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## A National Collaborative for Building the Field of Childhood Obesity Research

The Writing Group for the National Collaborative on Childhood Obesity Research (NCCOR)

### Abstract

Rising rates of childhood obesity over the past 2 decades have spurred a number of public- and private-sector initiatives aimed at halting or even reversing this trend. Recognizing common interests in this issue, the Centers for Disease Control and Prevention, NIH, and the Robert Wood Johnson Foundation began conversations about creating a formal collaboration aimed at accelerating efforts to address childhood obesity by coordinating research agendas and providing support for evidence-building activities. The National Collaborative on Childhood Obesity Research (NCCOR) was launched in February 2009, and the U.S. Department of Agriculture joined in 2010. Using the model provided by other previously successful collaborations, such as the Youth Tobacco Cessation Collaborative, NCCOR has emphasized several principles suggested by Petrovich as key elements for successful partnerships: (1) delineate a common purpose by identifying key knowledge gaps in the field; (2) create a shared identity around that common purpose; (3) develop structures for democratic and respectful collaboration so as to strategically coordinate efforts for maximum national impact; (4) identify effective leaders capable of articulating challenges in the field and inspiring a commitment of minds and the resolve to address identified needs; (5) facilitate continuous knowledge exchange and synthesis to keep the field informed; and (6) support assessment of progress and feedback loops for ensuring continual progress. This paper examines how NCCOR has used these principles to help build the field of research, evaluation, and surveillance for childhood obesity prevention and management.

### INTRODUCTION

Data from 1990 through 2010 from state and national health monitoring systems documented that rates of obesity were rising in children and adults.<sup>1,2</sup> In parallel, for the first time, chronic diseases generally associated with obesity in adults, such as diabetes, hypertension, and fatty liver disease, were being documented in children and adolescents, creating a sense of urgency for a focused response encompassing research and public health programs to address childhood obesity.<sup>3,4</sup> A number of federal and private organizations developed initiatives, pilot interventions, and programs to assess the readiness of the field to respond to this need.<sup>5</sup> The early infusion of a \$500-million commitment of funding from the Robert Wood Johnson Foundation (RWJF) in 2007 challenged the research and public health fields to work collaboratively to identify solutions to the epidemic of childhood obesity. Coincident with these national efforts, organizations at local and state levels began a number

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of natural experiments to explore approaches for improving healthy eating and active living among children and their families within schools and communities.<sup>6,7</sup>

With the release of the \$500-million RWJF childhood obesity initiative, NIH and RWJF began discussions about their areas of common interest and invited the Centers for Disease Control and Prevention (CDC) to join with them in planning the creation of a formal collaboration aimed at accelerating progress by coordinating research agendas and providing support for evidence-building research activities in this nascent field.<sup>2,5</sup> The National Collaborative on Childhood Obesity Research (NCCOR) formally launched in 2009 as a partnership of CDC, NIH, and RWJF and with strong endorsement of its leadership.<sup>5</sup> Its aim was to contribute to building a field of research that could produce the evidence needed to address and reverse the nation's childhood obesity epidemic. In 2010, the U.S. Department of Agriculture (USDA), the other major federal funder of childhood nutrition research and programs, joined NCCOR. An important strength of NCCOR is the diversity of the agencies' mission foci and how they are structured and interact with their stakeholders. Some of the agencies are focused on research and food or health monitoring (i.e., CDC, NIH, and USDA), whereas others are focused on programs, policies, and services (i.e., CDC, RWJF, and USDA). The partners recognized that through the work of the Collaborative, they had a tremendous potential to use those diverse strengths to accelerate the development of an emerging new field of childhood obesity prevention research and practice—both the production of needed research and the translation of research discovery into far-reaching national programs, policies, and services. Other successful collaborations, such as the Youth Tobacco Cessation Collaborative, laid the groundwork, not only because they also had a health mission and research focus, but they recognized the importance of having a coordinating center to provide a neutral, centralized management entity to coordinate the work of the partners.<sup>8,9</sup>

A companion paper in this issue describes the history of NCCOR and how its structure and operations have made it an effective partnership for change.<sup>5</sup> It describes the NCCOR organizational structure, which has facilitated focused collaborative work across the four partners (also see the companion paper's Figure 3).<sup>1</sup> Figure 1 in this paper provides an overview of NCCOR's mission, partners, goals, functions of its coordinating center, and approaches to obtaining input from external stakeholders. Here, the authors share how NCCOR focused on key principles to build this new field and enhance the rapid translation of research and evaluation evidence into programs and practice.

