better than the regulation from the survey answer options.

Over 80 percent of teachers from centers reported complying with the regulations on grains, cheese and processed meat; juice, and the availability of water inside the home. The majority of family child-care providers reported complying with the nutrition regulations for children over the age of 1 (79.5% or more reported complying with each item) (see Figure 18).

**Figure 18. Providers reporting compliance with DE CACFP/Delacare nutrition regulations for children over the age of 1**

![Figure 18](chart.png)

**Notes:**
1. Data are weighted.
2. Due to missing data, percentages may be based on a smaller n than the total population of Delaware child-care centers and family child-care programs.
Teachers from child-care centers reported complying with the computer use regulation (86.4%) and the TV/DVD/video regulation (86.2%). Over 90 percent of all center teachers and family child-care providers reported complying with the physical activity regulation of 20 minutes of MVPA for every 3 hours of care during morning and afternoon care. A large percentage (82.7%) of family child-care providers reported complying with the computer use regulation, while a lower percentage reported complying with the TV/DVD/video viewing regulation (65.6%). Over 90 percent of family child-care providers reported complying with the physical activity regulation of 20 minutes of MVPA for every 3 hours of care during morning and afternoon care (see Figure 19).

Figure 19. Providers reporting compliance with the DE CACFP/Delacare physical activity and screen time regulations

We received 538 completed parent surveys from 31 child-care centers within New Castle County. Within the sample, 22.6 percent of responding parents reported that food from home is not allowed, while 24.1 percent reported that they regularly send food with their child, and 53.3 percent reported they do not regularly send food. Nearly two-thirds of parents (63.3%) reported they received information from the center about the types of foods they can and cannot send with their child to child-care centers and 14.4 percent reported that they did not receive information from the center. A large percentage of parents (92.5%) agreed or strongly agreed that they understand their child-care center’s rules on nutrition. Half of the parents agreed or strongly agreed that they want more information about foods that are served to their child by their child-care provider.
Impact of evaluation data on policy and practice:
The results from the 2009 DCCPS highlighted the importance of awareness within the context of the policy-to-practice relationship. Because awareness accounted for a significant portion of this relationship, it appeared that NHPS was positioned to broaden the scope of its technical assistance and dissemination of resources to a larger group of child-care providers—including both CACFP and non-CACFP participating centers. Using findings from the first round of analyses, NHPS developed the comprehensive Team Nutrition training program, described in the next section. The results of the 2011 DCCPS will be used to develop trainings and materials on specific topics, including nutrition, physical activity, screen time, and social and emotional health. The data from the family child-care provider survey provides valuable information about Delaware’s family child-care environment and will be used by program associates to concentrate their efforts accordingly. By providing parents’ perspective, the parent survey data will inform NHPS’ work in supporting the nutrition and physical activity regulations within centers.

Initiative Three: Team Nutrition Training

Purpose:
In 2009, the Delaware Department of Education (DOE) received the Team Nutrition Training Grant from the United States Department of Agriculture (USDA). NHPS was selected as sole contractor. The purpose of this grant was to support child-care providers in implementing the aforementioned revised nutrition, physical activity and screen time regulations in family child-care homes and centers. NHPS worked with partners and stakeholders throughout the state to develop these revised regulations, which are among the most comprehensive in the nation. NHPS developed a strategy to help child-care providers translate the regulations into practice, which consisted of an “implementation toolkit” (available at www.nemours.org/service/preventive/nhps/resource/publication.html) and large-scale training of at least 1,000 child-care providers participating in CACFP. RWJF funds were used to supplement the evaluation of this strategy.

Methodology:
A pilot training with family child-care providers and child-care center providers was conducted. Pre- and post-training surveys revealed a statistically significant improvement (p<.05) in knowledge of 15 of the 16 nutrition and physical activity regulations. Survey and focus group data were used to make improvements to the toolkits and inform full-scale training. The full-scale training took place in the spring of 2011 and targeted all CACFP-participating centers and family child-care homes in the state. A series of three surveys was administered to attendees: pre-training (N=1,094), post-training (N=1,076) and 60-days follow-up (N=338).

