

Signs of Progress in Childhood Obesity Declines

**Site Summary Report
New York, NY
2015**

Site Visitors:

Phyllis Ottley, PhD, Stacey Willocks, MS

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Members of the NCCOR advisory team include: Tina Kauh, RWJF; Carrie Dooyema, CDC Division of Nutrition, Physical Activity and Obesity (DNPAO); Deborah Young-Hyman, NIH Office of Behavioral and Social Sciences Research (OBSSR); Jan Jernigan, CDC DNPAO; Laura Kettel-Khan, CDC DNPAO; Melissa Abelev, USDA Food and Nutrition Services (FNS); Rachel Ballard, NIH National Cancer Institute; Sonia Arteaga, NIH National Heart, Lung, and Blood Institute (NHLBI); Toijja Riggins, USDA FNS; Veronica Uzoebo, USDA FNS; and William Dietz, Redstone Global Center, Milken Institute School of Public Health, The George Washington University.

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EXECUTIVE SUMMARY

BACKGROUND OF CHILDHOOD OBESITY DECLINES PROJECT

The Signs of Progress in Childhood Obesity Declines (Childhood Obesity Declines Project) seeks to document current and past initiatives implemented in a sample of sites reporting childhood obesity declines and to identify the contextual factors that may have facilitated or hindered the initiatives, particularly those that might help in understanding health disparities. The work is a collaborative effort guided by members of the National Collaborative on Childhood Obesity Research (NCCOR),¹ funded by the Robert Wood Johnson Foundation, and implemented by ICF Macro (an ICF International company). After a careful review of study data and confirmation of the statistical significance of the decline, New York City (NYC) was selected as one of four sites for the case study. ICF Macro team members applied the following methods:

- A review of published studies, grey literature, and site childhood obesity data, using established inclusion and exclusion criteria to select sites for case studies
- A review of documents describing relevant strategies and initiatives implemented in each selected site prior to and during the period of reported declines
- An inventory of strategies, applied as a survey, for knowledgeable respondents within the selected sites to identify which strategies occurred during the period of interest in four settings (early care and education, school, community, and healthcare)
- A policy and contextual scan to identify relevant policies implemented in each site
- A site visit to each of the selected cities with interviews of respondents across multiple settings to describe the development and implementation of relevant strategies

Taken together, the information from each site (and the synthesis of information across sites) should provide initial insights about strategies that may have contributed to declines, as well as information about the ways in which those strategies were effectively implemented.

OBESITY DECLINES IDENTIFIED IN NEW YORK CITY

In NYC, statistically significant declines in obesity were noted among students in grades K-8 between the 2006–2007 and 2010–2011² school years. The prevalence of obesity in grades K–8 had a relative decline of 5.5% ($p < .001$) between 2006–2007 (21.9%) and 2010–2011 (20.7%). The findings show that obesity decreased significantly among children in all age groups and socioeconomic and racial/ethnic populations; however, the decrease was smaller among black (1.9%) and Hispanic (3.4%) children than among Asian/Pacific Islander (7.6%) and white (12.5%) children.

POLICY LANDSCAPE

The policy review identified six State policies related to obesity prevention and treatment, nutrition, and physical activity in New York between 2004 and 2011. Of the six policies, three were related to

¹ The four organizations represented in NCCOR are the Robert Wood Johnson Foundation (RWJF); the Centers for Disease Control and Prevention (CDC); the National Institutes of Health (NIH); and the United States Department of Agriculture (USDA).

² Centers for Disease Control and Prevention. (2011). Obesity in K-8 students - New York City, 2006-07 to 2010-11 school years. *Morbidity and Mortality Weekly Report*, 60(49), 1673–1678.

obesity prevention and treatment, one was related to physical activity, one was related to nutrition, and one addressed both nutrition and physical activity. Most of these policies affected early care and education and school settings.

ITEMS ENDORSED IN SITE STRATEGY INVENTORY

Through an inventory, we identified strategies implemented in four settings that addressed physical activity and healthy eating: (1) early care and education (ECE), (2) schools, (3) communities, and (4) health care. The strategies in the inventory included a broad range of activities such as programs, policies, initiatives, campaigns, and regulations. A total of eight individuals completed the strategy inventory for NYC (a 70% response rate). Table A below lists the overall number of strategies identified per setting.

Table A: Results of Strategy Inventory in New York City

Setting	Strategies That Address Physical Activity	Strategies That Address Healthy Eating	Strategies That Address Physical Activity and Healthy Eating
ECE	3	5	1
Schools	13	9	23
Community	24	21	Not included in the inventory
Health care	0	5	0

SITE VISIT INTERVIEWS

In addition to the policy review and strategy inventory, more in-depth information was obtained about strategies through site visit interviews. The report presents results from the interviews, including strategies identified for focus and a timeline of strategies (Figure 1) developed by the site visit team. The interviews provided information for deeper descriptions of the strategies identified for focus. They also provided some information describing the site overall, including general uses of data within the site, respondents' reports of champions who helped advance initiatives, cross-sector partnerships, respondents' perceptions of factors leading to the declines in childhood obesity rates, and respondents' lessons learned that can be shared with others working to reduce rates of childhood obesity in their own sites.

Strategies Identified for Focus

A subset of the strategies were identified for more focused inquiry. These include initiatives known to have had broad reach into the population where statistically significant declines were documented. These initiatives targeted children at the community- or district-wide levels so that potential exposure to the initiative was far-reaching. Respondents also mentioned some initiatives that they considered important to understand in relation to the declines. Table B below shows the strategies identified for focus, indicates those that most directly touched the population that experienced the declines, and provides information about the settings, focus areas, and types of approaches used for each.

Table B: Strategies Identified for Focus in New York City

Name of Strategy	Most Directly Targeted Population with Declines	Setting				Focus Area			Type		
		ECE	Schools	Community	Health Care	Nutrition	Physical Activity	Built Environment	Program	Policy	Media Campaign
1. New York City Food Standards (comprehensive nutrition standards for all foods purchased and served by city agencies and their programs)	X		X	X	X	X				X	
2. School nutrition policies (including whole milk removed from public schools; introduced lower-fat, fat-free items, salad bars, healthy vending)	X		X			X				X	
3. Move to Improve (classroom-based physical activity program)	X	X	X				X		X		
4. New York City Day Care Regulations (Board of Health requirement for physical activity, nutrition, and screen time in day care settings)		X				X	X			X	
5. Health Bucks (farmers market financial incentive program to increase redemption of Supplemental Nutrition Assistance Program or Special Supplemental Nutrition Program for Women, Infants, and Children)				X		X			X		

Additional Strategies Implemented

The strategies above either directly targeted or had great reach to the population of school children wherein declines were found. In addition to these, however, we learned of several additional initiatives undertaken in New York City across settings. The additional initiatives discussed during site visit interviews do not represent an exhaustive list of initiatives and strategies, but rather are based on the interviewees’ recollection of activities that occurred in New York City. This included over 50 initiatives, some of which were implemented in multiple settings. A list of all strategies discussed during the site visit, matrixed by setting and type, is in Appendix E. The strategies include the following:

- FITNESSGRAM, an annual assessment for children in grades K-12 to determine their healthy fitness zone. Approximately 860,000 body mass indexes per year are measured.

- Healthy Bodegas, initiatives that increased the availability of and access to healthy food in New York City neighborhoods with the highest rates of poverty and burden of chronic disease. More than 1,000 bodegas participated in the initiative.
- Significant nutrition policies that were adopted citywide, including the board of health's approval of trans fat restriction for all NYC restaurants; change in nutrition and physical activity in early child care centers; and calorie posting in chain restaurants.
- A significant media campaign focusing on the dangers of consuming sugary drinks that was launched in subways, television commercials, and through social media. Even though the excise tax on sugary drinks and related policies did not pass, sugary drink consumption declined, as evidenced by data from the Community Health Survey (CHS) and Youth Risk Behavior Surveillance System (YRBS).

Strategies Addressing Health Disparities

An important characteristic of the NYC public health infrastructure that facilitates concentrated efforts in neighborhoods of greatest need are the three District Public Health Offices (DPHOs) located in the south Bronx, east and central Harlem, and north and central Brooklyn. These offices were created in 2002 and are strategically located in neighborhoods with the highest rates of poverty and diet-related disease in the city. The three DPHOs have both shared and individually-tailored neighborhood initiatives and have gained significant funding to address health disparities. Data examined in the city during the years just before and after implementation of the 2007 day care regulations indicate a narrowing of the gap in obesity prevalence between the early childhood population in high-risk neighborhoods and that population in low-risk neighborhoods in two of the three DPHOs (Harem and Bronx).³ Among children of all age groups living in high poverty areas, however, the data identified significant but inconsistent decreases in obesity prevalence.

SITE FINDINGS

Overall Site Use of Data

Data were used in NYC for a variety of reasons, including assessing the rates of obesity in the city, determining what portions of the population are impacted the most, and understanding potential changes occurring in behavior due to policy or program implementation. The health department was at the forefront of gathering and analyzing data; using findings to develop and improve programs; and administering an annual surveillance survey, the CHS, and other surveillance surveys (e.g., the YRBS) to better understand health behavior changes.

Site Reports of Champions

Overwhelmingly, respondents indicated that the shift in the dialogue about promoting healthful behaviors and eliminating factors that contribute to obesity happened because of Mayor Michael Bloomberg and Dr. Thomas Frieden, the NYC health commissioner at the time (2002–2009). Both Mayor Bloomberg and Dr. Frieden were committed to reducing the rates of obesity among New Yorkers overall, and they made focused investments in strategies to impact childhood obesity.

³ Sekhobo JP, Edmunds LS, Dalenius K, Jernigan J, Davis CF, Giddings M, et al. Neighborhood Disparities in Prevalence of Childhood Obesity Among Low-Income Children Before and After Implementation of New York City Child Care Regulations. *Prev Chronic Dis* 2014;11:140152. DOI: <http://dx.doi.org/10.5888/pcd11.140152>.

Respondent Perceptions of Factors Leading to Declines

When asked what factors they believe have led to the childhood obesity declines in NYC, respondents often described the web of interventions happening across the city and at differing levels of influence. Respondents cited the broad-reaching policy changes at the city level and the changes to early childhood education and school nutrition policies as being of great influence in the declines found among children in grades K-8.

Lessons Learned for Other Sites

Respondents shared various lessons learned in the course of their efforts. This included the importance of not expecting a single intervention to fix the problem; forming relationships and building diverse partnerships; and implementing citywide policies that impact various sectors.

Limitations

The study illuminated many policies and strategies that likely impacted obesity declines among school-age children. However, there are some mitigating factors that could limit application and generalization of the study's findings. First, this study was exploratory in nature, and did not have a control group or measure changes over time. Through data collection, many items emerged that likely impacted childhood obesity declines in New York City, but the study does not allow for direct determination of causality. Further, snowball sampling and a compressed timeframe meant that the team was limited in how many individuals could complete the inventory worksheet and be interviewed during the study period.

Also, the information gleaned from this study is characteristic of the types of policies, strategies, challenges, and facilitators related to combating obesity declines in New York City. Despite the great deal of information acquired before, during, and after the site visit, this information cannot be considered comprehensive. Finally, a great deal of the information collected was retrospective. Interviewees described, to the best of their abilities, strategies undertaken sometimes 5 to 15 years prior, but their memories may not always be complete or precise when it comes to the specifics and timeframe of developing and implementing various strategies. When possible, the study team used documented reports to try and confirm the exact details and timing of policy changes and strategy implementation.

CONCLUSION

New York City implemented a comprehensive slate of initiatives, policies, and programs to address childhood obesity. Some of these initiatives were focused in specific neighborhoods, others were citywide, and others occurred across school districts and early care centers. Many were supported by Federal or State policies reinforcing healthy food standards. There was an overarching policy to work across city agencies and community organizations. The strategies also were implemented across a variety of settings along with complementary strategies to ensure that they addressed all aspects of the issues and that they reached the target populations. And to address environments where families of high-risk youth live, New York City was focused on reducing health disparities and aimed to increase the affordability of and access to fresh produce, healthy food items, and beverages in neighborhoods with the highest need. There were not consistent rates of decline in obesity among children of all age groups living in high poverty areas and likely experiencing health disparities. However, data did show a narrowing of the gap in obesity prevalence rates within the early childhood population between high-risk and low-risk neighborhoods in two of the three DPHOs.

I. BACKGROUND AND PURPOSE OF CHILDHOOD OBESITY DECLINES PROJECT

PROJECT BACKGROUND

As the search for ways to address childhood obesity continues, organizations and communities across the country are experimenting with various strategies aimed at changing children’s environments to prevent obesity. The project, *Signs of Progress in Childhood Obesity Declines* (Childhood Obesity Declines Project [CODP]), was conceived and implemented to identify and describe local-level strategies that have been implemented in municipalities that have experienced declines in rates of childhood obesity. The work is a collaborative effort guided by members of the National Collaborative on Childhood Obesity Research (NCCOR),¹ funded by the Robert Wood Johnson Foundation, and implemented by ICF Macro (an ICF International company).