## **NCCOR'S DESIGN AND ACCOMPLISHMENTS HAVE HELPED BUILD A FIELD**

Drawing from the Bridgespan Group's "Strong Field" framework,<sup>10</sup> Petrovich<sup>11</sup> describes field building as "building a branch of knowledge, policy, and practice composed of a multiplicity of actors in relationship with one another." She articulates the key actions undertaken by funders to build strong fields from nascent efforts, and notes that a strong field engages a diverse range of players who can mobilize effectively to promote understanding and foster action on multiple fronts to pursue needed changes.<sup>11</sup> Petrovich

further describes critical elements of a vibrant field. A number of these provide a helpful lens through which to demonstrate how NCCOR has helped to build the field of childhood obesity prevention through its structure, design, contributions, and accomplishments. This paper explores how NCCOR exemplified Petrovich's principles (Table 1) to contribute in building the field of childhood obesity prevention. Examples of NCCOR's accomplishments and their impact are provided in Table 2. An expanded version of this table providing information on other NCCOR projects is available on the NCCOR website, as are detailed description of current and completed NCCOR projects.<sup>12</sup>

### **Delineate a Common Purpose by Identifying Key Knowledge Gaps**

As a first step, NCCOR partners worked together to delineate a common purpose across their agencies' priorities in obesity-related research associated with childhood obesity prevention. This preparation led to the generation of NCCOR's initial four goals, which focused on (1) practical and sustainable interventions; (2) enhanced and improved surveillance; (3) enhanced capacity to conduct research and program evaluation using rigorous study designs; and (4) accelerated implementation of evidence-informed practice and policy. NCCOR decided to focus these efforts on children and their families and the communities and environments, such as schools and early care and education settings, where children eat and engage in physical activity, as well as the systems such as food, recreation, health care, and transportation that support those behaviors.

Responding to a critical need from early pilot efforts in the field, NCCOR prioritized the enhancement of measurement methods and surveillance systems related to individuals, and their environments as key gaps and its initial projects were launched to fill that gap. The focus of these activities was informed by a universal first step in the development of NCCOR projects—the engagement with leading researchers, program evaluators, and other users to ensure that the end product addresses users' needs. Early efforts addressed key research and resource gaps in the field of health monitoring, enhanced quality and knowledge of validated measurement tools for diet and physical activity, and the timely distribution of national data on dietary intake. Details of how decisions were made related to funding and who would administer and manage these projects are addressed in the companion paper.<sup>5</sup>

The Catalogue of Surveillance Systems sought to address a critical barrier to applying the learning from natural experiments taking place across the country to focus national efforts to improve eating behaviors and physical activity among children and youth. Many investigators were seeking data resources that might characterize individual and environmental trends in factors influencing these health behaviors, that at that time required extensive literature searches or discussions with agency staff overseeing those data resources. NCCOR scientific staff conceptualized the development of a curated online resource that would describe and compare a wide range of health monitoring or surveillance systems in the U.S. relevant to childhood obesity research. The Catalogue is used by researchers from a number of countries and provides one-stop access to reviewing, sorting, and comparing more than 100 surveillance systems relevant to childhood obesity research and the evaluation of policy and environmental interventions (Table 2 and Figure 2).

A second major challenge for researchers and implementers in comparing results across the growing number of studies in childhood obesity research was the rapid proliferation of measures to assess eating behavior and physical activity at the individual and environmental levels. Because of the absence of readily accessible information about which measures were appropriate for diverse research questions and designs, many investigators were developing their own measures, often without the resources to validate those measures. To address this challenge, NCCOR scientific staff created a Measures Registry, an online, one-stop, searchable resource of published validation research on measures and tools that assess individual behaviors and environments influencing nutrition and physical activity behaviors (English language only; Table 2). A primary goal of this resource was to support the widespread use of high-quality, validated measures and research methods across childhood obesity research at the individual, community, and population levels. Many of these indicators align with the National Academy of Medicine (formerly known as the Institute of Medicine) Evaluating Progress in Obesity report about indicators for evaluating progress; the Measures Registry and Surveillance Catalogue are cited in the report as an excellent source of information on metrics and data for evaluation.<sup>13</sup>

NCCOR partners tackled another key measurement issue limiting progress in childhood obesity prevention research—youth energy expenditure measurement. Physical activity-related energy expenditures evolve as children grow and mature. These values are different from those for adults, yet the only available values had been derived from estimates in adults. To develop standardized and reliable age- and body size-specific estimates of youth energy expenditure values, NCCOR established the Youth Energy Expenditure workgroup in 2012. This group worked to understand and overcome the methodologic challenges in obtaining energy expenditure values for youth and to identify the best possible metrics for characterizing these values.<sup>14</sup> This work also led to the publication of a special journal issue providing previously unavailable energy expenditure values for nearly 100 activities in which children and youth regularly engage.<sup>15</sup> It also resulted in the development of the Youth Compendium of Energy Expenditure Values, an interactive web-based tool enabling investigators to search for youth energy expenditure values for 180 different physical activities (Table 2).<sup>16</sup>

NCCOR also focused on addressing the major resource challenge within the nutrition research community of the slow release of national data on food group intakes in the U.S. population. This delay occurred in part because of limitations in the resources available for rapidly characterizing dietary intake data from the National Health and Nutrition Examination Survey into food and beverage equivalencies. Strategic cross-funder NCCOR collaborations, formalized by interagency agreements in 2011, greatly accelerated USDA's efforts to update the Food Patterns Equivalents Database (Table 2). USDA has continued to update this effort for future uses and has expanded the database by adding new food components of interest, shortening the time from survey completion to Food Patterns Equivalents Database data release (Table 2).