Results:
Survey data from the full-scale training revealed many promising results. Providers’ knowledge of all 26 rule components improved significantly, from 17 at pre-training to 23 at post-training. Additionally, participants reported high satisfaction with the training format and content. Among those who completed the 60-day follow-up survey (average response rate of 32%), 59 percent indicated that they had changed some, most or all of their practices to align with the nutrition regulations, and 52 percent indicated having changed some, most or all of their practices to align with the physical activity regulations. These results should be interpreted with caution; due to low response rates, these results may not represent the entire pool of participants.
**Impact of evaluation data on policy and practice:**

This training on the revised regulations reached nearly 1,200 child-care providers throughout the state of Delaware. The *First Years in the First State* toolkits are now featured as a “must-see resource” on the *Let’s Move!* Child Care web site and on the USDA’s Team Nutrition web site. This exposure will ensure that child-care providers – both in Delaware and in other states/jurisdictions – will continue to benefit from the training and resources for years to come; and consequently, that the young children in their care will receive healthier meals and increased opportunities to be physically active.

Data collected as part of this project has also helped to defend critical legislation in the child-care sector. During its agency review of the OCCL, the Joint Sunset Committee recommended amending the Delacare regulations on food brought from home. House Bill 225 was introduced and would prohibit OCCL from mandating that child-care centers inspect food and drink brought from home to determine if they meet nutritional requirements or to supplement/replace food and drink brought from home that do not meet nutritional requirements. NHPS coordinated a multi-faceted strategy to defend the current regulations on nutrition in child-care. Part of this strategy was developing two policy briefs highlighting the critical nature of good nutrition during the early years. Data from the Team Nutrition parent focus groups and the 2009 DCCPS illustrated support for the implementation of the nutrition regulations among child-care directors, teachers and parents. House Bill 225 was tabled in the House Sunset Committee during the 2012 legislative session. Child-care centers may continue their work to ensure that food and drink brought from home meet the nutritional requirements mandated by the state.
Aim Three: Increasing NHPS’ capacity for communicating research and evaluation findings nationally

In order to effectively translate research into practice, evaluation findings must be shared through multiple dissemination modes (e.g., papers, reports, local and national presentations, media, etc). Years One and Two of the RWJF grant focused on enhancing methodological capacity, while Years Three, Four, and Five provided the opportunity to disseminate our population-level, child-care sector and school sector findings to a broad audience, including both local and national policy-makers, researchers and partners. Findings were disseminated by both NHPS and Nemours’ Office of Policy and Prevention, a division of Nemours. Presentations are organized by Nemours division (NHPS and Office of Policy and Prevention), level of evaluation findings (population-level, child-care sector and school sector), and audience (local and national).

NHPS dissemination of findings

Population-level dissemination:

Local:


National:

Kaplan M and Miller P. “Childhood Obesity Webinar: Engaging Health Systems in Promoting Healthy and Active Communities.” (Webinar presented for the Children’s Hospital Association (formerly National Association of Children’s Hospitals and Research Institutions (NACHRI)), September 27, 2012, www.childrenshospitals.net/AM/Template.cfm?Section=Obesity5&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=63704/)

Zhao J and Gao Z. "Does the Relationship Among Parental Perception, Parenting Behaviors, and Children’s Physical Activity Vary Depending on Weight Status?" (Poster presented at 6th Biennial Childhood Obesity Conference, San Diego, CA, June 29, 2011.)

Child care sector dissemination:

Local:


National:


School sector dissemination:

Local:

Meldrum G. Testimony to Delaware Senate. June 7, 2012. Dover, DE.

Meldrum G. Testimony to members of the Delaware Senate Education Committee. May 16, 2012. Dover, DE.


Mouser MK and Nichols D. “The Delaware Physical Activity Success Story in Schools.” (Presentation to the Delaware State Education Association, Dover, DE, April 24, 2012.)

Nichols D and Davis S. “The Delaware Physical Activity Success Story in Schools.” (Presentation to the Delaware Parent Teacher Association, Bear, DE, March 26, 2012.)


Mouser MK and Nichols D. “Physical Activity and School Performance.” (Presentation to the Delaware State Education Association, February 6, 2012, conference call.)


Nichols D and Davis S. “State of the State: Physical Fitness, Academic Achievement and Student Behavior.” (Presentation to the Delaware School Chiefs, Woodside, DE, September 15, 2011.)


**National:**


Tholstrup L. “Connecting Health, Academics, and Physical Activity for Policy Change in Schools.” (Presented at the National Association of Children’s Hospitals and Related Institutions’ (NACHRI) Creating Connections Conference, St. Louis, MO, March 12, 2012.)