The CODP was conceived to help provide the field with a better understanding of how jurisdictions are operationalizing and implementing obesity prevention and reduction strategies. The project has sought to systematically document current and past initiatives implemented in a small sample of sites reporting childhood obesity declines and to identify the contextual factors that may have facilitated or hindered the initiatives, particularly those that might help understanding of the disparities that continue to persist in most sites. The CODP also collected information on how initiatives have been implemented and who the primary supporters have been. This project was conceived as an initial step in building knowledge about efforts that may be contributing to declines in childhood obesity. It will thus serve to supplement other work on this topic that is in progress but for which findings will not be available for some time.

Participating NCCOR members also engaged an expert panel to advise on the study. (See Appendix A for a full list of the expert panelists.) The multidisciplinary expert panel comprises 15 individuals with diverse yet complementary expertise and experiences. The panel has provided guidance and suggestions about the methodology of the project. Panel members represent academics, evaluators, researchers, Federal Government personnel, topic experts (e.g., nutrition, physical activity, and evaluation), practitioners, and program directors (of obesity reduction programs). In addition, expert panel members possessed substantial familiarity with the diverse settings (e.g., schools, communities, early childhood programs, and health care) in which obesity initiatives have been implemented.

PROJECT PURPOSE

As an exploratory endeavor, the CODP will provide the opportunity to examine strategies being implemented in jurisdictions that have had attained declines in rates of childhood obesity. The goal of the CODP is to systematically explore the factors that may be contributing to reported declines in childhood obesity in a small sample of these jurisdictions. Specifically, this project aims to gain a better understanding of the initiatives, strategies, and practices that occurred in municipalities reporting childhood obesity declines, along with the contextual factors that may have influenced these efforts. Another goal is to identify commonalities and differences in approaches and strategies, in populations and disparities, and in implementation of obesity prevention efforts across the selected jurisdictions.

¹ The four organizations represented in NCCOR are the Robert Wood Johnson Foundation (RWJF); the Centers for Disease Control and Prevention (CDC); the National Institutes of Health (NIH); and the United States Department of Agriculture (USDA).

The CODP also will help to increase our knowledge about how obesity prevention efforts operate in conjunction with other health promotion efforts.

The primary questions for the CODP include the following:

1. What current and past initiatives, strategies, practices, and contextual factors are occurring in selected sites with reported childhood obesity declines?
2. What have selected sites reported in terms of reductions among diverse populations (e.g., racial/ethnic groups, low-income populations, underserved communities), and how does this address health disparities?
3. In what ways are obesity reduction initiatives and practices integrated with other health promotion efforts, and how have contextual factors played a role?
4. To what extent have selected sites employed similar or different obesity reduction/prevention strategies?²

Through the methods being employed, the CODP will provide information about the reported presence or absence of a broad range of strategies in the selected sites during the period of the declines, including strategies recommended by groups like the Institute of Medicine and CDC. Through closer examination, the project also will provide information about characteristics of a subset of these strategies and the process of developing and implementing particular initiatives.

PROJECT COMPONENTS

With initial input from the expert panel, ICF Macro and NCCOR CODP team members determined five primary project components. Through a review of published studies and grey literature, sites reporting declines in rates of childhood obesity were identified. ICF Macro team members then applied the following methods:

- A review of the studies and of site obesity data, using established inclusion and exclusion criteria to confirm the statistical significance of the decline and select sites for case studies
- A review of documents accessible through the academic and grey literature describing relevant strategies and initiatives implemented in each selected site prior to and during the period of reported declines
- An inventory of strategies, applied as a survey, for knowledgeable respondents within the selected sites to identify which occurred during the period of interest
- A policy and contextual scan for each selected site to identify relevant policies implemented prior to and during the period of reported declines
- A site visit to each of the selected sites with interviews of respondents across multiple settings to describe the development and implementation of relevant strategies during the period of interest.

² Question #4 will be addressed in a synthesis report of the study that examines similarities and differences across the four sites: ICF Macro (2015). *Signs of progress in childhood obesity declines: Synthesis report*. Unpublished Report.

Taken together, the information from each site (and the synthesis of information across sites) should provide initial insights about strategies that may contribute to declines as well as information about the ways in which those strategies were effectively implemented.

METHODS AND BACKGROUND FINDINGS

The study team conducted data reviews to aid in site selection and document reviews to obtain background information about the site and the various implemented strategies. In New York City, statistically significant declines in obesity were noted among students in grades K-8 between the 2006–2007 and the 2010–2011¹ school years. The methods outlined in this section detail how the ICF Macro study team focused our investigation on this population and timeframe.

Site Strategy Inventory

In addition to reviewing information in documents about strategies implemented in sites with reported declines, the CODP team members developed an approach for documenting the numerous strategies that occurred in a site during the period through an online site strategy inventory. Team members from CDC's DNPAO identified strategies in the inventory through a review of several publications identifying evidence-based policy recommendations, promising actions, and strategies to address childhood obesity. The publications included reports that recommended policies and actions over the last decade to decrease childhood obesity at the population level, including Institute of Medicine childhood obesity reports, the Guide to Community Preventive Services, and multiple CDC nutrition and physical activity guidance documents. Respondents to the inventory were asked to note, to the best of their knowledge, the presence or absence of each listed strategy in the city during the period of the reported declines. Respondents were identified through a snowball sampling technique, beginning with the authors of studies reporting the declines, then broadened to include those referred to the CODP team members as individuals knowledgeable about strategies implemented in each of the four settings (early care and education [ECE], schools, community, and health care).

Policy and Contextual Data Reviews

To help understand the policy and environmental context in which strategies were implemented, we conducted a scan of the food, physical activity and policy environments over the study time period as well as an assessment of key demographic characteristics at baseline (2004) and follow-up (2011). To assess policy impacting childhood obesity, nutrition, and physical activity, ICF Macro study team members gathered policy information at both Federal and State levels. For Federal policies, we examined policies and programs noted in the 2004–2012 *F as in Fat* reports³ as well as other reports⁴ of Federal obesity prevention policy. To identify State policy over the study time period, we captured policies from existing databases (e.g., CDC's Chronic Disease State Policy Tracking System⁵) and policy updates from the National Conference of State Legislatures.⁶ In addition to these sources, we also documented childhood obesity legislation noted in Bridging the Gap's review of state obesity-

³ Trust for America's Health (2009). *F as in fat. How obesity policies are failing in America*. Washington, DC: Author. Retrieved September 14, 2015, <http://healthyamericans.org/reports/obesity2009/>

⁴ Brill, A. (2013). *The long-term returns on obesity prevention policies*. Retrieved September 14, 2015, from https://depts.washington.edu/waaction/tools/docs/rwjf_returns_report.pdf

⁵ Centers for Disease Control and Prevention. (n.d.). *Chronic Disease State Policy Tracking System*. Retrieved September 14, 2015, from <http://nccd.cdc.gov/CDPHPPolicySearch/Default.aspx>.

⁶ National Conference of State Legislatures. (2014). *Childhood obesity legislation policy update*. Retrieved September 14, 2015, from <http://www.ncsl.org/research/health/childhood-obesity-legislation-2013.aspx>

related policies⁷ and the National Resource Center for Health and Safety in Child Care and Early Education's report on child care regulations.⁸ It is important to note that we were not able to conduct a full policy search/extraction through Westlaw or similar legal research databases, given the resources that would have been required to conduct, extract, and code policies over the timespan across sites. However, we used multiple sources to arrive at a comprehensive snapshot of the policy context during the study period. Local-level policies (county, municipality, or school district) were captured through the site strategy inventory sent to stakeholders or during site visit interviews.

ICF Macro study team members also collected sociodemographic and food and physical environment data for each site for baseline and follow-up years to better understand contextual factors in the community that may affect the population and any changes in health outcomes. Sociodemographic data were based on the Census American Community Survey,⁹ and food and physical activity environment data were taken from the U.S. Census County Business Patterns,¹⁰ for New York City's baseline and follow-up years. Sociodemographic and food and physical environment data can be found in Appendix B.

Site Visit and Interviews

The site visit to New York City took place April 27–May 1, 2015. Using semistructured interview guides, the site visit team conducted a total of 30 interviews with 30 people; all but two interviews were conducted in person. (See Appendix C for a list of those interviewed for the study.)

⁷ Bridging the Gap. (2014). *State obesity-related policies*. Retrieved September 17, 2015, from http://www.bridgingthegapresearch.org/research/state_obesity-related_policies/.

⁸ National Resource Center for Health and Safety in Child Care and Early Education, University of Colorado Denver. (2011). *Achieving a state of healthy weight: A national assessment of obesity prevention terminology in child care regulations 2010*. Aurora, CO: Author. Retrieved September 14, 2015, from http://nrckids.org/default/assets/File/Products/ASHW/regulations_report_2010.pdf

⁹ U.S. Census American Community Survey. *American fact finder*. Retrieved September 17, 2015, from <http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>.

¹⁰ U.S. Census. (2015). *County business patterns*. Retrieved September 17, 2015, from <http://www.census.gov/econ/cbp/>.

II. SITE STRATEGY FINDINGS

The ICF Macro team explored data sources to collect information on strategies implemented in New York City during and immediately preceding the period of time when a statistically significant decline in rates of childhood obesity had been reported. For New York City, the study period is between the 2006-2007 and 2010-2011 school years.¹ To assess the policies, programs, initiatives, and strategies implemented during this period, we reviewed data 2 years prior to the study period (2004) to account for potential lag time between policy enactment and implementation. Because we had an opportunity to learn more onsite during site visits, we also asked respondents to discuss strategies implemented during the pre- and post-study period. This section presents findings identified through policy reviews, the site strategy inventory, and the site visit interviews.

SITE CONTEXT

With a population of approximately 8.3 million people and about 800 languages spoken, New York City is one of the most populated and diverse cities in the United States and the most linguistically diverse city in the world. The population is distributed over a land area of 305 square miles, making it also the most densely populated city in the United States. The city consists of five boroughs: Manhattan, Brooklyn, Bronx, Queens, and Staten Island. Each borough has an elected president that can introduce legislation or make recommendations to the mayor or other city officials on matters of public interest. Each borough must adhere to citywide policies passed to improve health, though implementation may vary depending on the borough board's priorities. The majority of public offices are held by the Democratic Party, and 68% percent of registered voters in the city are democrats. The mayor of New York City is the chief executive of the five boroughs. During the study period (2006-2011), the mayor of the city was Michael Bloomberg, and he was instrumental in many of the health promoting policies and programs that occurred. Many of the strategies implemented during the study period were directed at school children. The New York City public school system, managed by the New York Department of Education, is the largest in the nation and serves approximately 1.1 million children. With about 1,800 schools in the city school district, districtwide policies have the potential to reach a large number of children. The public health infrastructure of city includes three District Public Health Offices. These offices, located in the south Bronx, east and central Harlem, and north and central Brooklyn, are located in neighborhoods with the highest poverty and rate of disease burden. They were created to address health problems in the community and reduce health disparities.

POLICY LANDSCAPE

Federal policy. Between 2000 and 2012, several notable Federal policies were passed impacting efforts to address childhood obesity at the State and local levels. First, in 2004, Reauthorization of the Child Nutrition and WIC Act included a requirement that all local education agencies participating in the National School Lunch Program would establish a local wellness policy by the start of the 2006–2007 school year. These policies required school districts to address the following: (1) goals for nutrition education, physical activity, and other school-based activities; (2) nutrition guidelines for all foods sold on school campus during the school day to promote health and reduce obesity; (3) a plan to ensure implementation of the policy; (4) involvement of parents, students, and representatives of the school administration and staff as well as the public in a local wellness committee; and (5) guidelines for reimbursable school meals that are not less restrictive than national guidelines. In addition to the local wellness policies, the 2004 reauthorization revised the requirements of the fruit and vegetables program. It emphasized that the majority of schools participating should be low income (at least 50%

of students receiving free or reduced-price lunch), and it provided funds for districts and schools related to farm-to-school programs as well as nutrition education (e.g., Team Nutrition grants). In 2007, Federal legislation was passed addressing requirements for the Child and Adult Care Food Program, including standards for the nutritional content of foods served and portion sizes. Funding was also provided to USDA to support centers in increasing physical activity and decreasing sedentary time. Lastly, the Healthy, Hunger-Free Kids Act (HHFKA) was passed in 2010. It reauthorized several child nutrition programs, outlined standards for the nutritional content of foods and beverages sold outside the school meals program, and updated nutrition standards for school meals. The HHFKA also updated requirements for the content and tracking of local wellness policies.

State policy. The policy review identified six State policies related to obesity prevention and treatment, nutrition, and physical activity in New York between 2004 and 2011. Of the six policies, three were related to obesity prevention and treatment, one was related to physical activity, one was related to nutrition, and one addressed both nutrition and physical activity. Most of these policies affected the ECE and school settings. For more information about these policies, see the timeline provided in Figure 1 and a complete list of the policies in Appendix D.

Local-level policy. Due to resource limitations, the ICF Macro team could not conduct a comprehensive scan of local-level policies. However, we used the site strategy inventory and site visit interviews to capture key policies enacted or implemented during the study time period.

ITEMS ENDORSED IN SITE STRATEGY INVENTORY

Through the inventory, we identified strategies that addressed physical activity, healthy eating, or both, that were implemented in the ECE, schools, community, and health care settings. The strategies might include a broad range of activities such as programs, policies, initiatives, campaigns, and regulations. A total of eight individuals completed the New York City strategy inventory (a 70% response rate). Table 1 shows the overall number of strategies identified per setting.

