



## Looking for Connections to Combat Childhood Obesity

Attempting to use social network analysis to evaluate RWJF's childhood obesity initiatives, 2011

### SUMMARY

From January 15 through December 14, 2011, researchers at [LeCroy & Milligan Associates, Inc.](#), a private consulting firm in Tucson, Ariz., sought to analyze the network of organizations working in the field of childhood obesity in 2011. The analysis intended to discover and describe the relationships among people and organizations in the network, determine where the Robert Wood Johnson Foundation (RWJF) was positioned, and identify connections RWJF and others wanted to develop in the future.

LeCroy & Milligan Associates (Project Director Elena Malofeeva, PhD, and colleagues) surveyed 27 key informants in order to identify the most influential people and organizations working on childhood obesity prevention, and then, after a failed attempt to get 849 respondents from 500 organizations to describe their relationships with those they collaborated with in advocacy/policy, training/technical assistance, or research, ended up surveying 263 participants from 196 organizations about their top 10 connections within the childhood obesity prevention field.

### Key Results

This social network analysis (SNA) provided detailed information on some childhood obesity prevention networks existing in 2011, including:

- A list of organizations that experts considered influential
- Descriptions of the connections among organizations, organized by advocacy/policy, training/technical assistance, and research
- Descriptions of the connections of RWJF's childhood obesity prevention national programs
- An examination of how six priority areas identified by RWJF influence the network structure

- An analysis of how organizations that worked in childhood obesity prevention related to 13 specific types of constituencies (e.g., advocacy groups, media, medical practitioners)
- A list of organizations that RWJF should connect with to advance its goal of reversing the childhood obesity epidemic by 2015

## Key Findings

According to many survey respondents:

- RWJF is one of the most influential organizations in the childhood obesity prevention network in the United States.
- Many of the organizations that connected with each other in one of the three networks—advocacy/policy, training/technical assistance, and research—also connected in one or both of the other two networks, but different organizations constituted the core and the periphery for each.
- Some groups on the periphery were influential on a particular issue (called peripheral hubs), but were not connected to the core of the network.
- Most survey respondents were affiliated with at least one RWJF childhood obesity national program, and one-third were affiliated with more than one national program.
- RWJF has less connection with some constituencies than with others. For example, Laura C. Leviton, PhD, RWJF senior adviser for evaluation, said: “We need to work more with business.”

## Funding

RWJF provided two grants totaling \$116,182 to support the project.

## CONTEXT

Overweight and obesity are significant health problems in the United States. Especially troubling is that nearly one-third of U.S. children and adolescents are overweight or obese, according to research reported in the *Journal of the American Medical Association*.<sup>1</sup> Several studies suggest that eating and physical activity behaviors develop during childhood, and that these behaviors affect weight and health for life.

Data from the Centers for Disease Control and Prevention (CDC) indicate that obese children are more likely to have high blood pressure and high cholesterol than healthy-weight children. They are also more likely to have sleep apnea and asthma, suffer from

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<sup>1</sup> Ogden CL, Carroll MD and Flegal KM. “High Body Mass Index for Age Among U.S. Children and Adolescents.” *Journal of the American Medical Association*, 299(20): 2401–2405, 2008. Available [online](#).

joint problems and musculoskeletal discomfort, and have fatty liver disease, gallstones, and heartburn. Studies also show that obese children are more likely to become obese adults.<sup>2</sup>

Childhood obesity is expensive, costing up to \$14 billion per year in direct health care costs, according to [data](#) from RWJF.

## **RWJF's Interest in Reversing Childhood Obesity**

RWJF is committed to reversing the childhood obesity epidemic by 2015 and has allocated \$500 million across several initiatives and national programs to reach this goal.

These include:

- *Active Living Research*. Also see the [Program Results Report](#).
- *Communities Creating Healthy Environments: Improving Access to Healthy Foods and Safe Places to Play in Communities of Color*
- *Healthy Eating Convergence Partnership Healthy Eating Research: Building Evidence to Prevent Childhood Obesity*
- *Healthy Kids, Healthy Communities: Supporting Community Action to Prevent Childhood Obesity*
- *Information for Action: School Policies to Prevent Childhood Obesity*. Also see the [Program Results Report](#).
- *Leadership for Healthy Communities: Advancing Policies to Support Healthy Eating & Active Living*
- *National Policy and Legal Analysis Network to Prevent Childhood Obesity*
- *Salud America! The RWJF Research Network to Prevent Obesity Among Latino Children*
- *New Jersey Partnership for Healthy Kids: Communities Making a Difference to Prevent Childhood Obesity*

## **RWJF Interest in Social Network Analysis**

RWJF's success in reducing childhood obesity depends in large part on its ability to communicate to important audiences, connect diverse people working on the issue, and build a field of researchers, policy-makers, and advocates. RWJF staff realized that understanding social networks—sets of individuals or organizations and the relationships and flow of information and knowledge between them—would be central to these efforts.