**Nemours’ Office of Policy and Prevention dissemination of findings**

In 2009, Nemours’ National Office of Policy and Prevention was created to promote policies and practices that support children’s health on the national level. The creation of this office has provided NHPS with a valuable opportunity to broaden the dissemination of the population-level, child care and school sector evaluation work supported in part by RWJF. The National Office of Policy and Prevention has leveraged population-level, school sector, and child-care sector data to inform the launch of Let’s Move! Child Care; to provide quantitative support for policy and practice changes in a set of Web-published best practices documents for the Agency for Healthcare Research and Quality; and to enhance a number of national presentations to key stakeholder groups in public health, health care, and early care and education.

The National Office of Policy and Prevention have utilized RWJF-supported data for several specific initiatives:

- **Launch of Let’s Move! Child Care** – On June 8, 2011 the First Lady announced Let’s Move! Child Care (LMCC). This new initiative, supported by Nemours and public and private partners, assists child care providers in their efforts to help children develop healthy habits early in life. LMCC was specifically developed for the thousands of professionals who care for and educate young children in child care settings. These providers are in a position to influence the eating and physical activity habits of the millions of children under the age of six who attend child care centers and homes. The LMCC web site, [www.healthykidshealthyfuture.org](http://www.healthykidshealthyfuture.org), created and hosted by Nemours, serves two main purposes for the early care and education community: 1) functioning as an online hub for free tools and information and 2) providing a checklist quiz and action plan to help child care providers achieve the five voluntary goals of the initiative. Providers who participate in the initiative and achieve the stated goals, receive recognition of their efforts.
  - Since the launch of the website through August 2012, more than 8,500 providers from all states, Puerto Rico, the District of Columbia and the Virgin Islands are participating in LMCC and have accessed the initiative website, [www.healthykidshealthyfuture.org](http://www.healthykidshealthyfuture.org), created and hosted by Nemours. Over 72,000 people have visited the site and downloaded more than 50,000 materials.

- **Healthy Kids, Healthy Future**, chaired by Nemours and the Centers for Disease Control and Prevention, works to improve nutrition and increase physical activity in early care and education settings. Nemours has been able to use the child care and DSCH findings to demonstrate to
national and state audiences the value of the policy and practice change model at both the national conference in September 2009 and the resulting Steering Committee meetings. Nemours has disseminated this information to other states, including California, DC, West Virginia, Tennessee, Michigan and Wisconsin, as well as to national leaders in obesity and early education.

- **6**th Biennial Child Obesity Conference, June 28-30, 2011
  - Nemours, a sponsor of the conference, hosted a pre-conference breakfast for 35 people entitled, “Supporting obesity prevention in child care,” where the primary goal of the discussion was to identify opportunities for advancing research, practice and policy to promote healthy eating and physical activity in child care settings. Approximately 400 CDs containing Nemours’ tools, and child care, schools, and population-level evaluation reports were disseminated to attendees to encourage the spread of these tools and findings.
  - Nemours participated in a meeting of the White House Obesity Task Force (March 2010). At that meeting, Nemours’ child-care strategy was highlighted and data were provided from the NHPS Child Care Learning Collaborative. As a result, Nemours was recognized as a model in the action plan released by the White House Task Force on Childhood Obesity.
  - Nemours was invited to consult with the Institute of Medicine’s Obesity Prevention Policies for Young Children Committee where the Delaware child-care model was discussed and NHPS’ materials and evaluation results were shared (2011).
  - Nemours was one of six founding partners in the Partnership for a Healthier America, the new foundation developed as a part of Mrs. Obama’s national initiative, *Let’s Move!* (February 2010).

The following list details the national-level dissemination of findings, by population-level, child-care and school sectors:

**Population-level dissemination:**


Gertel-Rosenberg AS, Chang D and Drayton VL. “Stemming the Increase of Childhood Overweight and Obesity in Delaware.” (Poster presented at AcademyHealth Child Health Services Interest Group Meeting and AcademyHealth Annual Research Meeting, Boston, MA, June 26-27, 2010.)


**Child care sector dissemination:**

Gertel-Rosenberg A. “Let’s Move! Child Care – From Overview to Implementation.” (Presented at the National Association of Family Child Care Providers, Atlanta, GA, July 26-28, 2012.)

Gertel-Rosenberg A. “Keynote Address: Bringing Promising Practices to Scale and Implementing Change: Childhood Obesity Prevention in Early Care and Education.” (Presented at the Indiana Child Care Resource and Referral Agencies Meeting, Indianapolis, IN, June 30, 2012.)