Other important NCCOR-related initiatives built knowledge by exploring important new topics in childhood obesity and obesity-prevention research. For example, early discussions within NCCOR led individual partners to link their resources and research agendas to build

the field of community-based childhood obesity prevention research. In 2010, NIH initiated several large-scale research projects to understand drivers of childhood obesity rates. One of these was the Healthy Communities Study, a large 5-year study led by the National Heart, Lung, and Blood Institute and designed to evaluate the effects of individual- and community-level programs and policies implemented in 120 communities across the U.S. on children's eating and physical activity behaviors (Table 2). Detailed summaries of study design and methods have been published,<sup>17,18</sup> and results from this research are expected to be published in the next year. Moreover, the National Heart, Lung, and Blood Institute plans to release the data from this seminal study for broader use by investigators. In 2014, as promising evidence from four communities in the U.S. (Anchorage, AK; Granville County, NC; New York, NY; and Philadelphia, PA) showed progress in reducing community-level rates of childhood obesity, RWJF funded the Childhood Obesity Declines project to better understand the factors and system-level policies influencing these declines (Table 2). As with all NCCOR projects, content experts from the NCCOR partners assumed complementary roles and responsibilities for these community-level studies. For example, although one of the NCCOR partners may have provided the primary funding for a specific initiative, content experts across the four partners contributed to intervention and research design development, outcome measurement, project management, and evaluation activities.

Early NCCOR work focused on another challenge to build actionable knowledge and evidence—the lack of funding for obtaining vital baseline data needed to evaluate emergent planned or naturalistic interventions with potential to improve youth diet, physical activity levels, behaviors, or energy balance. Recognizing this opportunity, NCCOR organized multi-funder discussions to map out opportunistic but rigorous methods for learning from natural experiments, including rapid-response studies designed to evaluate these experiments. These efforts laid the groundwork for several NIH institutes to create rapid-response funding mechanisms. One of these mechanisms, based at the Johns Hopkins Global Obesity Prevention Center,<sup>19</sup> employs the tools of systems modeling to examine the multiple complex factors influencing childhood obesity at the community level (Table 2).<sup>20</sup> In 2012, a number of institutes and centers across NIH released a second rapid funding mechanism that established an accelerated review and award process required to support time-sensitive research examining the effect of policies, programs, and systems changes on children's obesity-related health behaviors and outcomes (Table 2).<sup>21</sup>

### Create a Shared Identity and Affiliation Around a Common Purpose

NCCOR partners—CDC, NIH, RWJF, and USDA—are the nation's leading public and private funders of childhood obesity research. Although their missions are diverse, with differing and complementary areas of emphasis, they share a common goal of improving the overall health of the U.S. population.<sup>5</sup> In addition, because of their distinctive missions, they support unique but complementary research, evaluation, and surveillance activities. For example, CDC has a primary mission to support state and local public health agencies; national, state, and local health monitoring/surveillance; and program evaluation. It therefore focuses its small research portfolio funding on improving the practical implementation and reach of population-based public health interventions. NIH, as the primary funder of biomedical research in the U.S., does not fund delivery of programs or services, but rather a

wide range of research relevant to childhood obesity. RWJF devotes much of its funding to policy and environmental research and the evaluation of public and private programs related to eating and community built environments influencing active living, whereas USDA supports a range of human nutrition research, including research and evaluation of the impact of its food assistance programs and accompanying education initiatives.

At the beginning of the NCCOR partnership, scientific staff, agency directors, and organizational leaders from each of the partners met to jointly review and characterize how their research focus in the area of childhood obesity research aligned with a broad span from basic discovery, to development of clinical and behavioral interventions, to delivery and implementation science, program evaluation, and population-level surveillance research. NCCOR members identified the later stages of this research continuum, with an emphasis on the effects of environmental, policy, and systems level factors, as the focus for the collaboration. This focus was chosen because all of the partners had initiated research efforts in these areas, and many of the program efforts of CDC and USDA required rigorous evaluations. In keeping with the diversity of research missions and the breadth of research areas supported by partner organizations, NCCOR members represent a wide range of expertise and interests.<sup>1</sup> This broad-ranging expertise is strategically applied across the partnership in developing initiatives that are responsive to the partners' jointly evolving research needs and missions as well as NCCOR priorities. Members contribute not only to the initial development of a proposal but also to ongoing working groups that help track and evaluate outcomes. Members representing different funding partners work together, strengthening their relationships and understanding of common purposes, aiding avoidance of duplication of effort, and strengthening their affiliation with NCCOR.

NCCOR's flexibility and nimbleness in responding and adapting to emerging priorities and policies is a critical byproduct of these affiliations. For example, at an October 2012 NCCOR meeting, USDA identified the need for a Supplemental Nutrition Assistance Program (SNAP)-Ed Toolkit of Interventions to include evidence-based policy, system, and environmental strategies for obesity prevention that were historically beyond the scope of USDA's SNAP direct nutrition education activities (Table 1). By joining forces across NCCOR partners, the toolkit was completed in just 5 months (by March 2013), giving states sufficient time to launch their nutrition education programs for the USDA's SNAP-Ed ambitious deadline of September 2013. The toolkit is now online and used by every SNAP-Ed State Implementing Agency,<sup>22</sup> and has been updated twice since its launch in 2013 to incorporate emerging new evidence and respond in real time to evolving USDA requirements. Other examples that demonstrate NCCOR's ability to respond quickly to emerging needs include the update of the USDA's Food Patterns Equivalents Database resource for investigators and the Green Health Project. Details of the timelines for these three projects are described in Figure 3.