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<sup>2</sup> Centers for Disease Control and Prevention, "Overweight and Obesity: Basics About Childhood Obesity." Available [online](#).

RWJF's Leviton identified three converging circumstances that made social network analysis an area of interest.

1. "In evaluation after evaluation, people would tell us 'I know you are looking for a particular outcome, but the most important aspect for me from this grant is the network of professionals I can now rely on.'" Leviton commented, "That is fantastic, because technical assistance will go only so far—and after we are gone they will continue to interact. We have grown more concerned about sustainability, and connections among people are clearly a way to sustain the work."
2. RWJF President and CEO Risa Lavizzo-Mourey, MD, MBA, has promoted "Connecting" as one of RWJF's "Five Cs of effective philanthropy."<sup>3</sup> Social network analysis is a way of supporting and understanding those connections.
3. RWJF staff understands the power of social media as a way to link people and is interested in using insights from social network analysis to increase the Foundation's presence on social media.

RWJF has funded systematic analyses of the networks involved in its childhood obesity and other initiatives. Staff describes social network analysis as examining the "relationships between individuals and groups by mapping these relationships and assessing their patterns. The resulting map provides a unique picture of how network participants are communicating and behaving."<sup>4</sup>

RWJF-funded research that uses social network analysis methods include: two leadership programs, two initiatives that involved research across disciplines, one advocacy program, one nursing initiative, and one communications program.<sup>5</sup>

## THE PROJECT

The goals of this study were to provide initial understanding of the network of organizations working in the area of childhood obesity prevention in 2011, to determine where RWJF was positioned among influential organizations, and to identify connections RWJF and others would like to develop in the future. LeCroy & Milligan Associates, a Tucson, Ariz.-based private consulting firm specializing in human services program evaluation and training, conducted the study. Elena Malofeeva, PhD, senior evaluation associate, was project director.

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<sup>3</sup> The other four Cs are Communicating, Convening, Coordinating, and Counting. See [online](#) for short descriptions.

<sup>4</sup> See "Social Network Analysis at RWJF" [online](#).

<sup>5</sup> Evaluations using social network analysis include: *Ladder to Leadership: Developing the Next Generation of Community Health Leaders*; *State Health Leadership Initiative*; *Healthy Eating Research: Building Evidence to Prevent Childhood Obesity*; *Public Health Services and Systems Research*; *Consumer Voices for Coverage: Strengthening State Advocacy Networks to Expand Health Coverage*; *Initiative on the Future of Nursing*, and the *Public Health Communications Network*.

The study examined existing childhood obesity prevention social networks by exploring:

- Connections within and across three dimensions:
  - Advocacy/policy
  - Training/technical assistance
  - Research
- Connections involving RWJF’s childhood obesity prevention national programs
- Connections across RWJF’s six childhood obesity prevention priority areas:<sup>6</sup>
  1. Ensure that all foods and beverages served and sold in schools meet or exceed the most recent Dietary Guidelines for Americans
  2. Increase access to high-quality, affordable foods through new or improved grocery stores and healthier corner stores and bodegas
  3. Increase the time, intensity, and duration of physical activity during the school day and out-of-school programs
  4. Increase physical activity by improving the built environment in communities
  5. Use pricing strategies—both incentives and disincentives—to promote the purchase of healthier foods.
  6. Reduce youths’ exposure to unhealthy food marketing through regulation, policy, and effective industry self-regulation
- Connections with 13 different constituencies: advocacy groups, community-based organizations, federal government agencies, local government agencies, media, medical practitioners, philanthropies, policy-makers, private and for-profit organizations, professional organizations, research organizations, school systems, and state government agencies

The study also examined connections that RWJF and other childhood obesity organizations would like to develop in the future.