Chang D. “Multi-sector Work Nationally and in Delaware.” (Presented at the AcademyHealth National Health Policy Conference, Orlando, FL, Orlando, FL, June 24-26, 2012.)


Chang D. “What Can States Do? Obesity Prevention in Early Care and Education.” (Presented at the Centers for Disease Control and Prevention’s Weight of the Nation Meeting, Washington, DC, May 7-9, 2012.)

Gertel-Rosenberg A. “Healthy Kids, Healthy Future: Leveraging Public-Private Partnerships to Promote Healthy Eating and Physical Activity in Child Care.” (Presented at the National Association of Child Care Resource and Referral Agencies (now Child Care Aware of America), Washington, DC, March 9, 2012.)

Gertel-Rosenberg A. “Healthy Kids, Healthy Future: Leveraging Public-private Partnerships to Promote Healthy Eating and Physical Activity in Child Care.” (Presented at the Association of Maternal and Child Health Programs, Washington, DC, February 9-12, 2012.)


Chang D. “Intervening Early: Child Care as an Untapped Setting for Preventing Childhood Obesity.” (Webinar presented for Robert Wood Johnson Foundation Center to Prevent Childhood Obesity, October 22, 2009.)

**School sector dissemination:**
Next Steps

Population-level
NHPS will continue to monitor the health indicator trends with the next iteration of the DSCH. As in the past, these results will be used to inform NHPS’ programmatic and policy initiatives. The next steps for the DSCH will include the following:

- Future iterations of the DSCH will allow NHPS to track the status of children’s BMI within Delaware. These results will provide NHPS the ability to monitor progress toward its 2015 goal: to increase the percentage of children, ages 2–17 within the healthy weight range by 2015. This goal aligns with RWJF’s 2015 goal to reverse the childhood obesity epidemic in the United States by 2015.
- In 2013, NHPS hopes to share DSCH data and reports via the Nemours web site. This will allow researchers, policy-makers, community partners, and the general public to easily access this data electronically.
- The experience and the lessons learned from the past iterations will be used in the next iteration of the survey to reduce sampling bias and improve representation.

School Sector
Over the past three years, NHPS has successfully reached over 70 percent of Delaware’s public elementary schools through the Make School a Moving Experience program. Evaluation findings suggest that concerted efforts will be required to maintain gains made in engaging elementary school students in healthy levels of physical activity. The next steps for physical activity promotion in schools will include:

- NHPS will identify methods to monitor and evaluate the implementation of school-based physical activity initiatives at a system-level.
- NHPS will continue to monitor the trends of Delaware public school students’ fitness levels. NHPS will analyze future FITNESSGRAM® data provided by the Delaware Department of Education.
- NHPS will help public schools institutionalize opportunities for students to get healthy levels of physical activity during the school day. This includes advocating for a state policy that requires 150 minutes of physical activity weekly in elementary schools, sustaining the programmatic efforts of the Make School a Moving Experience program, and providing technical assistance to schools that do not currently provide their students with 150 minutes of physical activity per week.

NHPS will continue to support both elementary and secondary School Health Profile surveys. The evaluation and dissemination of the results have the potential to influence positive health policies and programs in schools. The next steps for NHPS should include:

- Identifying ways to monitor and evaluate the implementation of programs and policies that promote healthy foods served at school, health education and other initiatives that promote positive health behaviors.
**Child-care Sector**

There are several opportunities for continuing the enhancement of NHPS’ methodological capacity within the child-care sector.

- In October 2012, center participants from the 2007-2008 and 2011 child-care learning collaboratives will meet to evaluate their experiences. To assess the sustainability of physical activity and nutrition policies and practices within child-care centers, surveys data will be collected and compared to data collected from participants of the first two learning collaboratives.

- Future iterations of the Delaware Child Care Provider Survey will allow NHPS to examine the trends on sustainability of providers’ knowledge, attitudes, perceptions, and practices regarding nutrition, physical activity, and screen time standards and recommendations.

- The 2011 DCCPS parent survey pilot was a step forward in enhancing NHPS’ ability to capture parents’ perceptions of their child’s home and child-care environments. In future iterations, the DCCPS parent survey should be administered to parents from more centers throughout the state to ensure the data comes from a representative sample.
References


xiii Welk GJ and Meredith MD (Eds.). Fitnessgram / Activitygram Reference Guide. Dallas, TX: The Cooper Institute, 2008.