In addition to developing a shared identity and affiliation across the four NCCOR partners, the collaboration actively engages research leaders outside of its membership to contribute their vision and expertise toward its common purpose. This has included engaging outside experts as consultants to many of the NCCOR working groups as well as gaining insights



from the scientific members of the NCCOR Expert Scientific Panel, described in the companion paper.<sup>5</sup>

NCCOR's successes in addressing crucial gaps in research knowledge and resources for the field of childhood obesity prevention research continue to grow with the expansion of existing projects, the development of new projects, and the creation of strategic alliances among other diverse players involved in enhancing childhood obesity research. For example, through a unique strategic alliance initiated in 2015 with the JPB Foundation, a private foundation that supports work in the areas of health, chronic disease, family planning, and democracy to help low-income populations, NCCOR worked with experts in the field of diet and physical activity assessment to develop *Measures Registry User Guides*, released in January 2017. These user guides assist researchers in using the NCCOR Measures Registry and in selecting the most appropriate high-quality measurement approaches and methods for diverse research designs. NCCOR also has worked with groups as strategic alliances in diverse sectors in the development of research and evaluation tools. For example, in the area of green health and design, NCCOR joined with the U.S. Green Building Association and the American Institute of Architects (Table 2).

### **Develop Structures for Democratic and Respectful Collaboration so as to Strategically Coordinate Efforts for Maximum National Impact**

As with other successful public/private research partnerships, the early development of NCCOR was initially supported by work contributed by each individual partner and then transitioned to a hub-and-spokes model by supporting a neutral convener to ensure effective engagement, coordination, and communication across the collaboration. This was accomplished through funding of a coordinating center housed at FHI 360, a nonprofit human development organization. The NCCOR Coordinating Center's specific activities are described in the companion paper.<sup>5</sup>

A culture of mutual respect and trust is fundamental to building effective and democratic relationships in a collaboration that draws from many different disciplines and organizations. These relationships create shared social capital that is the bedrock of trusting and effective partnerships, rooted in understanding and respect for the similarities and differences that exist across partners' organizational cultures and research missions, resources, disciplines, and expertise.<sup>23</sup> The power and collective impact of research collaboratives, like NCCOR, reside in skillfully harvesting these similarities and differences, weaving together combined assets such as expertise and resources, crafting structures that allow for differences, and building respectful personal/professional relationships—hallmarks of successful, high-impact national collaborations.<sup>5,11,12</sup> NCCOR's early efforts to examine the research activities and goals of the four partners and to engage a broad range of staff across many components of these organizations were key early steps in creating social capital.

### **Identify Effective Leaders Capable of Articulating Challenges and Inspiring Commitment**

From its initiation, NCCOR operated under a premise that it would use the deep expertise and commitment of staff across its organizations to foster this emerging field. These staff serve as effective leaders within all levels of the effort, from targeted working groups to the

Steering Committee, a group of senior-level representatives from each of the four funding partners that provides overall management and scientific guidance to NCCOR. These leaders volunteer to facilitate interdisciplinary and cross-organizational work for many reasons, including their personal commitments to creating high-quality research and programs to reverse the childhood obesity epidemic, and their motivation and leadership to work with scientific staff across the four partners to ensure their success within NCCOR. In keeping with NCCOR's democratic model, scientific staff across NCCOR organizations serve as spokespeople locally and nationally to consistently communicate NCCOR's vision, actions, and impact, facilitated by engaging communication materials produced by the Coordinating Center (Figure 1).<sup>12</sup> The NCCOR website provides access to annual reports and project descriptions that detail the many scientific staff and the entities they represent within the four partners.<sup>12</sup>

The generation of this multilayered pool of leaders across the four partners ensures consistent engagement and effort even when organizational senior leadership or areas of focus change. Support at the senior levels of the organizations is sustained through NCCOR members communicating regularly with senior leadership across the partner organizations to discuss accomplishments, identify emerging shared priorities, and chart new directions. Finally, NCCOR has benefited from the sustained commitment of several of its founding scientific leaders within the Steering Committee, who have been fully engaged with this effort since its inception and provide ongoing guidance on NCCOR projects, and the most effective approaches for working within the partnership. In addition, NCCOR's External Scientific Panel<sup>5</sup> has broadened recognition of NCCOR's key role in the field, provided insights to the partnership members and other key research leaders, and informed the partnership of opportunities to communicate NCCOR's vision and actions.

### **Facilitate Knowledge Exchange and Synthesis That Keeps the Field Informed**

Harnessing diverse communication technologies and continual consideration of strategic information exchange and outreach are critical elements that NCCOR uses to facilitate knowledge exchange in a rapidly evolving field. For example, NCCOR has sponsored an ongoing series of "think tanks" among varied researchers, practitioners, and other stakeholders to discuss learnings and research needs to further efforts to reduce childhood obesity (Table 2). These think tanks have examined research and implementation strategies for a wide range of topics related to the food supply, physical activity environments, the influence of design and green building standards, systems science, health care and community engagement, and tools to enable research. Other NCCOR strategic communications, pursued through various avenues including webinars, websites, annual reports, and conference presentations, engage experts across many disciplines to present their research and program accomplishments to a growing stakeholder audience of students, researchers, practitioners, and policymakers.<sup>5</sup>