Table 1: Results of Strategy Inventory in New York City

Setting	Strategies That Address Physical Activity	Strategies That Address Healthy Eating	Strategies That Address Physical Activity and Healthy Eating
ECE	3	5	1
Schools	13	9	23
Community	24	21	Not included in the inventory
Health care	0	5	0

SITE VISIT INTERVIEWS

In addition to the policy review and strategy inventory, more in-depth information was obtained about strategies through site visit interviews. This section presents results from the interviews, including the strategies identified for focus, and a timeline of strategies developed by the site visit team. The interviews also provided information for the next section, which presents deeper descriptions of the focal strategies. A later section presents information taken from the site visit interviews to describe the site overall, including general use of data within the site, partnerships, respondents' perceptions of factors leading to the declines in rates of childhood obesity in the city, and lessons that respondents share for other sites that might be working to reduce childhood obesity.

Strategies Identified for Focus

A subset of the strategies were identified for more focused inquiry. These include initiatives known to have had broad reach into the population where statistically significant declines were documented. Some initiatives also were raised by respondents in the interviews as important to understand in relation to the declines, similarly for their relevant community- or student-level focus. Table 2 shows the strategies of focus, indicates those that most directly touched the population that experienced the declines, and provides information about the settings, focus areas, and types of approaches used for each.

Table 2: Strategies Identified for Focus in New York City

Name of Strategy	Most Directly Targeted Population with Declines	Setting				Focus Area			Type		
		ECE	Schools	Community	Health Care	Nutrition	Physical Activity	Built Environment	Program	Policy	Media Campaign
1. New York City Food Standards (comprehensive nutrition standards for all foods purchased and served by city agencies and their programs)	X		X	X	X	X				X	
2. School nutrition policies (including whole milk removed from public schools; introduced lower, fat-free items and salad bars)	X		X			X				X	
3. Move to Improve (classroom-based physical activity program)	X	X	X				X		X		
4. New York City Day Care Regulations (Board of Health requirement for physical activity, nutrition, and screen time in day care settings)		X				X	X			X	
5. Health Bucks (farmers market financial incentive program to increase redemption of Supplemental Nutrition Assistance Program or Special Supplemental Nutrition Program for Women, Infants, and Children)				X		X			X		

Strategy Timeline

A number of relevant initiatives addressing multiple strategies were reported during and prior to the period of documented childhood obesity declines. Site visit team members shared a draft of the timeline with interviewees prior to the interviews and reviewed the document with them during the interview. As additional initiatives were raised by interviewees, site visit team members revised the timeline to include them. The timeline in Figure 1 presents these identified strategies in the ECE, school, community, and health care settings.

Figure 1: Timeline of Identified Strategies in New York, 2004–2010*

Pre-Study Period

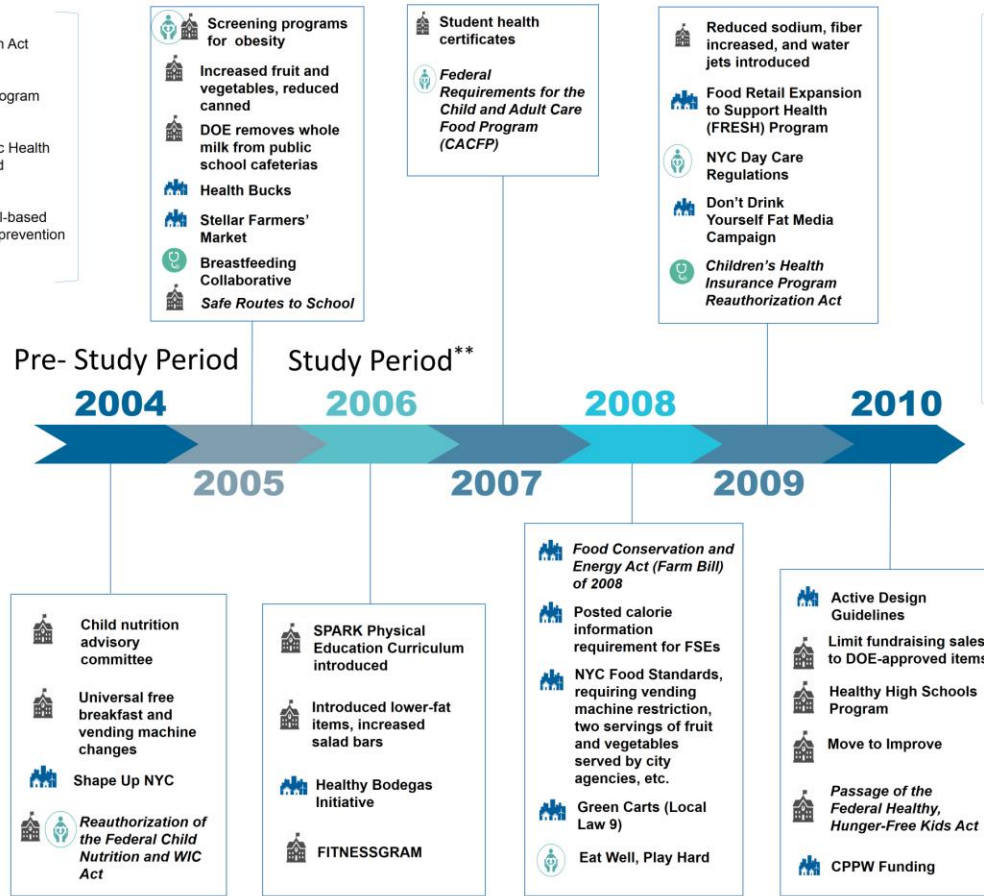
Interventions Implemented up to 5 Years Prior to Baseline

- 2001 Obesity Prevention Act
- 2002 Farm-to-School program
- 2002 NYC District Public Health Offices established
- 2003 Established school-based childhood obesity prevention programs

Post-Study Period

Interventions Implemented up to 5 Years After Follow-Up Data Collection

- 2011 Make NYC Your Gym media campaign
- 2011 Active Design Guidelines for new city construction
- 2011 Prohibited caffeine and artificial flavors, colors, and sweeteners
- 2011 Sugary Drink Campaign
- 2012 Recess Enhancement Program (50 NYC public schools at the time of the study = 20,000 students)
- 2015 Posted sodium information requirement for FSEs



Settings: Schools Early Childhood Education Community Health Care

* The timeline represents state and local policies and programs. Key Federal policies are italicized.
 ** The study period is the period of time where the childhood obesity declines were noted. For New York City this period is between 2006 – 2010.

III. FOCAL STRATEGY DESCRIPTIONS

This section presents a more in-depth description of each strategy of focus, including settings addressed; strength, reach, and target audiences; barriers and facilitators encountered during implementation; and the role of partners in carrying them out. As noted above, these strategies are described in more detail because they directly targeted and had the greatest reach to the population of children wherein declines were found, or they were raised by respondents as important to understand in relation to the declines.

Specifically, in New York City, statistically significant declines were identified in rates of obesity among students in grades K-8. Declines in rates of obesity were significant among children in all age groups and socioeconomic and racial/ethnic populations. Though the decreases were smaller for children of minority populations, decreases were achieved among black, (1.9%) Hispanic (3.4%), and Asian/Pacific Islander (7.6%) children. White children experienced a 12.5% decrease. In this section, we begin by describing some of the initiatives occurring during this time period (between the 2006–2007 and 2010–2011 school years) that were more likely to reach this population of children in New York City public schools. These include: 1) the New York City Food Standards (comprehensive nutrition standards for all foods purchased and served by city agencies and their programs, including public schools), 2) school nutrition policies (including removing whole milk from public schools and introducing lower-fat and fat-free items and salad bars), and 3) the Move to Improve program (a classroom-based physical activity program). Following the description of those initiatives, we describe in detail two additional programs that, though not occurring in public schools, were considered by interviewees as important to understand in relation to the declines: 4) the New York City Day Care Regulations (a Board of Health requirement for physical activity, nutrition, and screen time in day care settings), and 5) the Health Bucks program (a farmers market financial incentive program to increase redemption of SNAP or WIC funds). The day care regulations and Health Bucks program were highlighted because, though they do not directly target the population of children where declines were seen, they both may have indirectly influenced the declines. By increasing physical activity and quality nutrition for children attending day care in NYC, children may be entering kindergarten at healthier weights. Also, the Health Bucks program increases access to fresh fruits and vegetables in the neighborhoods with high needs.

Following the detailed descriptions of these initiatives, we note additional strategies that took place across the school, ECE, health care and community settings in New York City. We also note ways these strategies may have addressed children from populations experiencing health disparities.

STRATEGY #1: NEW YORK CITY FOOD STANDARDS

Strategy Description

In a commitment to reduce obesity, cardiovascular disease and diabetes prevalence, Mayor Michael Bloomberg issued an executive order on September 19, 2008, creating the city's first food policy coordinator position to work in partnership with the commissioner of the Department of Health and Mental Hygiene (DOHMH) to develop and implement the NYC Food Standards (or standards). This order compelled all NYC agencies to comply with science-based standards for caloric, sugar, sodium, and fiber content for all meals and snacks purchased or prepared in city-funded programs. At the time of this executive order, NYC agencies served over 1,000,000 meals per day through varied programs and services, and 260 million meals and snacks each year.

Implementation of the standards took several years and required intensive technical assistance and education for both city agencies and supply-side food vendors and distributors. In 2011, the city council began to require each agency to submit an annual food metrics report, which is a public reporting requirement to monitor compliance. Because the food standards were issued under executive order, they are part of the metrics report and will be maintained, regardless of fluctuations in federal policy. The executive order also mandates review and revision of the standards every 3 years, based on the latest scientific evidence.

The standards influence children's consumption in early childhood education settings, schools, afterschool programs, juvenile justice facilities, and through foods purchased with food stamps, or provided by emergency food assistance programs. The NYC Department of Education (DOE) is one of the Nation's largest food purchasers. The NYC school system has 1.1 million students and serves around 850,000 meals per day, including breakfast, lunch, afterschool, and Saturday meals.

During the site visit, we did not learn of any evaluations conducted to assess the effectiveness of the implementation of the NYC Food Standards, and in particular, how it impacted the changes in school food policies. However, it was noted as very important in reinforcing the changes in school meals.

Strategy Barriers and Facilitators

Barriers

Helping agency staff understand and implement standards. Respondents indicated that intensive technical assistance was needed across the 11 city agencies over the course of multiple years to help agency staff understand the standards and to navigate implementation. Technical assistance included educating agencies on the health benefits for the populations they serve. Implementation guides were developed for agency use that accompanied trainings on the standards. Communication materials were needed for agency clients to help them understand the new standards. Training also was needed for food service units within the agencies. One respondent described this comprehensive effort by noting that food standards were incorporated into the contracts and registered dietician time was committed for training the city agencies and operators of small sites.

Renegotiating existing food vendor contracts. A second challenge identified by respondents involved contracts between city agencies and food vendors and distributors. Technical assistance was provided to agencies to navigate contract negotiations with these entities. Agencies received language from the mayor's office to include in each food contract to ensure compliance. While these contractual elements increased supply-side compliance, there were long-term contracts in place at the time (some up to 5 years long) that were more difficult to renegotiate. These cases sometimes required agencies to rebid the contracts to solicit vendors who were compliant, repeating an already lengthy and burdensome process. Otherwise, an agency might be out of compliance with the standards while they waited for existing contracts to end.

Facilitators

Scale of NYC agencies for influencing quality of food procurement. Undertaking a food standard change of this magnitude was resource intensive with regard to education, technical assistance, and implementation; however, the magnitude was also a facilitator. One respondent noted that, NYC was able to use its procurement power because the city spends \$300--\$400 million a year on school food

and other systems. As a result, the city was able to influence the quality of food available on the supply side for city agencies and also for the regular market. The health department also worked with food distributors to label their warehoused products that meet the standards so that other buyers not purchasing for city contracts also could purchase healthier foods.

Role of Partners

The DOHMH was the lead partner agency along with the mayor's office in developing and implementing the new food standards. One respondent characterized the DOHMH's influence in the development of the nutritional standards by noting that the health department worked to make the standards rigorous and science based, and by reflecting that the standards would not have been as robust without that effort. Though they researched existing nutrient standards, DOHMH staff ultimately developed a unique set of standards for NYC. Respondents also indicated that there were internal champions within some city agencies who had independently been working to improve their agency's nutrition programs before the standards were developed. These internal champions may also be characterized as partners by facilitating implementation in their agencies because the new standards built upon work they had already accomplished.

STRATEGY #2: NUTRITION STANDARDS FOR SCHOOL MEALS

Strategy Description

The NYC Food Standards described above helped shaped the nutrition standards for NYC public school meals. The NYC public school system is one of the largest in the nation, serving 1.1 million children. Given this broad reach, the changes in the nutrition standards can have a significant impact on children's health. The NYC DOE's Office of School Food (School Food) has continually updated the nutrition standards over the years to meet and often exceed the United States Department of Agriculture (USDA) standards. In mid-2000, School Food started reformulating many menu items with an emphasis on reducing calories, total and saturated fat, trans-fat and cholesterol. Strengthening these reductions, the Board of Health mandated the phasing out of trans-fat by 2008. In addition, School Food eliminated unhealthy food items (e.g., processed and high caloric foods and food items containing high-fructose corn syrup, artificial colors and flavors) and incorporated healthy substitutions (e.g., serving similar items but using whole wheat and whole grain products). During this period, School Food also increased the per meal servings of fresh fruits and vegetables and introduced salad bars. This effort has led to more than half of all NYC schools (over 1,200) with salad bars.