### ***Methodology: The Key Informant Questionnaire and Social Network Analysis Survey***

LeCroy & Milligan Associates first consulted with RWJF staff and other health experts about the questions to be asked and desired information. The stakeholders wanted all the information about *all* connections among *all* the members and potential members of the network of people working on childhood obesity prevention. Unfortunately, the stakeholder requests were not realistic in light of what could be done via a survey. In

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<sup>6</sup> See descriptions of the six priority areas [online](#).

spite of their concerns about this expectation, both the RWJF program officer (Leviton) and LeCroy & Milligan felt an obligation to try to get the desired information.

Project staff created an online Key Informant Questionnaire and, in March–April 2011, surveyed 49 individuals. The questionnaire asked respondents to identify organizations and individuals considered instrumental in reversing the childhood obesity epidemic. Twenty-seven participants responded.

LeCroy & Milligan Associates then sent a Social Network Analysis Survey to 849 individuals representing 500 organizations<sup>7</sup> in May 2011. LeCroy asked each respondent to describe his or her relationship with those they collaborated with in advocacy/policy, training/technical assistance, or research. This created a huge burden on potential respondents and not surprisingly had an unacceptable response of only 77 respondent organizations (15.4%). They halted the survey. RWJF’s Leviton calls this round of the study “embarrassing.”

LeCroy researchers then re-surveyed the same 849 individuals in the same organizations in June–July 2011, asking them to focus on the 10 most influential organizations or individuals that advanced RWJF’s goal of reversing childhood obesity. In total, 263 people representing 196 unique organizations (39% of the original 500 organizations) responded. Most respondents (90.7%) had received funds from RWJF within the past decade.

This survey collected demographic information about the person and the organization responding and asked respondents to identify:

- Ten organizations with which they had ties in advocacy/policy, training/technical assistance, or research, and the nature of those ties
- Whether they or their organization were affiliated with any RWJF childhood obesity prevention national programs, and the nature and extent of the affiliation
- Which of RWJF’s six priority areas they addressed, their ties to others in the priority areas, names of organizations that connected priority areas, and where RWJF fit within those connections
- To which of the 13 constituencies they related and how, and the names of organizations that most connected to multiple constituencies
- With which individuals and organizations RWJF should connect, with which its grantees should connect, and with which the respondents themselves would like to be more connected

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<sup>7</sup> The surveyed organizations and individuals included those identified through the Key Informant Questionnaire, as well as relevant RWJF staff and grantee organizations.

## RESULTS

The study provided a limited amount of information on a large number of organizations making up the RWJF childhood obesity prevention network in 2011 including:

- **A list of names and attributes of organizations that experts consider influential in reversing the childhood obesity epidemic**
- **Narrative and pictorial descriptions of how organizations connect to one another for advocacy/policy, training/technical assistance, and research—and the strength of those connections**
- **Descriptions of how factors such as geographical proximity and area of focus within the field influence the composition of networks**
- **Descriptions of the connections of the RWJF’s childhood obesity prevention national programs**
- **An examination of how six priority areas identified by RWJF influence the network structure**
- **An analysis of how organizations that work in childhood obesity prevention related to 13 specific types of constituency (e.g., advocacy groups, media, medical practitioners)**
- **A list of organizations that RWJF should be connected with to advance its goal of reversing the childhood obesity epidemic by 2015**
- **A list of organizations that other respondents should be connected with to advance RWJF’s goal**
- **An updated database of current contact and other information about all organizations identified through the analysis.**

## FINDINGS

Malofeeva and Leviton reported the following overall findings in separate interviews:

- “We tried to accommodate our stakeholders, although as we expected, it was not realistic to try to ask almost 900 people about their connections with almost 900 other people,” said Leviton. “I think we discovered some limitations of formal social network analysis methodology, both in terms of response burden and some of the awkwardness of the available software.”
- “We found that there were organizations at the periphery that were not closely connected to the rest of the network,” said Malofeeva. “A few of them were ‘peripheral hubs’ in that they were connected to others at the periphery.” On this point, Leviton noted, “The study showed us which groups were influential on a particular issue but were not connected to the core of the network. Those are groups

we should think about working with or find ways to connect to the core.” Later, Leviton added, “The limitations of the survey method make this difficult to substantiate—if you are only asking about the 10 most important contacts, you are going to miss quite a few overall and quite a few that will appear to be peripheral when in fact they might have been your 50th most important contact.”