NCCOR also benefits from and encourages active outreach beyond its partner agencies to other major national groups and constituencies by having NCCOR members as consultants to projects, such as the Healthy Weight Commitment Foundation's evaluation of the food and beverage industry effort to reduce calorie intake in the U.S.,<sup>24,25</sup> or as participants in



professional meetings, such as those on childhood obesity convened by the National Academy of Medicine.<sup>26-28</sup> NCCOR members are also active as members of other partnerships that strive to inform or take large-scale concerted action, such as the Partnership for a Healthier America, or leading scientific societies and professional organizations, such as the National Academy of Medicine, the American Public Health Association, and the Society of Behavioral Medicine. These collaborations have supported in-depth discussions to identify multisector solutions informed from research evidence and targeted sessions at national meetings to disseminate the evolving research evidence base to inform programmatic choices that members share with NCCOR.

As childhood obesity prevention innovations have developed in countries outside of the U.S., NCCOR also has developed outreach activities to ensure it is learning about these global efforts. For example, NCCOR partners supported international systems science modeling efforts that facilitated learning from other countries. Launched initially with modelers from the U.S., Canada, United Kingdom, and Australia in the Childhood Obesity Modeling Network, NCCOR's Envision initiative expanded the effort to include more than 50 leading modelers worldwide (Table 2).

### **Support Assessment and Feedback Loops to Ensure Continual Progress**

NCCOR has consistently generated assessments of its activities and their relevance to NCCOR's mission and the field to identify and adjust tactics where needed. Types of assessments include strategic planning, assessments of internal partnership processes, input from external experts, as well as annual reports and reviews developed by the Coordinating Center. These feedback loops, internal reviews, and external assessments are described in the companion paper.<sup>5</sup> NCCOR also supported, from its inception, a formal assessment process (including periodic surveys and interviews with experts in the field) conducted by an external source to ensure that it continues to meet the needs of the field. The results of these assessments are discussed at Steering Committee and member meetings and used to identify priorities for redirection of existing or development of new activities.

## **CONCLUSIONS**

It is increasingly clear that major public health challenges require collaborative efforts that engage the interest and intellectual energy of many individuals and organizations that can bring wide-ranging expertise to reflect and engage the actions of multiple sectors. NCCOR developed its collaborative model to accelerate progress in the development of solutions-oriented research to provide the evidence to halt and reverse the epidemic of childhood obesity in the U.S. Using this model, NCCOR has been proactive, flexible, and dynamic in responding to the evolving needs in the field of obesity research and evaluation. These types of solutions-oriented research collaborations also have been effective in leveraging resources to address other large public health challenges, such as tobacco control. Furthermore, such collaborative models have the capacity to generate substantial return on investment. For example, for every \$1 spent by the NCCOR funders for the Coordinating Center, NCCOR has influenced more than \$100 in cross-funder childhood obesity research and practice efforts. More importantly, the returns in strengthened collegial relationships, better project

coordination reducing the potential for duplication, and collaborative research designs are valuable and cannot be calculated. The authors encourage other collaborative groups seeking to address similar complex and multilayered public health problems to consider using a similar solutions-oriented collaborative model and provide this summary of approaches NCCOR has used in achieving progress to identify a range of solutions for childhood obesity prevention as a model for addressing other large public health challenges facing the nation.