The NYC Food Standards helped reinforce many of the School Food standards. As mentioned earlier, the city standards included restrictions in trans-fat, sodium, sugary drinks and fried foods. They also required 2 servings of fruits and vegetables with school meals. In 2009, the DOE established nutrition standards for competitive foods that were aligned with the NYC Food Standards and the 2007 Institute of Medicine report, *Nutrition standards for foods in schools: Leading the way toward healthier youth*, to restrict calories, sodium, added sugars and fat in foods sold outside of school meal programs.

In addition to changes in nutrition, substantial changes were made to the beverages that children consumed. In 2005, School Food replaced whole milk with skim (plain and chocolate) milk and 1% plain milk. The 2008 NYC Food Standards limited calories to 10 per 8 ounces for drinks in vending machines in elementary and middle schools and 25 calories per 8 ounces in high schools, with no artificial flavors, colors or sweeteners added. The nutrition standards for competitive foods strengthened the Chancellor's Regulation by restricting vending machines to water, milk, and 100%

juice. In 2010, with the help of the NYC DOHMH, School Food introduced water jets (water dispensers) in school cafeterias to help increase the consumption of water. The water jets allowed students to drink chilled water in cups while dining in the school cafeteria. Water jets were installed in 140 elementary, middle and high schools across the city.

The following is a summary of the changes in school food made in New York City between 2003 and 2011¹:

- Limited sodium and cholesterol in school meals
- Eliminated soda and other sugary drinks from vending machines; permitted only water and 100% juice
- Increased servings of fresh fruits and vegetables offered in daily meals
- Increased the number of salad bars in elementary and high schools
- Eliminated whole milk; offered skim milk (plain and chocolate) and 1% milk
- Introduced water jets in school cafeterias
- Established nutrition standards for competitive foods
- Limited calories in vending machines to 10 calories per 8 ounces for elementary/middle schools and 25 calories per 8 ounces for high schools.

Evaluations conducted to assess the school food changes revealed positive outcomes. For example, the evaluation of water jets indicated an increase in water consumption after installation of water jets.² Other studies assessed the effects of the switch of milk consumption and found that DOE school milk purchases per student per year increased 1.3% in 2009 compared with 2004 purchases. By removing whole milk and switching from low-fat and fat-free chocolate milk, NYC public school students were served an estimated 5,960 fewer calories and 619 fewer grams of fat in 2009 than they were in 2004.³

Strategy Barriers and Facilitators

Barriers

Smaller lunch program participation by older students. Despite the changes made in school meals, one cited barrier was lunch participation, which was not as sizable among middle and high school students as among those in elementary school. Because there is limited cafeteria seating in schools, lunch breaks can occur as early as 10:30 in the morning and as late as the last period before school ends.

Limited funding for increased food costs. Another barrier noted by respondents was lack of funding. Making the changes from canned fruits and white breads to less processed and more wholesome ingredients was expensive. During 2004 to 2010, reimbursements went up, but according to one respondent, that did not keep pace with the increased food costs associated with the changes.

¹ Perlman SE, Nonas C, Lindstrom LL, Choe-Castillo J, McKie H, Alberti PM. A menu for health: changes to New York City school food, 2001 to 2011. *J Sch Health*. 2012; 82: 484-491.

² Elbel, B., Mijanovich, T., Abrams, C., Cantor, J., Dunn, L., Nonas, C., Cappola, K. et. al, (2015). A water availability intervention in New York City public schools: Influence on youth's water and milk behaviors. *American Journal of Public Health*, Vol 105, No. 2

³ Morbidity and Mortality Weekly Report (2010), Effects of Switching from Whole to Low-Fat/Fat-Free Milk in Public Schools — New York City, 2004–2009, Vol. 59, No. 3

Despite this, respondents noted they felt good about the investments New York City had made in the school meals program.

Facilitators

Mayoral support and reinforcement through citywide and Federal guidelines. Several respondents indicated that Mayor Bloomberg’s interest in health and wellness helped to facilitate the changes that occurred in New York City. He was focused on reducing obesity, and especially childhood obesity. He hired a food policy coordinator who worked with all city agencies, including the DOE and the DOHMH, to improve the food served to New Yorkers. The Office of School Food made strategic hires of executive chefs and a registered dietician to improve the nutritional content of school meals. The NYC Food Standards helped reinforce the School Food standards and created a “layering effect” of the health-promoting efforts. The reforms were strengthened by the citywide policies that helped to produce consistent messages across agencies. Additionally, Federal guidelines (e.g., the Healthy, Hunger-Free Kids Act of 2010) helped to solidify the implementation of these standards and made it easier for New York City to adopt the guidelines.

Availability of related Federal stimulus funding. Another facilitator mentioned was stimulus funding from the Communities Putting Prevention to Work (CPPW) program. CPPW was a federal program of the CDC that funded 50 communities to implement policy, systems and environmental initiatives aimed at reducing obesity and tobacco use (<http://www.cdc.gov/nccdphp/dch/programs/communitiesputtingpreventiontowork/>). Several respondents indicated that the CPPW grant helped support many of their initiatives, including the installation of the water jets and education campaign around sugar sweetened beverages. The CPPW grant is one example of how New York City leveraged other health promoting initiatives to reduce obesity rates in children.

Role of Partners

Respondents indicated that many of the changes to school meals and beverages would not have been possible without partners across sectors who understood the importance of those changes and the potential impact they might have on children. One respondent expressed the sense that having the various organizations work together on food policy seemed unprecedented and an impetus for creating change. Conversations that otherwise would not have happened were taking place. For example, individuals from the Office of School Food had discussions with architects about creating staircases for children as they entered dining rooms, or breaking down walls so that there were no barriers between sitting in the dining rooms and seeing the food as it is prepared. Additionally, many of the changes were facilitated by a strong community coalition made up of parents, health professionals, and advocates who educated children and families about healthy nutrition.

The key partners for the Office of School Food included the New York City Department of Health and Mental Hygiene (DOHMH) and the mayor’s office. Although some of these standards were considered the law, one respondent described the lingering work required to get some others to recognize the standards as beneficial. Others mentioned that the CPPW grant expanded the notion of working together to get something done, because the program encouraged cross-sector collaboration to implement large-scale, long-lasting strategies with broad reach. Some noted the hiring of the food policy coordinator from the mayor’s office as a major step in changing the culture of the DOE. According to respondents, the food policy coordinator was heavily involved and provided a healthy

tension in pushing against the status quo to have things done differently. As a result of this partnership, sodium levels were reduced and fiber was increased in school meals.

STRATEGY #3: MOVE TO IMPROVE

Strategy Description

Gym availability and outdoor playground access are often limited and overcrowded in New York City. With the goal of increasing children's physical activity, the New York City DOHMH created the Move-to-Improve (MTI) program for elementary school students. The program enables classroom teachers to integrate fitness breaks with the core academic requirements. The program was developed in partnership with the DOE and counts toward the 120 minutes of physical education (PE) per week that is mandated by the State. The program trained school teachers and directors to implement the specific curriculum and incorporate physical activity in the classroom. The activities were developed for small classroom spaces, which are a reality for most New York City schools, and the program was designed to integrate grade-appropriate academic requirements to help support teachers in meeting their learning goals.

MTI originated with the SPARK program, which trained PE teachers to raise their skill level for physical education. The city council did not support the use of city funds for a for-profit organization. As a result, the health department created MTI, which is more NYC-centric for small classroom space. It was initially promoted as a fitness break, but it has since been promoted as active learning. The program is now operated through the DOE. An evaluation of the MTI program found that levels of physical activity were higher in the MTI trained classroom than non-trained classrooms.⁴

Strategy Barriers and Facilitators

Barriers

Voluntary participation. One of the barriers to the MTI program is that it is voluntary. Though there are many incentives to participate, several respondents indicated that very little monitoring takes place. The program reaches elementary school students throughout the district, and it has trained close to 8,000 teachers, according to one respondent.

Lack of compliance by schools. Another barrier is that there are strong State standards and requirements; however, not all schools are in compliance with those requirements. Several respondents indicated that the lack of compliance is a big challenge. One respondent expressed the belief that very few elementary schools are in full compliance with the PE requirements.

Facilitators

Funding provides free curriculum and teacher payment for training. A facilitator for this program is that the curriculum is free. The program is funded by the DOHMH and DOE. Schools with 85% teacher participation received \$500 in PE equipment and materials. Teachers were paid to be trained, which helped to increase participation in the program.

⁴ Dunn, L. L., Venturanza, J. A., Walsh, R. J., & Nonas, C. A. (2012). An observational evaluation of Move-To-Improve, a classroom-based physical activity program, New York City Schools, 2010. *Preventing Chronic Disease*, 9, 120072. <http://dx.doi.org/10.5888/pcd9.120072>

Awards provided to schools for teacher participation. Also, Excellence in School Wellness Awards were given to schools that had at least 50% teacher participation in the program, which helped increase participation. One respondent noted that the awards encouraged teachers to be trained and to use the training as part of the school day. Though not a monetary award, the health department also provided Excellence Awards, which aligned well with the school awards and helped to reinforce the health-promoting activities. The program is funded mostly through a Strategic Alliance for Health grant from CDC to create a healthy school environment.

Promotion of program by teacher's union. Because the MII program is not mandatory, participation depends on school principals and teachers to encourage and support it. Through the Strategic Alliance for Health grant, the teacher's union was brought in as a partner. They helped to promote the program to their union members. A recent evaluation of the program showed an increase in levels of activity among MII-trained classrooms compared to nontrained classrooms.⁵

Role of Partners

As mentioned above, the DOE was a major partner in the development and implementation of the MII program. One respondent from the health department indicated that the health department developed, piloted and evaluated the program, showing that teachers liked the program and it helped children's academic performance. According to respondents, after the program was evaluated, it was given to DOE to continue implementation. The DOE now runs the program. The health department also partnered with other organizations (e.g., Choosing Healthy and Active Lifestyles for Kids [CHALK] in the Washington Heights neighborhood in Harlem) to do classroom-based physical activity.

STRATEGY #4: NEW YORK CITY DAY CARE REGULATIONS

Strategy Description

Though not directly targeted to the age group of children wherein declines were noted, this initiative was noted by respondents as one that may have had indirect impact. By increasing physical activity and quality nutrition for children attending day care in NYC, children may be entering kindergarten at healthier weights. In 2007, through an amendment to the health code, the NYC Board of Health enacted regulations affecting the 1,600 licensed group early child care centers across the city. For the first time, the health code included nutrition and beverage requirements, restrictions on television viewing, and minimum limits on physical activity each day. Sugary drinks could no longer be served, children were to have access to drinking water at all times, and only low- or nonfat milk was to be served to children over age 2. Children were to have 60 minutes of physical activity per day, and for children aged 3 or older, 30 minutes of that time was to be guided and structured physical activity. One respondent described the implications of the new regulations, noting that inspectors would ask about physical activity and nutrition offerings as part of their center inspections to address immunization records and other requirements.

A series of evaluations were conducted on the effects of the New York City day care regulations on early care centers. Among the findings was a narrowing of the gap in obesity prevalence in early childhood in study neighborhoods after implementation of the 2007 regulations. The evaluations

⁵ Dunn, L. L., Venturanza, J. A., Walsh, R. J., & Nonas, C. A. (2012). An observational evaluation of Move-To-Improve, a classroom-based physical activity program, New York City Schools, 2010. *Preventing Chronic Disease*, 9, 120072. <http://dx.doi.org/10.5888/pcd9.120072>

were reported in a collection for the journal *Preventing Chronic Disease* (http://www.cdc.gov/pcd/collections/pdf/PCD_NYC_Collection.pdf).

Strategy Barriers and Facilitators

Barriers

Limited space and play equipment for physical activity. Due to the density of NYC, early care centers were limited by their small spaces for physical activity. As described earlier, to support centers with implementation of the new physical activity regulations, DOHMH developed Move-to-Improve for Early Childhood. This curriculum was accompanied by teacher training and was designed for implementation in facilities lacking additional space for physical activity. The lack of play equipment for physical activity was also a barrier for centers.

Facilitators

Leadership support to fund training and equipment. Noting the lack of play equipment, NYC's city council funded additional training and equipment to further facilitate the implementation of physical activity standards. This was one example of the strong collaboration between the city and DOHMH, working together to overcome an implementation barrier. One respondent characterized this facilitator, noting that strong leadership by the DOHMH commissioner and city hall helped to support the regulations as they felt the centers should provide the best possible nutrition and health that the city could provide.

Reinforcement through Federal guidelines. Around the same time, improvements were made to Federal nutrition policies that also targeted the early childhood population; these may have facilitated the changes in the local NYC centers as well. Changes were made to the Child and Adult Care Feeding Program and to the Supplemental Nutrition Program for Women, Infants, and Children (WIC), along with the NYC Food Standards. One respondent reported that this layering helped to drive home the message to center directors of what was expected of centers and that it was helpful for NYC to foresee nutritional changes that were coming.