- **“Through the analysis we were able to identify the RWJF national programs most connected to the childhood obesity network, and the national programs least connected,”** reported Malofeeva.
- **“One interesting finding that we were fairly sure of before, was that we are not working closely enough with some constituencies,”** said Leviton. “For example, we need to work more with business. This finding will be helpful as we develop our obesity advocacy strategy.”
- **The study found some clusters by priority area within the field of childhood obesity**—which “confirmed what we already knew,” observed Leviton, “that people involved with food might be connected with one another, but might not be involved with groups working on physical activity. In retrospect we did not need to do this study, which was expensive, and the first round of which was just unrealistic, to find this out.”

LeCroy & Milligan Associates reported additional findings in a 2011 unpublished report to RWJF:

- **RWJF is one of the most influential organizations in the childhood obesity prevention network in the United States, according to most of the respondents.** Leviton notes that these respondents “were in our network and were our grantees, responding to a survey we funded, so this is not much of a finding.”
- **Many of the organizations that connected to each other in one of the three networks—advocacy/policy, training/technical assistance, and research—also connected in one or both of the other two networks.** However, in each network, different organizations constituted the core and others the periphery, depending upon the degree of connectivity.

— Two RWJF national programs, *National Policy and Legal Analysis Network to Prevent Childhood Obesity* and *Leadership for Healthy Communities*, were among the top 10 influential organizations in the training/technical assistance network.

Two RWJF national programs, *Active Living Research* and *Healthy Eating Research*, were among the top 10 organizations in the research network.

No RWJF national programs were among the top 10 in the advocacy/policy network.

- Among universities: Yale University’s Rudd Center for Food Policy and Obesity, San Diego State University (where the national program office of *Active Living Research* is located) and the University of North Carolina at Chapel Hill (where the national program office of a former program, *Healthy Eating by Design*, and an active program, *Healthy Kids, Healthy Communities*) were among the top four organizations in both the advocacy/policy and research networks. The University of Arkansas (where RWJF’s Center to Prevent Childhood Obesity<sup>8</sup> was located at the time of this grant) was among the top six in advocacy/policy as well as training/technical assistance. The University of Minnesota (where the national program office for *Healthy Eating Research* is located) was a key connector in advocacy/policy and research.
- Other key organizations—highly connected to RWJF and to other network organizations—included:
  - Centers for Disease Control and Prevention (within the top eight in all three networks)
  - PolicyLink, Public Health Law and Policy, and YMCA of the USA (within the top six for advocacy/policy and training/technical assistance networks)
  - National Institutes of Health (third in the research network).

These organizations are important hubs that might be used for distributing resources and information from RWJF to the rest of the network.

- Some peripheral organizations had their own networks that were not connected to the main hub. These organizations are locally influential. Examples included:
  - SWAH (Self Wealth and Health) Empowerment and the Tulane University School of Public Health and Tropical Medicine (advocacy/policy and training/technical assistance)
  - Stapleton Foundation for Sustainable Urban Communities (for research)
- **Most organizations responding to the survey had an affiliation with at least one RWJF childhood obesity national program, and one-third had more than one national program affiliation.** This is partly because the survey oversampled RWJF staff and grant recipients.
  - *Active Living Research* was the most connected national program.

A list of organizations that reported affiliation with five or more national programs was also generated. These organizations acted as important bridges connecting multiple national programs.

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<sup>8</sup> RWJF shut the center in early 2012.

- **Responding organizations were typically involved in more than one of RWJF’s six priority areas, and 28 were involved in all six areas.**
  - Childhood obesity prevention organizations working in multiple priority areas have a lot of contacts. They may be able to influence organizations involved in fewer areas or build synergies among them.
  - RWJF priority areas represent more than shared interests. They are the way responding organizations identify their place in the childhood obesity prevention network.
  - Organizations working in priority area #4 (“Increasing physical activity by improving the built environment in communities”) were most likely to be connected with each other, using the survey methodology.
  - Organizations involved in priority area #5 (“Using pricing strategies—both incentives and disincentives—to promote the purchase of healthier foods”) were least likely to be connected with each other, using this survey methodology.
  - Geographic region influenced involvement in specific priority areas. For example, East and Mountain West respondents were more likely to be involved with priority area #1 (“Ensuring that all foods and beverages served and sold in schools meet or exceed the most recent Dietary Guidelines for Americans”), while South and West respondents were less likely to be involved with this priority area.
- **Organizations in the childhood obesity prevention network interface with a variety of constituencies.** The type of organization, region, size, age, and funding influenced the type of constituency to which organizations were connected.
  - Organizations that have strong ties to multiple constituencies may be particularly important as change agents. These organizations can make connections between childhood obesity prevention networks and the broader environment outside the childhood obesity field.
  - Advocacy groups, policy-makers, and research organizations were more likely to have connections with childhood obesity prevention organizations in RWJF’s network. It was least likely for this to be the case for private/for-profit organizations, medical practitioners, professional organizations, and media, which is not surprising as RWJF generally does not fund medical practitioners or these other groups.