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## Appendix

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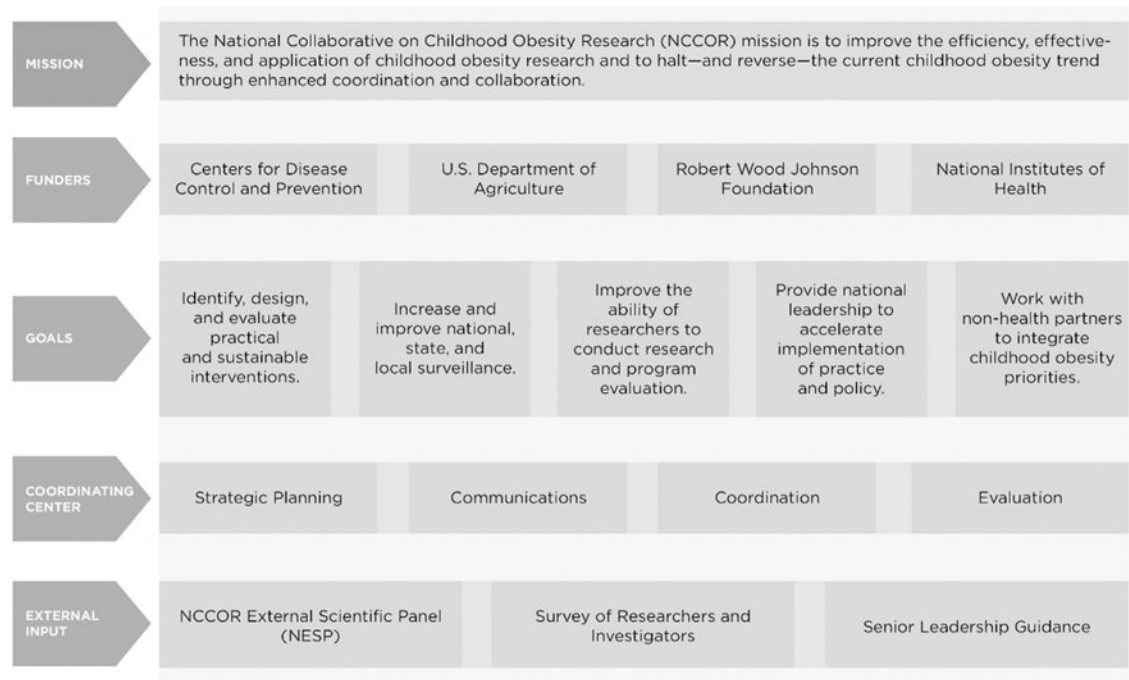
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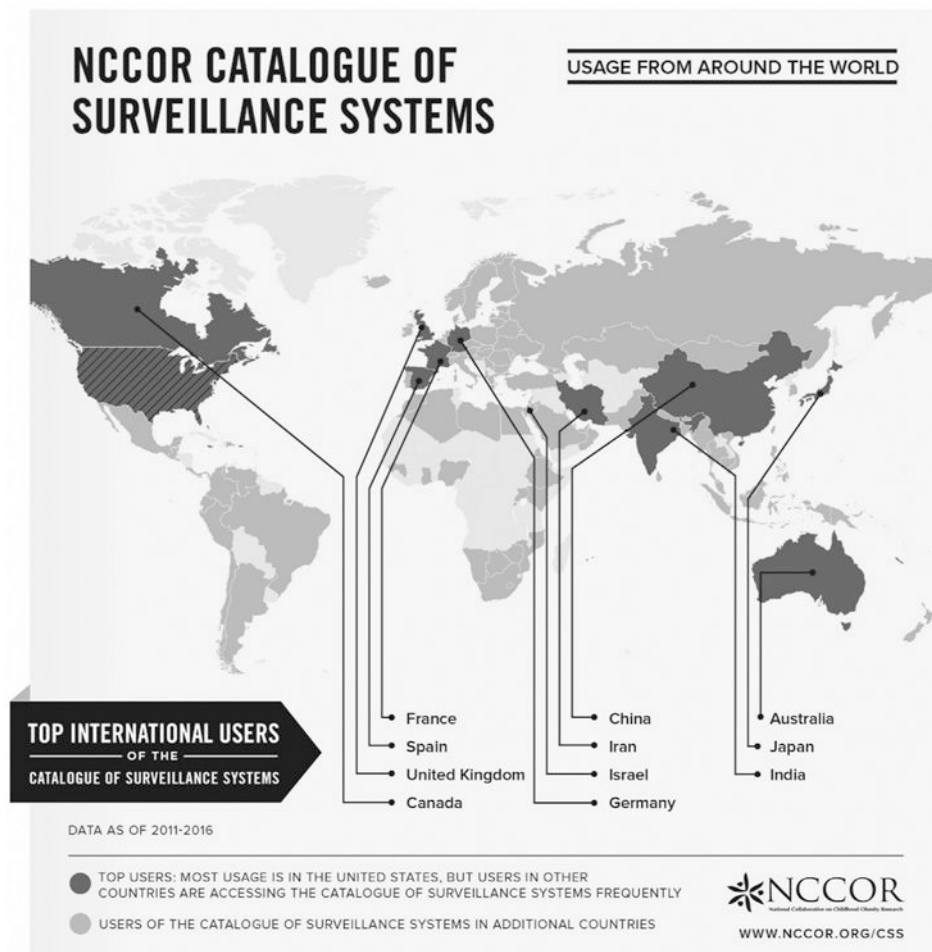
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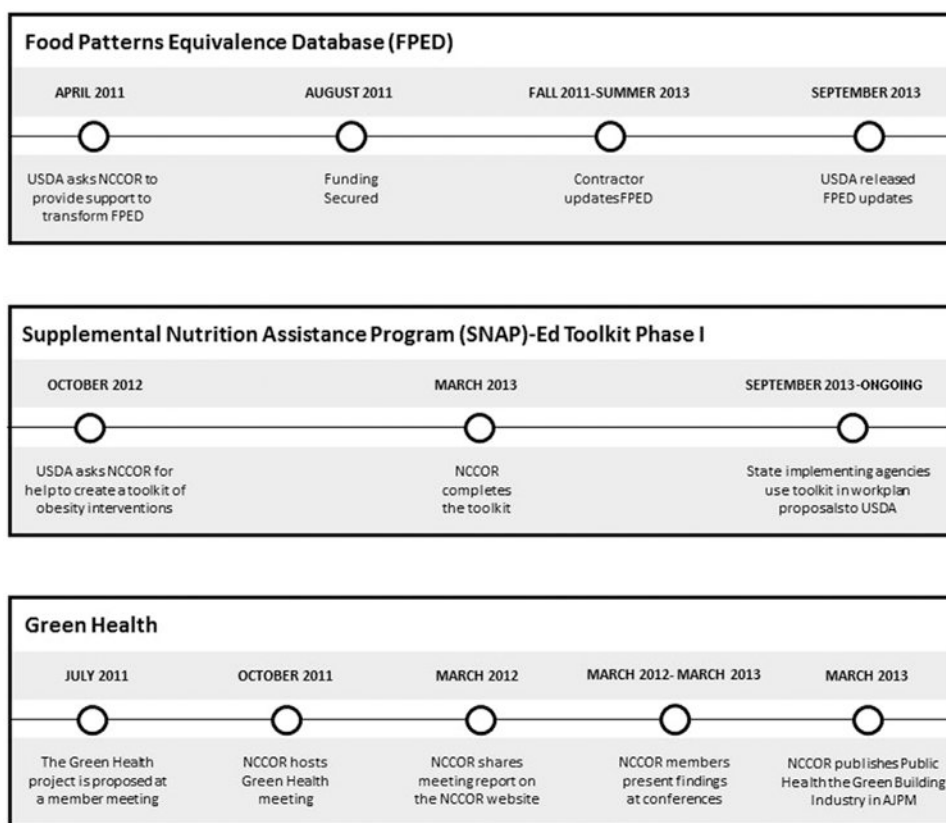