Role of Partners

The day care regulations were a DOHMH-led effort. The DOHMH approached the board of health to propose this amendment to the health code⁶ and developed and delivered technical assistance to centers in implementing the new regulations. The city council was also instrumental in funding equipment purchases and funding some technical assistance efforts. Additionally, one respondent stated that the American Heart Association had been very supportive in providing recommendations for the type of milk to be served in child care centers, which was low-fat and nonfat milk rather than whole milk for children older than 2 years old. This helped change requirements for WIC and CACFP.

⁶ Nonas, C., Silver, L. D., Kettel Khan, L., & Leviton, L. (2014). Rationale for New York City's Regulations on Nutrition, Physical Activity, and Screen Time in Early Child Care Centers. *Preventing Chronic Disease*, 11, 130435. doi: <http://dx.doi.org/10.5888/pcd11.130435>

STRATEGY #5: HEALTH BUCKS

Strategy Description

The Health Bucks program, which began in 2005, was developed, managed, and largely funded by the DOHMH as a way to incentivize fresh fruit and vegetable consumption among low-income populations with limited access to fresh produce. Though not directly targeted to children for whom the declines were noted, the program may have indirectly influenced the declines by increasing access to fresh fruits and vegetables in neighborhoods at higher risk for obesity. The Health Bucks program is paired with the Supplemental Nutrition Assistance Program (SNAP) electronic benefit transfer (EBT) cards in farmers markets. For every \$5 spent with an EBT card at any farmers market in NYC, the customer receives a Health Buck immediately redeemable for \$2 worth of fresh produce. This increases the purchasing power of EBT benefits by 40%. Almost all NYC farmers markets accept Health Bucks. In addition, community-based organizations (CBOs) can apply for and receive Health Bucks to use as incentives to give to clients who participate in health-related activities, such as attending a nutrition class or cooking demonstration. There are currently 250 CBOs participating in this way. About \$600,000 worth of Health Bucks are distributed throughout the farmers market season (July-Thanksgiving).

An evaluation of the program revealed evidence that Health Bucks have increased EBT sales at farmers markets in NYC.⁷ The population using EBT began redirecting their food shopping to farmers markets, where they are able to afford more fresh produce. Farmers markets also began responding to this shift in demand, and an additional benefit of the Health Bucks program cited by respondents was that farmers markets were better able to operate in low-income neighborhoods, opening up new access points in areas of high need. One respondent described that 59% of the 141 farmers markets in the city are now located in underserved neighborhoods. The program increased access to and availability of fresh produce for families living in low-income neighborhoods throughout the city.

Strategy Barriers and Facilitators

Barriers

Lack of funding for program. The primary barrier for the Health Bucks program cited by respondents was lack of funding. The DOHMH runs the program and contributes funds. There have been supplemental funding sources over the course of the program. In 2008, the Human Resources Administration (the agency that operates SNAP in NYC) funded the Health Bucks program with \$250,000 to be used at farmers markets, and it has continued to provide substantial funding annually since then. District Public Health Offices (DPHOs) have funded some activities in the communities they serve. However, funding must be requested annually, and funding by the DOHMH has decreased each year for the past four to five years.

Unusual program fit for health department. A second barrier reported by respondents is that the Health Bucks program is a burden administratively and an odd fit for a health department to manage because, as one respondent described, it is more of a business.

⁷ Baronberg, S., Dunn, L., Nonas, C., Dannefer, R., & Sacks, R. (2013). Peer reviewed: The impact of New York City's Health Bucks Program on electronic benefit transfer spending at farmers markets, 2006–2009. *Preventing Chronic Disease*, 10.

Facilitators

Mutual benefit. A primary facilitator of the Health Bucks program is that it is mutually beneficial to customers, farmers, and farmers market managers. It meets the goal of the DOHMH to increase access and availability of fresh fruits and vegetables in low-income communities by increasing the number of farmers markets in disadvantaged neighborhoods and by increasing the fresh produce purchasing power of low-income individuals.

Role of Partners

The city council and “dozens” of smaller neighborhood-based CBOs have been instrumental partners to the DOHMH for Health Bucks since its inception. The city council helped to fund and market the program, and the CBOs helped to promote the program by sharing marketing materials and informing neighborhood residents about the program. In addition, the NYC Coalition Against Hunger and the Food Bank provide SNAP/EBT screening at the farmers markets. The Stellar Farmers Market Program, also run by the DOHMH, functions as a “partner” program, in that Health Bucks and the Stellar Markets mutually support achievement of the same goals. Health Bucks serve to draw new farmers market customers from low-income communities into the markets. The Stellar Farmers Market programs engage residents in low-income neighborhoods in market-related activities (market tours, nutrition classes, cooking demonstrations, etc.) as a means to increase their consumption of fruits and vegetables. As an incentive, participants in the Stellar Farmers Market activities can receive a Health Buck. This engages new farmers market users in relevant nutrition education and increases their fresh produce buying power. Stellar reaches about 40,000 residents per season. The program now has a stellar for kids program, located in farmers markets near WIC centers. The program, called ‘Come See What’s Cooking Kids,’ is a child-focused nutrition education program.

OTHER STRATEGIES ACROSS SETTINGS

As noted earlier, the focal strategies described above are some of the key strategies implemented in New York City during the study period. Across settings, several other strategies were discussed during the site visit interviews. Some of these were programs, local policies, and initiatives. The reach of these strategies ranged from a few schools to community-wide initiatives to State and Federal policies implemented locally. Below, we discuss these by setting. Appendix E shows all the strategies reported from the site visit interviews, matrixed by setting and type.

School Setting

In addition to the many school-related strategies described above, other strategies reported by respondents were implemented in the school setting. One such effort was the Universal Free Breakfast program, launched in 2003. The program aimed to reduce the stigma associated with subsidized meals and provided children with a healthy diet at the beginning of the school day. The program increased participation in breakfast, particularly among low-income children. Another nutrition-related strategy was the USDA-funded Fresh Fruit and Vegetable Program (FFVP), which provides all children in participating schools a variety of fresh fruits and vegetables throughout the school day and is used as a snack option for kids. First started as a pilot program, the FFVP has expanded dramatically in New York City with 67 (mostly needy) schools participating in the program.

Along with the Move-to-Improve program (and SPARK, which preceded MII), implementation of other physical activity-related strategies in the school setting was reported. This includes FITNESSGRAM, an annual assessment for children in grades K-12 to determine the healthy fitness

zone of children based on age and gender. FITNESSGRAM is part of the Principal's checklist of requirements and is conducted by more than 70% of schools. Approximately 860,000 BMIs per year are measured. This information is linked to attendance, language spoken at home, meal code status, and academics. The FITNESSGRAM is another example of agencies working together, as the data are measured by the DOE, but cleaned and analyzed by the DOHMH. The Mighty Milers Program, an incentive-based running program held during and after school is offered by Road Runners.

Some strategies incorporated both nutrition and physical activity. One included the Healthy Options and Physical Activity Program, run by the school nurses, which helps to educate New York City school children who are at risk for excessive weight. Following a clinical assessment, school nurses work with students and their families to make referrals to primary care physicians and community organizations to address the problem using both nutrition and physical activity interventions. School nurses are also trained to ensure that the schools know what programs are available.

Early Care and Education Setting

Other strategies implemented in the early care and education setting include the Farm-to-Preschool initiative. This program is a partnership between the DOHMH and GrowNYC, a not-for-profit organization aimed at improving the quality of life through environmental programs. The program provides fresh, locally grown fruits and vegetables to participating preschools and early care centers. In the spirit of a number of community groups working with city government, EatPlayGrow is another program targeting early childhood that focuses on both nutrition and physical activity. Developed in partnership with the National Institutes of Health and the Children's Museum of Manhattan, this health curriculum aims to teach children 6 years old and under and their parents to make healthy nutrition and physical activity choices. Also of note for this population are Head Start-based initiatives to improve the nutrition and physical activity of young children. Eat Well Play Hard in childcare settings is a New York state program that is disseminated by the DOHMH. Together, all these programs and others have worked to design common messages about the importance of nutrition and physical activity and to ensure that the same message is sent to every childcare center in NYC.

Community Setting

Several nutrition and physical activity strategies implemented in the community were mentioned during site visit interviews. One nutrition-related strategy was the Healthy Bodegas initiative, launched in 2005 by the DOHMH. The goal of the initiative was to increase the availability of and access to healthy food in New York City neighborhoods with the highest rates of poverty and burden of chronic disease. In New York City, these are in neighborhood where the District Public Health Offices are located (i.e., South Bronx, East and Central Harlem, and North and Central Brooklyn). Participating bodegas (small corner stores)—usually located near schools, WIC centers or other community centers—agreed to label and promote healthy items, and carry more wholesome foods, such as fruits and vegetables, whole grains, and low-fat or fat-free milk. Respondents mentioned that the initiative has taken on different iterations. As a result of a campaign effort, there was community support and buy-in to adopt-a-shop, which led to more than 1,000 bodegas participating in the initiative. There were mixed reactions to this program. Some respondents felt the program was underfunded and initial targets were not met. Other respondents felt the initiative was a success. The program works closely with similar programs in Philadelphia and Baltimore.

The Active Design Guidelines were created to increase physical activity among New York City residents. The guidelines provide architects and urban designers with strategies for creating healthier

buildings, streets, neighborhoods and urban spaces to encourage walking, biking, recreation, and active transport. These efforts involved various agencies working together, including Parks and Recreation working together with the health department. Examples include: (1) “Make New York City Your Gym,” a media campaign that offered free exercise programs and walking and running groups across the city; and (2) Shape Up NYC, a program dedicated to training adult physical fitness instructors to offer and conduct free exercise classes. The guidelines helped to create more stairwells in schools to increase physical activity. Other physical activity-related strategies included Play Streets, a community-sponsored *cyclonia* event where streets are closed to automobile traffic and opened for walking and cycling to promote physical activity; and Schoolyards to Playground, a program that opens the school playgrounds to the community to promote physical activity.

New York City also implemented significant citywide nutrition policies. In 2006, the Board of Health approved a trans-fat restriction for all NYC restaurants. In 2007, there were changes in nutrition and physical activity in early childcare centers, and in 2008, a menu labeling policy required food service establishments (i.e., chain restaurants) to post calorie information prominently on menu boards and menus. All of these included a media campaign in the subways and on radio. A media campaign that focused on sugary drinks was launched in 2008. The campaign involved multiple ads about the dangers of consuming sugar sweetened beverages. These were launched in subways, on television commercials, and through social media. In addition, the city also tried to convince the State that an excise tax on sugary drinks was important, via a statewide tax campaign introduced in 2009 and in 2011, but that initiative did not pass. They also submitted a proposal to the USDA to remove sugary drinks from SNAP benefits. The policies related to reducing the portion sizes of beverages passed the Board of Health, but the DOHMH lost in a legal suit. Although there was little success in these initiatives, respondents mentioned that the exposure to the media campaign helped to reduce sugary drink consumption, as evidenced by data from the Community Health Survey and YRBS. Many people indicated that the media campaign was very powerful, and it helped change the conversation around how certain foods and beverages can impact health.

Other reported nutrition-related strategies included the following: (1) Mobile Markets (a collaboration between the New York City Housing Authority and City Harvest) provided free produce and nutrition resources four times a month in New York City neighborhoods; (2) The City council voted to establish 1000 permits for Green Carts—mobile fruit and vegetable carts that were only allowed to vend in high poverty areas where consumption was very low (as evidenced through the community health survey); (3) The FRESH (Food Retail Expansion to Support Health) Program provided small stores and supermarkets in low income areas with tax incentives and revolving loans as long as retailers selected items that met food standards; (4) City Harvest Healthy Neighborhoods Initiative, a program that rescues and delivers food to soup kitchens and food pantries in communities most impacted by hunger, food insecurity, and poverty. For these efforts, many city agencies and community-based organizations came together to ensure that every supermarket learned how to donate food, and every pantry and soup kitchen knew where to find extra healthy food.

Health Care Setting

Initiatives implemented in the health care setting often involved collaboration with the health department, hospitals, or other organizations. Strategies reported as implemented in the health care setting included: (1) baby-friendly hospitals that encourage and promote breastfeeding for new mothers through the Breastfeeding Hospital Collaboratives; (2) CHALK (Choosing Healthy and Active Lifestyles for Kids), a collaboration between New York-Presbyterian Hospital/Ambulatory

Care Network and Columbia University Medical Center's Department of Child and Adolescent Health, aimed at reducing the prevalence of childhood obesity in Northern Manhattan and creating healthy environments for kids; (3) the Public Health Detailing Program: Children's Obesity Campaign, which is designed to send highly trained representatives into primary care provider practices to provide evidenced-based recommendations, clinical tools, provider resources, and patient education materials to health providers and clinical care teams. This campaign to reduce obesity in children focused on pediatricians in the District Public Health Office neighborhoods of the South Bronx, East and Central Harlem, and North and Central Brooklyn; (4) the Power Program for Overweight Education and Reduction (Columbia Medical Center), a program for obesity screening of comorbidities and treatment; and (4) the Adolescent Bariatric Surgery Program (Columbia Medical Center), a bariatric surgery program for teenagers with morbid obesity (BMI > 35 with comorbidities or BMI > 40 without comorbidities).