## Limitations

LeCroy & Milligan Associates noted the following study limitations in the report to RWJF:

- The study did not assess a full network due to the large number of existing members and issues related to the respondent burden.

- The study did not analyze the emerging members of the three networks and their connections.
- Asking respondents to report on their relationships with only the 10 most influential organizations favored well-connected, highly visible, and influential organizations over smaller, peripheral ones.
- The findings provided limited analysis of how respondents were connected to RWJF childhood obesity prevention and the staff of RWJF national program offices. This information was available only when a respondent identified an RWJF program as one of the 10 most influential organizations.
- The study estimated the strength of connections but did not address the impact of those connections on RWJF’s goal.
- The study did not address social media.
- The study provides only limited understanding of how childhood obesity grantee organizations and staff were connected to grantee organizations of other RWJF interest areas such as vulnerable populations. The focus was on external connections.
- The study assessed connections and networks in 2011, but did not analyze how networks had been changing over time.

## RECOMMENDATIONS

LeCroy & Milligan Associates offered these recommendations in the report to RWJF:

- **Develop strategies to better utilize hub organizations in advocacy/policy, training/technical assistance, and research—including hubs at the core of the network and hubs at the periphery.**
- **Identify strategies for how RWJF’s childhood obesity prevention national programs could play a more central role in communications, especially with organizations in the advocacy/policy network.**
- **Continue monitoring national program communications and standing in the field and identify gaps and areas of emphasis.** More connected national programs and priority areas might be favored as targets for influence by RWJF, as these bring together larger numbers of other organizations.
- **Learn from successful initiatives to improve the effectiveness of the childhood obesity prevention campaign.** For example, organizations working on priority area #3 (“Increasing the time, intensity, and duration of physical activity during the school day and out-of-school programs”) and priority area #4 (“Increasing physical activity by improving the built environment in communities”) were substantially more likely to be working directly together than two organizations working in other priority areas.

Lessons from these collaborations could be useful for other priority areas or initiatives.

- **Prioritize constituencies and organizations to target for connection.**

Organizations with which RWJF should connect that respondents recommended, and organizations that respondents indicated they wanted to connect with themselves, suggested the priorities. Also, lessons may be learned from studying constituencies that are more intensively networked, such as community organizations, advocacy groups, policy-makers, and research organizations.

## LESSONS LEARNED

1. **SNA may simply be unrealistic for a project of this kind.** It was simply not feasible to collect complete information on everyone’s contacts using survey methods. It is not clear what other methods would have produced more useful information. (Program Officer/Leviton)
2. **Consider end users more carefully before undertaking such a project.** Leviton notes that in this case, social network analysis (SNA) was a method in search of a question to answer. “Although internal stakeholders were enthusiastic about trying out the SNA approach, it was never clear how people would, in fact, use the information. If the goal were simply to generate a list of contacts, that was accomplished in the very first phase. It is possible that certain findings, such as the presence of peripheral hubs, might be verified through other methods, but the question of usefulness still needs to be answered first.”
3. **During initial project planning, ensure that the scope of work specified is feasible within the timetable allowed.** According to Project Director Malofeeva, the six-month timeline in the original RWJF grant was too short, and the scope of work was very broad. “There was too much, too quickly, to be done too soon. It was important to work with RWJF staff as to realistic expectations for social network analysis,” Malofeeva noted. She said that issues related to the timetable and scope of work were resolved by working with RWJF throughout the project. Leviton agrees: “when you are trying out a new method for a new purpose, a realistic timeline is about three times the length you expect.”
4. **Sometimes, consulting internal stakeholders can simply confuse the issues.** Generally speaking, it is a good idea to consult both internal and external stakeholders for a research project, because that helps to ensure usefulness and buy-in. But, in this case, it did neither. The internal stakeholders had an unrealistic view of what SNA could provide, and both the program officer and the contractor needed to be more firm about what was realistic to accomplish. (Program Officer/Leviton)

## AFTERWARD

The study ended with the conclusion of the grants. As of April 2012, LeCroy & Milligan Associates were considering preparing articles describing the development and fielding of the surveys.

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