**Figure 1.**  
Overview of the National Collaborative of Childhood Obesity Research.



**Figure 2.**  
Worldwide use of the National Collaborative of Childhood Obesity Research Surveillance Catalogue. NCCOR, National Collaborative of Childhood Obesity Research.





**Figure 3.** Timeline for selected National Collaborative of Childhood Obesity Research projects. *AJPM*, *American Journal of Preventive Medicine*; NCCOR, National Collaborative of Childhood Obesity Research; USDA, U.S. Department of Agriculture.

Principles Used by the National Collaborative of Childhood Obesity Research to Build the Field of Childhood Obesity Research and Practice

Table 1.

Principles for building a strong field
Delineate a common purpose by identifying key knowledge gaps in the field.
Create a shared identity around that common purpose.
Develop structures for democratic and respectful collaboration so as to strategically coordinate efforts for maximum national impact.
Identify effective leaders capable of articulating challenges in a field and inspiring a commitment of minds and emotions to address the identified needs.
Facilitate continuous knowledge exchange and synthesis to keep the field informed.
Support assessment and feedback loops to evaluate process and approaches and ensure continual progress.

Note: Derived from white paper commissioned by the Robert Wood Johnson Foundation: Petrovich J. *Building and Supporting Sustainable Fields: Views from Philanthropy*. A study for the Robert Wood Johnson Foundation. Princeton, NJ: Robert Wood Johnson Foundation, July 2013. [www.rwjf.org/content/dam/farm/reports/reports/2013/rwjf407225](http://www.rwjf.org/content/dam/farm/reports/reports/2013/rwjf407225).

Table 2.

Examples of National Collaborative of Childhood Obesity Research Research-Related Accomplishments and the Issues and National Collaborative of Childhood Obesity Research Goals They Address

Project	Dates of inception and launch <sup>a</sup>	NCCOR goals addressed <sup>b</sup>	Problem addressed	Accomplishment and impact
Created the Catalogue of Surveillance Systems, an online resource for users to review, sort, and compare more than 100 surveillance systems relevant to childhood obesity research and evaluations of policy and environmental interventions	February 2009 January 2011	2,3	Difficult and delayed access to governmental health monitoring systems hampers in-depth evaluation of the causes of national trends in childhood obesity.	The Catalogue of Surveillance Systems has been accessed by 60 827 unique visitors between its launch and 2016. Users from more than 70 countries outside the U.S. have visited the Catalogue.
Created the Measures Registry, an online searchable web resources of nearly 1,200 published studies of validation research on measures and tools for assessing these health behaviors and the associated environments that influence these health behaviors	February 2009 January 2011	2,3	Proliferation of assessment measures of food intake and physical activity across many studies, often without prior work to assess the validity and quality of the new measures, makes it difficult to assess behaviors and environments.	The Measures Registry has been accessed by 15,364 unique visitors between its launch and 2016. Users from 41 countries outside the U.S. have visited the Measures Registry.
Supported research efforts to develop and publish metrics and measures for youth energy expenditure (YEE) and created the Youth Compendium of Physical Activity, an online resource that allows researchers and practitioners to search for YEE values from the existing literature	October 2012 February 2017	3	Existing estimates of YEE in physical activity were based on adult values and did not accurately reflect changes in YEE with growth and development.	The Youth Compendium of Physical Activity, released in early 2017, will enhance accuracy of research on physical activity in youth.
Provided financial support for timely update of the Food Patterns Equivalents Database (FPED)	April 2011 September 2011	2,3	Delayed release of national data on food group intakes in the U.S. limited researchers' ability to assess how patterns of intake compare to dietary guidelines.	The U.S. Department of Agriculture released FPED updates for the 2007–2010 and 2011–2012 NHANES survey cycles in 2013 and 2014, respectively, shortening time from data collection to release to 2 years.
Supported research initiatives on the impact of community initiatives, including the Healthy Communities Study, which examined the effect of community-level programs and policies on children's eating behaviors and physical activity in 120 communities and nearly 5,000 families	February 2009 September 2010	1,3	Absence of data on community-level programs and policies related to eating and physical activity that could be linked to data on these behaviors and weight outcomes.	Early descriptions of this study were published in 2014 and 2015, with further research underway. Data from the study will be made available from NHLBI for future research.
Developed the Childhood Obesity Declines project to better understand the factors influencing the successful implementation of programs in four communities in the U.S.	April 2013 May 2014	1,3	Absence of information on key drivers hampers the successful implementation of programs related to improving eating behaviors and physical activity in children.	A publication from this evaluation will be released in 2017.
Created an ongoing funding mechanism, Time Sensitive Obesity Policy and Program Evaluation, to support the collection of baseline data before the onset of natural experiments related to improving eating behaviors and active living	October 2011 August 2012	1,3	Barriers to obtaining funding for obtaining baseline data before the onset of natural experiments limited the capacity to measure the impact of such efforts.	This funding mechanism has resulted in the award of more than nine grants from 2014 to 2016.
Created an online SNAP-Ed Toolkit that can be used by states to identify evidence-based and emerging obesity prevention programs, strategies, and interventions. The Toolkit enhances the potential for the U.S. Department of Agriculture's Supplemental Nutrition Assistance Program (SNAP) to use	October 2012 March 2013	1,3,4	Absence of current information from research on effective interventions hinders state efforts to improve eating behaviors and physical activity relevant to children served by USDA food programs.	The SNAP-Ed Toolkit was first released in March 2013 and has continued to be updated to reflect results from NCCOR partner-funded research. This toolkit has been used to improve SNAP-Ed programs across the U.S.; these programs serve