STRATEGIES TARGETING POPULATIONS EXPERIENCING HEALTH DISPARITIES

During the study period, several high-impact strategies took place that were featured as focal strategies earlier in this report (specifically, the NYC school nutrition policies, the NYC Food Standards, and the NYC Day Care Regulations). These strategies were aimed at the general population. Those study respondents with a primary focus on children among health disparate populations noted that these system-wide policy changes alone, made during the Bloomberg administration, would be inadequate to address the causes of childhood obesity in populations experiencing health disparities. Though the declines seen in NYC were largely in non-minority children, there are great efforts being made in the neighborhoods of highest need. These efforts range from neighborhood- or population-focused programs and policies to strategic infrastructure that facilitates the implementation of interventions that benefit populations experiencing health disparities. More focused strategies to address health inequities include provision of free school breakfasts and lunches, and efforts to improve access to and availability of fresh produce through the Health Bucks program and the increased presence of farmers markets in low-income neighborhoods. In addition to the specific strategies that were implemented, two organizational infrastructure supports help to address health disparities: the District Public Health Offices and the NYC Housing Authority.

District Public Health Offices

An important characteristic of the NYC public health infrastructure that facilitates concentrated efforts in neighborhoods of greatest need are the three DPHOs located in the south Bronx, east and central Harlem, and north and central Brooklyn. These offices were created in 2002 and are strategically located in neighborhoods with the highest poverty and highest rates of diet-related disease in the city. To address health disparities in these high-need neighborhoods, the DPHOs perform three functions:

- Inform, develop, and advocate for public health policies
- Conduct local research, share findings, and take action based on findings
- Develop and implement community-based programs and initiatives, often with local partners⁸

By design, the DPHOs are intended to “create a community conversation and be part of the community in trying to solve the community’s health problems.” As such, the three DPHOs have

⁸ For additional information, see <http://www.nyc.gov/html/doh/html/diseases/dpho-homepage.shtml>

both shared and individually-tailored neighborhood initiatives. Therefore, in addition to individualized areas of focus, such as asthma management in east Harlem, teen sexual health in the south Bronx, and maternal and infant health in Brooklyn, all three DPHOs are working on nutrition and physical activity initiatives. Targeted strategies in these high-need neighborhoods supplement policy improvements aimed at the general population, and there is encouraging evidence that this approach is effective. Two of the three high-risk public health districts showed declines in early childhood obesity following the implementation of the NYC Child Care Regulations.⁹

The east Harlem Public Health District, a district that has generated significant funding to address health disparities, has a strong cadre of CBOs that range from organizations with the infrastructure to attract and manage long-term Federal funding to small churches and grassroots advocacy organizations focused on social justice or health-related interventions. The east Harlem DPHO does focused work in neighborhood schools to improve nutrition and physical activity during the school day. One barrier to this is the colocation of more than one school in a single building. There is a charter school movement in NYC, and many charter schools have been started in east Harlem. There is also a lack of school buildings in this health district; therefore, as many as four schools may occupy a single school building. This leads to the colocation of schools with different funding streams and ways of operating, creating challenges for implementation of district-wide policies, such as the nutrition and physical activity requirements. One respondent described that colocated schools inhibit policy improvements and implementation because they have to share the schoolyard, cafeteria and gym. The lead school may be able to determine what occurs in the afterschool programming or what menu options will be provided. This colocation can also highlight disparities where, in one example, a school has air conditioning and a chef on the higher floors of a building because that is where the charters are located, but the rest of the schools in the building do not.

Respondents also described a holistic approach to health as a way to improve childhood obesity in east Harlem. They described a longer-term view of health improvement that included economic justice and access to resources, including food. They felt that addressing more systemic conditions with the goal of reducing diet-related disease would improve health for all—including children. The Campaign for Healthy Food in East Harlem is an example of partnerships across varied organizations, including those serving youth; those serving seniors; those with a maternal and child health focus; the DPHO; and others, to develop and implement a food plan for east Harlem. One respondent with the DOHMH explained that they took a year talking with about 30 groups that conduct work related to food and nutrition to generate ideas, identify areas of consensus, and establish long-range targets for the group. For additional information, see <http://nycfoodpolicy.org/projects/east-harlem-campaign/>.

NYC Housing Authority

Another part of the city's infrastructure that serves populations experiencing health disparities is the New York City Housing Authority (NYCHA), which operates 328 public housing developments across NYC that house between 400,000 and 500,000 residents with low to no income. More than just a provider of public housing, NYCHA also has internal programming priorities that focus on economic opportunity, health, and health care access for its residents. To accomplish work in these

⁹ Sekhobo JP, Edmunds LS, Dalenius K, Jernigan J, Davis CF, Giddings M, et al. Neighborhood Disparities in Prevalence of Childhood Obesity Among Low-Income Children Before and After Implementation of New York City Child Care Regulations. *Prev Chronic Dis* 2014;11:140152. DOI: <http://dx.doi.org/10.5888/pcd11.140152>.

priority areas, NYCHA works closely with residents, resident leaders, and partners at the neighborhood and city levels (including DOE, the DOHMH, and Parks and Recreation).

In the area of health, one of NYCHA's top priorities is healthy living and chronic disease prevention. This work includes healthy food access initiatives, physical activity access initiatives, and education and support programs focused on chronic disease. Like the DPHOs, NYCHA's housing developments provide access points to neighborhoods where residents experience health disparities. NYCHA community centers offer organized team sports leagues and dance, karate, and exercise classes for residents at their facilities, as well as cooking and nutrition education programming. These sites also have afterschool programming that includes afterschool snacks and dinners for school-aged children who live in the developments and surrounding neighborhoods. All snacks and meals served in these locations meet the NYC school nutrition guidelines. NYCHA community centers also operate as Summer Meals Program sites for food-insecure school children during the summer months.

NYCHA also works in partnership with City Harvest to address food insecurity in many of the public housing developments. City Harvest Mobile Markets provide free produce and nutrition resources four times a month in some NYCHA housing developments. NYCHA also operates 700 food gardens across their developments and 1 farm, with 4 additional farms in varied stages of establishment. Produce from the farms is distributed to residents, with priority going to resident volunteers.

IV. DISCUSSION

SCOPE AND SETTINGS OF STRATEGIES

New York City developed a comprehensive approach to reducing childhood obesity. This approach included improving access to fresh produce in the community; revamping nutrition policies in public schools to include more fruits and vegetables, whole grains, low-fat milk and more access to water; improving the physical activity levels of children in the classroom, before and after school, and in the community; making major changes in the regulations of nutrition and physical activity in early care settings; and encouraging breastfeeding in new mothers. Many of these initiatives were complementary in nature, with a goal of reducing disparities. The strategies implemented ranged from neighborhood-based programs, to district-wide policies to citywide initiatives. They were implemented also across a variety of settings—at the community level, within city agencies, in schools and early care centers, and in health care settings. Of particular importance was the overarching policy to work across city agencies such as the DOHMH and DOE to implement health-promoting efforts.

At the community level, many programs with similar focus were combined to maximize the effort and potential impact of the program.¹⁰ For instance, Health Bucks was combined with nutrition education classes at farmers markets, where recipes for healthy eating and taste testing is shared with consumers who then receive a health buck to use at the market. This was very successful (reaching approximately 40,000 people per season, and it created an offshoot for children in markets near WIC centers (e.g., the “Come see what’s cooking, kids” initiative). These cooking demonstrations worked to change cultural norms about how healthy eating should look.

In health care settings, interventions focused on working with pediatric offices to incorporate preventative care in their practices and deliver more messages about proper nutrition, diet, and exercise. The CHALK program, started by Columbia Presbyterian Hospital, is an integrative program that focused on creating healthy environments for children in the community and at school. In addition, there is a push by the healthcare sector to integrate medical nutrition programs into trainings for doctors to discuss healthy lifestyle changes during well checkups. This dovetailed with the physician detailing program from the DOHMH, which highlighted clinical guidelines for obesity for both children and adults in hospitals and clinics and doctors’ offices.

It was noted that CPPW, the program aimed at implementing policy, systems and environmental changes to reduce obesity and tobacco use, helped to move forward many of the programs and policies implemented to reduce childhood obesity. New York City leveraged the large resources provided through CPPW funding to develop and sustain partnerships, form stronger relationships across city agencies and support programs. It was also through CPPW funding, that many strategies were evaluated. The CPPW program is an example of how New York City used other health promoting initiatives to support the childhood obesity work.

In general, New York City seeks to change the environment where people live, work, and play to be healthier by increasing opportunities for physical activity and access to healthier foods. The DOHMH led the effort to set nutrition standards across all city agencies, including schools, and to change the

¹⁰ Sacks R, Yi SS, Nonas C. Increasing Access to Fruits and vegetables: Perspectives from the New York City experience. *Am J Pub Health* 2015; e1-e9.

food retail environment to provide healthier options (e.g., Healthy Bodegas) and easier access to healthy foods (e.g., Green Carts, Health Bucks), while decreasing unhealthy ones (e.g., media messages about the negative effects of consuming sugar-sweetened beverages). Built environment initiatives to promote physical activity included developing the “Active Design Guidelines,” which encourage urban planners to support active transport such as walking, biking, and using stairwells, creating more opportunities for New Yorkers to be physically active.

NATURE OF DECLINES IDENTIFIED

In New York City, reports of a statistically significant obesity decline were noted in children in grades K–8, from 2006–2007 to 2010–2011, with the largest decrease found in children ages 5–6. Many respondents noted that the reported declines cannot be attributed to any single intervention or initiative; rather, a combination of strategies more likely made the difference. Among younger children, New York City made investments to change the environment in early care centers. In 2007, the DOHMH instituted new regulations on healthy beverages (e.g., restricting sugar-sweetened beverages and whole milk), limiting screen time, and increasing physical activity. The reach of these measures was unprecedented, since the regulations applied to the entire population of city-licensed day care and group-based early care centers. Other initiatives were implemented in the child care centers, such as Eat Well, Play Hard, which provided nutrition and physical activity curricula and EatPlayGrow, which provided a series of lifestyle lessons and hands-on activities to teach children and their caregivers to make healthier choices with nutrition and physical activity.

For school age children, many respondents attributed the reported declines to school nutrition policies that eliminated whole milk and introduced more wholesome foods, such as whole grains and fruits and vegetables. School Food reformulated many menu items with an emphasis on reducing calories, total and saturated fat, trans-fat and cholesterol. The policies also introduced salad bars and installation of water jets to encourage water consumption. These changes in school nutrition were substantial and were reinforced by the New York City Food Standards required for all city agencies. Changes in school nutrition also included nutrition standards for competitive foods strengthened the Chancellor’s Regulation by restricting vending machines to water, milk, and 100% juice. Respondents were less confident about the physical activity initiatives taking place in the classrooms. For example, because the MTI program is not mandatory and was not monitored regularly, respondents felt that implementation varied, potentially lessening the impact of the program.

Some respondents noted that the decreases in obesity rates were much greater among White, middle-class children than poor African-American and Latino children. This was attributable to income inequalities among the two groups; respondents noted that poverty was a fundamental driver of obesity. Because the declines noted were modest, it is uncertain whether more substantial decreases in obesity will occur if income inequality continues to exist, and whether the declines noted are sustainable. Respondents noted that in order to see lasting and sustainable changes, the promotion of unhealthy foods needs to change substantially.

EXAMINING HEALTH DISPARITIES

A large number of strategies implemented in New York City were aimed at populations and neighborhoods where health disparities are likely to exist. As noted earlier, the District Public Health Offices played a critical role in ensuring that the appropriate neighborhoods were targeted. These strategies had the goals of increasing access to, and availability and affordability of healthy foods and physical activity opportunities among low-income populations. For example, the Health Bucks

program was intended to increase the affordability of fresh produce for all low-income New York City residents. In some instances, there were neighborhoods across the city with a limited number of grocery stores. The FRESH program helped to provide zoning and financial incentives to establish grocery stores in underserved neighborhoods. The Healthy Bodegas initiative was designed to increase the amount and promotion of healthy foods in high-need neighborhoods, and the Green Carts initiative increased provision of fresh fruits and vegetables through mobile vendors in focused neighborhoods where at least 14% of residents indicated that they had not consumed fruits and vegetables recently. These mobile markets have EBT terminals to facilitate access by SNAP recipients. All of these initiatives took on a greater role in the communities as CBOs and hospitals began to ‘adopt a shop,’ spreading the work and improving the outcomes.

Despite these efforts, the evidence showing significant declines in obesity rates among children living in high-risk neighborhoods is inconsistent. There are modest declines among some age groups living in high poverty areas. The data show a narrowing of the gap in obesity prevalence rates within the early childhood population between high-risk and low-risk neighborhoods in two of the three DPHOs (Harlem and Bronx).

CROSS-SECTOR COLLABORATION

Cross-sector collaboration involves a combined effort across multiple sectors to create significant and sustainable improvements in health. Various types of collaboration are possible in the work for building healthy communities, including among public-sector agencies, non-profit and other community organizations, and private-sector companies. In New York City, there was overwhelming cross-sector collaboration within and among the public agencies (e.g., DOE, DOHMH, NYCHA, hospitals, the Mayor’s office and city council); community-based and other local organizations (e.g., non-profit organizations such as GrowNYC and City Harvest), and private businesses (e.g., local bodegas). These groups worked together to develop and enforce policies and programs that would promote a culture of health. On numerous occasions respondents described collaborations that had been in place and the importance of forming relationships and building partnerships to do this work effectively. Across public health agencies, the health care sector, schools and local business, partnerships formed to support health promotion programs and mobilize community members to spread messages of integrating healthy lifestyles into the everyday lives of all children.

STUDY LIMITATIONS

While the New York City site visit illuminated many policies and strategies that likely impacted obesity declines among school-age children, data collection and analysis contained some mitigating factors that could limit application and generalization of the study’s findings. First, this study was exploratory in nature, and did not have a control group or measure changes over time. Through interviews, policy scans, and document reviews, many items emerged that likely impacted childhood obesity declines in New York City, but the study does not allow for direct determination of causality. Further, snowball sampling and a compressed timeframe meant that the team was limited in how many individuals could complete the inventory worksheet and be interviewed during the study period. Our team was only able to speak to a small subset of individuals in the public, private, and non-profit sectors who played a role in advancing the changes that presumably brought about obesity declines.

Also, the information gleaned from this study is characteristic of the types of policies, strategies, challenges, and facilitators related to combating obesity declines in New York City. Despite the great deal of information acquired before, during, and after the site visit, this information cannot be

considered comprehensive. Finally, a great deal of the information collected was retrospective. Interviewees described, to the best of their abilities, strategies undertaken sometimes 5 to 15 years prior, but their memories may not always be complete or precise when it comes to the specifics and timeframe of developing and implementing various strategies. When possible, the study team used documented reports to try and confirm the exact details and timing of policy changes and strategy implementation.

V. CONCLUSION

New York City implemented a comprehensive slate of initiatives, policies, and programs to address childhood obesity. These initiatives were focused in specific neighborhoods, citywide, and across school districts and early care centers. Many were supported by Federal or State policies reinforcing healthy food standards. The strategies were implemented across a variety of settings and used complementary strategies to ensure that they addressed all aspects of the issues and reached their target population. The emphasis on complementary strategies helped to support change within the community to increase demands for healthy foods and beverages. The strategies also helped to expand the availability of healthy foods and opportunities for physical activity. Having these strategies implemented in multiple settings ensures that those who need them the most will be exposed at multiple levels. Also of importance is consistency in policies implemented across early childhood through adolescence and the level of enforcement of those policies. In New York City, policies were reinforced at multiple levels. For example, the changes in the school nutrition policies were reinforced by the New York City Food Standards. Respondents stated that this cumulative effect potentially impacted the decline in the obesity rates seen in New York City children. Some respondents referred to this as the “layering effect”—changing policies and developing programs at the Federal, State, and local levels ensures that obesity is addressed at all levels.

New York City’s efforts were focused on reducing health disparities and reaching neighborhoods with the highest need. Since disparities in access to healthy food is found in neighborhoods of high poverty and minority composition, New York City focused many initiatives in areas served by the three District Public Health Offices: South Bronx, East and Central Harlem, and Northern and Central Brooklyn. People who live in these areas have the highest risk of obesity-related diseases, such as type 2 diabetes. The initiatives’ aim was to increase the affordability of and access to fresh produce, healthy food items, and non-sugar-sweetened beverages in these low-income neighborhoods. In addition to increasing access, there was a focus on increasing knowledge (e.g., via nutrition education) to help individuals make better choices and offering them the tools (e.g., cooking classes) to help increase their capacity to eat healthier. One important point made by a respondent is that while New York City has done a good job increasing access to healthy foods, but much work remains to be done to decrease consumption of less healthy items.

The changes seen in New York City is an example of how communities can work together to foster a culture of health. Starting with the mayor, the community created an environment where a healthier lifestyle was not only encouraged, but also made a part of everyday life. City agencies, businesses, and community-based and other local organizations all worked together to foster healthy communities, especially among the neediest neighborhoods. Schools and early childhood centers, where children spend the bulk of their days, placed emphasis on eating healthy and staying active. Altogether, there is a shared value that all individuals should have access to affordable healthy foods and opportunities to be active – which will help them make healthier choices in life.

Overall, our findings indicate that New York City embraced the challenge of combating obesity through the dedication, commitment, and cross-sector collaboration of many public, private, nonprofit, and community-based organizations. Led by a mayor with strong interest in public health and an astute health commissioner, the city addressed the issue from multiple angles, targeting the neediest of people and concentrating on preschool and school-age children to intervene early, before

they become unhealthy adults. Consistent with these efforts, significant improvements were made to New York City’s environment to make it healthier for all residents.

APPENDIX A: CHILDHOOD OBESITY DECLINES EXPERT PANEL MEMBERS

Childhood Obesity Declines Expert Panel Members	
Name	Organization
1. Rachel Ballard-Barbash	National Cancer Institute, National Institutes of Health
2. Nisha Botchwey	School of City and Regional Planning, Georgia Institute of Technology
3. Bridget Catlin	Population Health Institute, University of Wisconsin
4. Allen Cheadle	Center for Community Health & Evaluation, Group Health Research Institute
5. Jamie Chriqui	Institute for Health Research and Policy, University of Illinois at Chicago
6. Patricia Crawford	School of Public Health, University of California, Berkeley
7. Christina Economos	Friedman School of Nutrition Science and Policy, Tufts University
8. Karen Glanz	Perelman School of Medicine, University of Pennsylvania
9. Shiriki Kumanyika	Perelman School of Medicine, University of Pennsylvania
10. Cathy Nonas	New York City Department of Health and Mental Hygiene
11. Punam Ohri-Vachaspati	Arizona State University
12. Debra Rog	Westat
13. Brian Saelens	Seattle Children's Hospital
14. Jay Variyam	Economic Research Service, U.S. Department of Agriculture
15. Sallie Yoshida	The Sarah Samuels Center for Public Health Research & Evaluation

APPENDIX B. CONTEXTUAL DATA

DEMOGRAPHIC CONTEXT

The ICF Macro team collected county-level sociodemographic data for the baseline and follow-up years of New York City’s timeline—2006-07 and 2010-11, respectively. The data gathered prior to the site visit were helpful to better understand contextual factors in the community that might affect the population and any changes in health outcomes. Variables collected include basic demographics such as total population, race/ethnicity, educational attainment, unemployment rate (adults 20–64), percent living below the Federal poverty level (adults 18–64), and percent of adults without health insurance (adults 18–64). To establish a baseline and follow-up, 2007 and 2011 demographic data were taken at the county level from the U.S. Census American Community Survey.

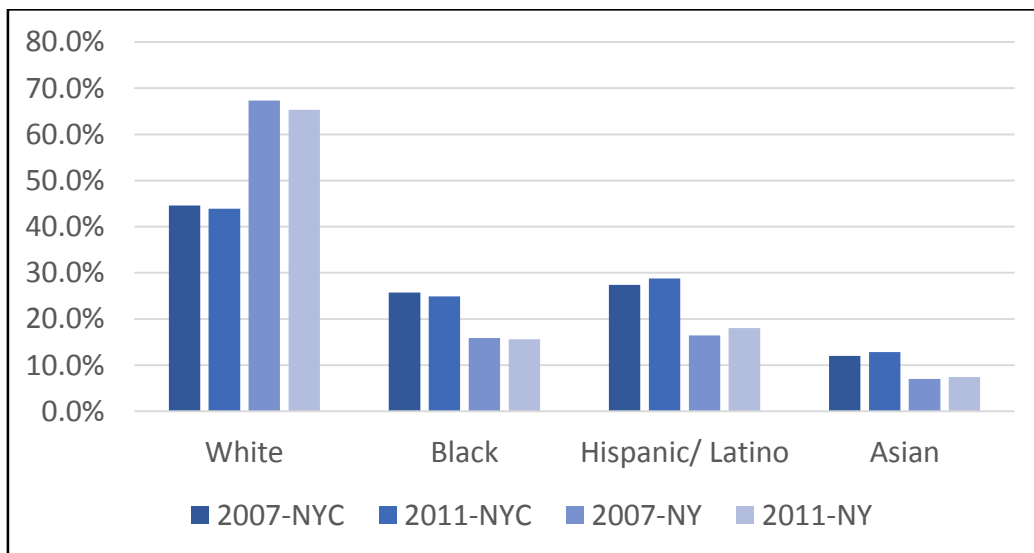
The data presented below in Table B.1 and Figure B.1 provide a snapshot of the demographic shifts that took place in New York City (all five counties) between 2007 and 2011 as compared with the state of New York overall.

Table B.1: New York City and New York State Demographic Data, 2007 and 2011

Demographic Variable	New York City		New York State	
	2007	2011	2007	2011
Population	8.27 million	8.24 million	19.297 million	19.465 million
Unemployment rate	6.4%	10.6%	5.6%	8.9%
Living below poverty level	15.4%	18.4%	12.0%	14.6%
No health insurance	19.8%*	20.2%	15.9%*	16.0%
High school diploma or less	46.1%	41.1%	44.7%	40.4%

* Baseline data from 2008; not available for 2007.

Figure B.1: New York City and New York State Population Percentage by Race/Ethnicity, 2007 and 2011



American Indian/Alaska Native:
 0.3% (2007-NYC), 0.3% (2011-NYC)
 0.3% (2007-NY), 0.3% (2011-NY)

Nutrition and Physical Activity Context

ICF Macro also collected food and physical environment data for 2007 and 2011 to provide a more comprehensive snapshot of New York City at the project baseline and in follow-up years. Data related to the food environment and physical activity environment were largely compiled from County Business Patterns (CBP),¹ an annual series producing economic data by industry with business categorized according to the North American Industry Classification System (NAICS). To establish a measure of the food and physical activity environment we extracted data for the following categories: grocery stores,² convenience stores (including gas stations with convenience stores),³ fruit and vegetable markets,⁴ full service restaurants,⁵ limited service restaurants,⁶ and fitness/recreation centers.⁷ The number of establishments by type was documented for 2007 and 2011 and divided by the total population county to arrive at the number of establishments per 1,000 residents. In addition to data from the Census County Business Patterns, we also assessed the number of farmers markets in the area and the payment method accepted using data of the United States Department of Agriculture’s Farmers Market Directory.⁸ Data were not available retrospectively, so numbers reflect the number of farmers markets in the area as of 2014. Lastly, we used data from the County Health rankings to capture the percentage of county residents with access⁹ to recreation opportunities. These data were only available for 2014.

The food environment data suggests an overall increase in the availability of food-related establishments from 2007 to 2011; see Table B.2, below.

Table B.2: New York City Food Environment, 2007 and 2011

Store Type	Establishments 2007	Establishments 2011
Grocery Store	5,337 .78 per 1,000 residents	6,945 .84 per 1,000 residents
Convenience Stores (with and without gas stations)	794 .10 per 1,000 residents	974 .12 per 1,000 residents
Fruit & Vegetable Markets	399 .05 per 1,000 residents	506 .06 per 1,000 residents

¹ U.S. Census County Business Patterns. [Accessed on September 17, 2015]. Available at: <http://www.census.gov/econ/cbp/>.

² Establishments generally known as supermarkets and grocery stores primarily engaged in retailing a general line of food, such as canned and frozen foods; fresh fruits and vegetables; and fresh and prepared meats, fish, and poultry. Included in this industry are delicatessen-type establishments primarily engaged in retailing a general line of food.

³ Establishments known as convenience stores or food marts primarily engaged in retailing a limited line of goods that generally includes milk, bread, soda, and snacks.

⁴ Establishments primarily engaged in retailing fresh fruits and vegetables.

⁵ Establishments primarily engaged in providing food services to patrons who order and are served while seated (i.e., waiter/waitress service) and pay after eating.

⁶ Establishments primarily engaged in providing food services (except snack and nonalcoholic beverage bars) where patrons generally order or select items and pay before eating. Food and drink may be consumed on premises, taken out, or delivered to customers’ location.

⁷ Establishments primarily engaged in operating fitness and recreational sports facilities featuring exercise and other active physical fitness conditioning or recreational sports activities, such as swimming, skating, or racquet sports.

⁸ USDA Agriculture Marketing Services. National Farmers Market Directory – 2014. [Accessed on September 14, 2015]. Available at: <http://www.ams.usda.gov/local-food-directories/farmersmarkets>.

⁹ Access is defined as living: in a census block that is within 0.5 miles of a park, within 1 mile of a recreation facility in urban areas, or within 3 miles of a recreation facility in rural areas.

Store Type	Establishments 2007	Establishments 2011
Full Service Restaurants	7,335 .89 per 1,000 residents	8,267 1.0 per 1,000 residents
Limited Service Restaurants	5,236 .63 per 1,000 residents	7,329 .89 per 1,000 resident
Farmers Markets		
159 as of 2014	60% Accepting SNAP, 68% WIC and 55% both SNAP and WIC	

The physical activity environment access data, depicted in Table B.3 below, suggest an overall maintenance in the availability of fitness centers from 2007 to 2011, .09 per 1,000 residents in 2007 and .09 per 1,000 residents in 2011. In 2014, 99.8% of New York City residents had access to at least one recreation opportunity.