Project	Dates of inception and launch <sup>a</sup>	NCCOR goals addressed <sup>b</sup>	Problem addressed	Accomplishment and impact
<p>its SNAP-Ed efforts to improve child nutrition and obesity prevention programs.</p> <p>Through a strategic partnership with the JPB Foundation, supported the development of four Measures Registry User Guides, which provide an overview of measurement and measure selection, and provide “how-to” case studies</p> <p>Collaborated with the U.S. Green Building Council Center for Green Schools and the American Institute of Architects on a Green Health project to examine how environmental design strategies can be used to promote physical activity and healthy eating in school environments and how childhood obesity prevention can be better integrated into school-based sustainability and green-building initiatives</p> <p>Built on the Green Health project by engaging a variety of disciplines to examine how specific aspects of the built environment can influence health behaviors and to reach consensus on Behavioral Design principles to foster healthy eating and physical activity</p> <p>Sponsored an ongoing series of “think-tanks” involving participants from diverse disciplines to help researchers, practitioners, and other stakeholders in this field learn about evidence and approaches needed to make continued progress in efforts to reduce childhood obesity</p> <p>Supported the development of systems science modeling research efforts, including COMNet, Envision, and the Johns Hopkins Global Obesity Prevention Center, to provide tools for estimating the individual and collective quantitative effects of public health policies and programs for childhood obesity</p>	<p>June 2015 January 2017</p> <p>July 2011 October 2011</p> <p>February 2015 March 2017</p> <p>2009 and ongoing</p> <p>Envision: 2011 Johns Hopkins: 2011</p>	<p>2,3</p> <p>1,3,5</p> <p>1,3,5</p> <p>1–5</p> <p>1,3,4</p>	<p>Even with the Measures Registry, it can be difficult for researchers and practitioners to choose the most appropriate measure for their work.</p> <p>A lack of attention to environmental design at various levels hampers efforts to influence children’s social norms and behaviors related to dietary choices and daily physical activity.</p> <p>Gaps in knowledge and narrow definitions of behavioral design limits the development of environments that promote healthy eating and active living among children.</p> <p>Single-discipline national meetings limited the topics addressed, hampering researchers and practitioners from considering rapidly evolving research and practice questions across diverse fields.</p> <p>Absence of rigorous methods for estimating the potential quantitative effects of diverse programs and policies within the context of specific communities and populations hinders the ability to develop effective strategies.</p>	<p>nearly 45 million people, more than half of whom are children.</p> <p>The Measures Registry User Guides website, which provides the Guides and supplementary materials, was launched in January 2017.</p> <p>This partnership resulted in a portfolio of innovative “green health” activities, including a workshop, peer-reviewed articles, and the development of healthy design guidelines for school architecture.</p> <p>Meetings convened by NCCOR in 2015 and 2016 brought together a diverse array of disciplines to consider these issues and led to a white paper that was released in 2017 and provides a conceptual foundation to guide research and practice.</p> <p>Since its inception, NCCOR has sponsored more than 19 think-tanks on more than 12 topics.</p> <p>Estimates from these models provide objective estimates for selecting effective strategies for policies and programs by program implementers.</p>

<sup>a</sup>Date of inception is when the National Collaborative of Childhood Obesity Research first formed the group to address the problem; date of launch is when first product (such as a research resource, workshop, or funding mechanism) was released.

<sup>b</sup>National Collaborative of Childhood Obesity Research Goals: (1) Identify, design, and evaluate practical and sustainable interventions, especially in high-risk populations and communities. (2) Increase and improve national, state, and local surveillance of childhood obesity. (3) Improve the ability of childhood obesity researchers and program evaluators to conduct research and program evaluation. (4) Provide national leadership to accelerate implementation of evidence-informed practice and policy and to engage other public and philanthropic funders with potential to advance these core goals. (5) Work with non-traditional health partners to integrate childhood obesity priorities with synergistic initiatives.

NCCOR, National Collaborative of Childhood Obesity Research; NHANES; National Health and Nutrition Examination Survey; NHLBI, National Heart, Lung, and Blood Institute; USDA, U.S. Department of Agriculture.