Table B.3: New York City Physical Activity Environment, 2007 and 2010

Type of Physical Activity Environment Available	Ratio of Establishments 2007	Ratio of Establishments 2010
Availability of Fitness Centers	.09 per 1,000 residents	.09 per 1,000 residents
Recreational opportunities (2014)		
99.8% of residents lived within 1 mile of at least one recreation opportunity.		

APPENDIX C. INTERVIEWEES AND TITLES

Site visitors conducted a total of 25 interviews with 30 people. On average, the interviews lasted approximately one hour. Below is a list of the interviewees for New York City and their titles at the time of the interviews.

Name	Title
1. Amy Schwart	Professor of Public Policy at New York University
2. Michele Leardo	Professor of Public Policy at New York University
3. Andrea Matos Bachrach	Senior Manager, Community Health Initiatives, New York City Housing Authority
4. Andy Ackerman	Director, Children’s Museum of Manhattan
5. Cathy Nonas	Senior Advisor, Center for Health Equity, New York City Department of Health & Mental Hygiene
6. Christine Johnson Curtis	Assistant Commissioner, Bureau of Chronic Disease Prevention, New York City Department of Health & Mental Hygiene
7. Cliff Sperber	Vice President of New York Road Runners’ Youth and Community Services Division, Road Runners
8. Deborah Kaplan	Assistant Commissioner, Maternal and Child Health, New York City Department of Health and Mental Hygiene
9. Elizabeth Solomon	Senior Program Manager, Nutrition Education, Bureau of Chronic Disease Prevention and Tobacco Control
10. Emily Chase	Chief, Programming and Strategic Management for Recreation, New York City Parks and Recreation
11. Kendra Koch	Physical Activity Coordinator, New York City Parks and Recreation
12. Ileana Vargas	Pediatric Endocrinologist at Columbia University Medical Center’s Naomi Berrie Diabetes Center
13. Joanne Eichel	Director of School Health Programs, New York Academy of Medicine
14. Kate MacKenzie	Director of Policy, City Harvest
15. Kevin Konty	Senior Advisor, Bureau of Epidemiology, New York City Department of Health & Mental Hygiene
16. Lillian Dunn	New York City Department of Education
17. Lindsey Harr	Executive Director, Office of School Wellness Programs, New York City Department of Education
18. Catherine Travers	Director of Nursing and Professional Development, New York City Department of Education
19. Mario Drummonds	Executive Director, Northern Manhattan Perinatal Partnership
20. Mary Ann Chiasson	Vice President, Research and Evaluation, Public Health Solutions
21. Michael Hurwitz	Director of the Greenmarkets Program, GrowNYC

Name	Title
22. Michelle Dresser	Director of the Pediatric Obesity Detailing Program, New York City Department of Health and Mental Hygiene
23. Nicholas Freudenberg	Director at New York City Food Policy Center
24. Philip Noyes	Lead Researcher, Transportation Issues, Brooklyn District of Public Health Office
25. Roger Hayes 26. Rebecca Lee	Assistant Commissioner, Harlem District Public Health Office School Wellness, Harlem District Public Health Office
27. Stephan O'Brien	Director of Food and Menu Management at the New York City Department of Education
28. Winfred Wu	Director. Development, Primary Care Information Project
29. Remle Newton Dame	Lead, Electronic Health Records-Based Public Health Surveillance, Primary Care Information Project
30. Ilene Fennoy	Professor of Pediatrics, Columbia University Medical Center

APPENDIX D: NEW YORK STATE CHILDHOOD OBESITY POLICIES, 1992–2013

Year	Policy Name/ Number	Description
1992	8 NYCRR 135.3; Health Education	<p>States that it shall be the duty of the trustees and boards of education to provide a satisfactory program in health education in accordance with the needs of pupils in all grades.</p> <p>Elementary Schools: the teacher shall provide for pupil participation in planned activities for developing attitudes, knowledge, and behavior that contribute to their own sense of self-worth, respect for their bodies, and ability to make constructive decisions regarding their social and emotional, as well as physical, health.</p> <p>Secondary Schools: Health education shall be required for all pupils in the junior and senior high school grades and shall be taught by teachers holding a certificate to teach health.</p>
1994	8 NYCRR 114.1; School breakfast program	<p>Includes nutrition standards for school breakfasts.</p> <p>A breakfast shall contain, as a minimum, each of the following food components in the amounts indicated:</p> <p>(1) One-half pint of fluid milk served as a beverage or on cereal, or used in part for each purpose.</p> <p>(2) A one-half cup serving of fruit or full-strength fruit or vegetable juice.</p> <p>(3) Two servings from one of the following components or one serving from each:</p> <p style="padding-left: 20px;">(i) Bread/bread alternate—one slice of whole grain or enriched bread; one serving of a biscuit, roll, muffin, etc., made of whole grain or enriched flour, or a 3/4 cup or one ounce serving of whole grain or enriched or fortified cereal.</p> <p style="padding-left: 20px;">(ii) Meat/meat alternate—one ounce of meat/poultry, fish, or cheese; 1/2 large egg; two tablespoons of peanut, nut, or seed butter; four tablespoons of cooked dry beans; or one ounce or more of the following: peanuts, soy nuts, tree nuts, or seeds.</p>
2001	McKinney's Public Health Law § 260-263: Obesity Prevention Act	Authorizes a research study related to obesity prevention and treatment.
2002	McKinney's Agriculture and Markets Law § 16 5-b: General powers and duties of department	Requires the establishment of a Farm-to-School program. Encourages use of farm-fresh food in schools and promotes farmers markets.
2003	McKinney's Public Health Law § 2599-A thru C: Childhood Obesity Prevention	<p>Established school-based childhood obesity prevention nutrition education and physical activity programs, including linkages to physical and health education courses.</p> <p>The childhood obesity prevention program shall include, but not be limited to:</p> <ul style="list-style-type: none"> • Developing media health promotion campaigns targeted to children and adolescents

Year	Policy Name/ Number	Description
	Program (COPP) Development	<ul style="list-style-type: none"> • Establishing school-based childhood obesity prevention nutrition education and physical activity programs • Establishing community-based childhood obesity prevention nutrition education and physical activity programs • Coordinating with the State education department; Department of Agriculture and Markets; Office of Parks, Recreation, and Historic Preservation; Office of Temporary and Disability Assistance; Office of Children and Family Services, and other Federal, State, and local agencies to incorporate strategies to prevent and reduce childhood obesity into government food assistance, health, education and recreation programs • Sponsoring periodic conferences or meetings to bring together experts in nutrition, exercise, public health, mental health, education, parenting, media, food marketing, food security, agriculture, community planning, and other disciplines • Developing training programs for medical and other health professionals to teach practical skills in nutrition and exercise education to children and their parents • Developing screening programs in coordination with health care providers and institutions, including but not limited to day care centers and schools for overweight and obesity for children aged two through eighteen years, using body mass index (BMI) appropriate for age and gender
	McKinney's Transportation Law § 14 General functions, powers and duties of department	Authorizes the Department of Transportation to establish and administer the Safe Routes to School program, whose purpose is to eliminate or reduce physical impediments to primary and secondary school-aged children walking or bicycling to school. Provides for funding through the commissioner for projects. Defines traffic calming measures.
2005	McKinney's Education Law § 918: School district nutrition advisory committees	Authorizes and encourages every school district to establish a child nutrition advisory committee to study all facets of the current nutritional policies of the district.
	McKinney's Education Law § 903: Students to furnish health certificates	Requires screening programs for obesity in institutions, including day care centers and schools for overweight and obesity for children aged two through eighteen years, using BMI.
	18 NYCRR 416 (Group Family Day Care Homes), 417 (Family Day Care Homes), and 418-1 through 418-2 (Day Care Centers and Small Day Care Centers).	<p>The group family day care provider (and family day care provider) must establish a daily schedule of program activities which offers reasonable regularity in routines, including snack and meal periods, nap and rest periods, indoor activities, and outdoor play time.</p> <p>The child day care center must establish a planned program of activities which are appropriate for the children in care, and which encourage normal progress in the development of cognitive, social, emotional, physical and language skills. The child day care center (and Group Family Day Care Homes and Family Day Care Homes) must provide plentiful and nutritious snacks to children. The center must ensure that each child in care for more than four hours a day receives a nutritious meal. Each child in care for more than 10 hours must receive a minimum of two nutritious meals.</p>

Year	Policy Name/ Number	Description
2007	McKinney's Education Law § 903: Students to furnish health certificates (NY AB 4308 enacted)	Requires a health certificate be given to students in public schools that includes the student's BMI and weight status category; the principal will report these scores to the director of school health services.
2009	8 NYCRR 135.4: Physical education	Revises physical education instruction requirements for elementary programs and establish qualifications and appropriate training of coaches. All pupils in grades K-3 shall participate in the physical education program on a daily basis. All pupils in grades 4-6 shall participate in the physical education program not less than three times each week. The minimum time devoted to such programs shall be at least 120 minutes in each calendar week. Secondary instructional program for grades 7 through 12: All secondary pupils shall have the opportunity for regular physical education, but not less than three times per week in one semester and two times per week in the other semester, taught by a certified physical education teacher.
	NY AB 154 (enacted)	Appropriates funds for the Department of Health and Mental Hygiene, including \$2 million for services and expenses, including grants, for reporting body mass index on school physical forms. The bill also allocates \$1 million from the Federal American Recovery and Reinvestment Act of 2009 to support community coalitions for obesity prevention to plan and create environmental and policy changes that support access to sustainable, healthy, and affordable food, and safe environments for physical activity.
2013	McKinney's Agriculture and Markets Law § 3: Declaration of policy and purposes and McKinney's Agriculture and Markets Law § 16 5-b: General powers and duties of department	Requires that the State Department of Education coordinate with the State Department of Health in implementing the Childhood Obesity Prevention Program and to encourage the production and consumption of fresh locally produced fruits and vegetables by elementary and secondary school aged children to help combat the increasing incidence of childhood obesity. Requires the cooperation of State agencies to encourage community gardens to increase the production of fresh fruits and vegetables.

APPENDIX E: NEW YORK CITY MATRIX OF STRATEGIES

Name of Strategy	Setting				Focus area			Type		
	ECE	Schools	Community	Health Care	Nutrition	Physical Activity	Built Environment	Program	Policy	Media Campaign
New York City Food Standards (comprehensive nutrition standards for all foods purchased and served by city agencies and their programs)		X	X	X	X				X	
School nutrition policies (including whole milk removed from public schools; introduced lower-fat, fat-free items, salad bars, healthy vending)		X			X				X	
New York City Day Care Regulations (Board of Health requirement for physical activity, nutrition, and screen time in day care settings)	X				X	X			X	
Move to Improve (classroom-based physical activity program)	X	X				X		X		
Health Bucks (farmers market financial incentive program to increase redemption of Supplemental Nutrition Assistance Program or Special Supplemental Nutrition Program for Women, Infants, and Children)			X		X			X		
Universal Free Breakfast		X			X				X	
SPARK		X				X		X		
FITNESSGRAM		X				X				
Mighty Milers Program		X	X			X		X		
Farm-to-preschool	X				X				X	
State WIC policies	X				X				X	
Healthy Bodegas			X		X			X		
Stellar Farmers Market			X		X			X		
Pouring on the Pounds media campaign			X		X					X
Active Design Guidelines			X			X	X	X		
City Harvest – Mobile Markets			X		X			X		
Green Carts			X		X			X		
Calorie Posting			X		X				X	
FRESH (Food Retail Expansion to Support Health) Program			X		X			X		
Play streets			X			X		X		

Name of Strategy	Setting				Focus area			Type		
	ECE	Schools	Community	Health Care	Nutrition	Physical Activity	Built Environment	Program	Policy	Media Campaign
“Make New York City Your Gym” media campaign			X			X				X
Shape Up NYC			X			X		X		
Kids in Motion			X			X		X		
“No Juice in Bottles” media campaign			X		X					X
Obesity in Children Campaign				X	X	X		X		
Baby Friendly Hospitals and breastfeeding initiatives				X	X			X		
CHALK (Choosing Healthy and Active Lifestyles for Kids) program				X	X	X		X		
EatPlayGrow	X				X	X		X		
Come See What’s Cooking, Kids			X		X			X		
Summer Meals Program (DOE)		X	X		X			X		
Thrive (Harlem-based)			X	X	X	X		X		
Head Start-based interventions	X				X	X			X	
Fresh Fruit and Vegetable Program		X			X			X		
Kellogg-funded Food and Fitness Partnerships		X			X	X		X		
School Food Plus		X			X			X		
Hunger Prevention and Nutrition Assistance Program			X		X			X		
City Harvest Healthy Neighborhoods Initiative			X		X			X		
Healthy Options and Physical Activity Program (HOP)		X			X	X		X		
Schoolyards to Playground		X				X		X		
Public Health Detailing Program: Children’s Obesity Campaign				X	X	X				X
Energy Up				X	X	X		X		
Young Women’s Leadership Schools		X			X	X		X		
Power Program for Overweight Education and Reduction (Columbia Medical Center)				X	X			X		
Adolescent Bariatric Surgery Program (Columbia Medical Center)				X	X			X		
“Don’t Drink Yourself Fat” media campaign			X		X					X
Millennium Basketball Tournament			X			X		X		