NCCOR
National Collaborative on Childhood Obesity Research

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Evaluating Community-Clinical Engagement to Address Childhood Obesity: Implications and Recommendations for the Field

EXECUTIVE SUMMARY

Background

The National Collaborative on Childhood Obesity Research (NCCOR) is a public-private partnership of four leading research funders—the Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH), Robert Wood Johnson Foundation (RWJF), and the U.S. Department of Agriculture (USDA)—that addresses childhood obesity through research and evaluation and dissemination of research findings. The Engaging Health Care Providers and Systems workgroup of NCCOR specifically works to promote research findings as they apply to the health care sector. On November 9–10, 2015, this workgroup convened a workshop entitled, "Evaluating Clinical-Community Engagement Models: What Works and What Doesn't."

Workshop Aims

The aims of this workshop were to identify: (1) examples of partnerships and engagement between communities and clinical settings (including hospitals and health care systems) that address obesity prevention and recommendations for interventions; (2) features of the evaluation of those efforts, including facilitators and barriers; (3) gaps in the evaluation of these efforts; and (4) opportunities and recommendations to promote evaluation strategies and metrics for these engagement models.

Workshop Proceedings

During the course of the two-day workshop, a series of multidisciplinary panels that included health care providers, childhood obesity experts, and representatives from health care systems, community groups, professional organizations, and funders discussed strategies used by health care providers and systems to engage communities in addressing childhood obesity, and examined the degree to which those efforts have undergone evaluation.

The goals were to provide recommendations and a framework for evaluation of future community engagement efforts addressing childhood obesity.

The first day of the workshop was structured into panel discussions on differing approaches to clinical-community engagement and decision making by funders and other leadership. On the second day, participants worked in breakout groups to summarize lessons learned and draft recommendations for next steps. The purpose of this white paper is to provide a background on the impetus for evaluation of community-clinical engagement models, describe workshop development, and capture the workshop findings and recommendations.

Next Steps

The full white paper can be accessed on the NCCOR website at http://nccor.org/downloads/nccor-community-engagement-workshop-summary.pdf

It is anticipated that by systematically evaluating health care-community engagement efforts, the knowledge base of best practices to improve healthy choices and lifestyles by individuals, families, and communities' real improvements can be made towards population health. Moving forward, the Engaging Health Care Providers and Systems workgroup of NCCOR intends to engage in several activities to support the health care sector (including, clinics, hospitals, and systems), communities, and other organizations in evaluating health care–community engagement efforts. Early efforts to support continued improvement in this field include a webinar series featuring many of the presentations from the workshop. These webinars are available at http://nccor.org/resources/nccor/webinars.phpwebinars.php

BACKGROUND

The health care sector, including clinics and hospital systems, is increasingly working towards engaging communities as part of an effort to directly address population health.[1] For example, to support healthier eating and active living, community health centers may engage in activities to improve the health of the communities they serve, such as providing health screenings,[2] on-site farmers markets,[3,4] or supporting walking and activity in parks.[5] Hospitals may engage in similar efforts as well as those efforts requiring more resources, such as supporting early care and education and school wellness programs[6,7] or Safe Routes to School (SRTS) programs.[8]

The Affordable Care Act of 2010 seeks to improve population health by stipulating that in order for nonprofit hospitals to qualify for tax-exemption, they must engage in activities that benefit the health of the communities they serve.[9] This begins with a 3-year implementation cycle that starts with conducting a community health needs assessment (CHNA) in collaboration with community stakeholders, developing and implementing a community health improvement plan (CHIP), making the results of the assessments and the CHIP publicly available, and collaborating with public health departments. In 2014, clarifications from the Internal Revenue Service (IRS) indicated that hospitals may also engage in and implement health promoting activities that support nutrition and improve social determinants of health[10,11] as part of their CHIP.

However, an analysis of more than 1800 hospitals indicated that >85% of reported community benefit efforts did not directly relate to activities to improve population health.[12] These included discounting of unreimbursed costs, charity care, subsidized health services, workforce training, and research. With the growing national focus on community and population health, many health care organizations now collaborate with both community and public health partners to develop a variety of community benefit initiatives.[13,14,15] Furthermore, prevention and control of obesity has been identified as a priority area for community health improvement by many hospitals.[16]

Strategies to address obesity as part of a CHIP have included supporting improved nutrition (e.g., increasing access to healthier foods through farmers markets and utilization SNAP benefits), physical activity programs in schools, public awareness campaigns (e.g., advocating for breastfeeding), and community-based policy initiatives (e.g., worksite wellness, food policy councils).[17,18]

A principle of effective CHIPs includes evaluation as part of a continual quality improvement process.[11] The reach, effectiveness, adoption, implementation, and maintenance (RE-AIM) framework helps to evaluate the potential public health impact of real-world implementation of interventions (i.e., programs, policy, and practice).[19] Reach includes the number, proportion, and characteristics of people who engage in an intervention compared to the target audience. Effectiveness includes the assessment of whether the targeted behavioral or health outcome was achieved. Adoption assesses delivery staff and setting variables (e.g., staff/setting characteristics and intervention adoption rate). Implementation assesses intervention fidelity and resources (i.e., cost and time). Finally, the maintenance dimension assesses both individual-level behavior change and organizational/setting-level intervention sustainability. This evaluation framework, however, has been applied in only a few instances to assess the impact of CHIPs on community health in general[20] or obesity in specific.[18]

WORKSHOP PANELS

On Day One, four sessions addressed differing approaches to clinical-community engagement and decision making by funders and other leadership:

PANELS:

1. Community Engagement at the Clinic Level
2. Community Engagement at the Hospital and Health Care System Levels
3. Community Engagement: Partnering Across Sectors
4. Influences on Decision Making Within Clinical-Community Systems

For Panels 1–3, the panelists considered the following key questions, based on the RE-AIM framework, to guide their discussion:

- What have been more successful or less successful strategies in community engagement?
- What is the reach and implementation fidelity of the program or model?
- What dose would be effective?
- What are the current evaluation methods and metrics?
- What is known about the program's effectiveness, replicability (i.e., how easy is it to incorporate into a new community), and sustainability?

Because Panel 4 focused on the perspectives and experiences of funders, community benefit program managers, and community-based organizations, a separate set of key questions was designed to understand decision making processes and value propositions:

- What are the key decision factors for investing in clinical-community engagement?
- What are the decision making processes employed?
- What has been the impact of health care reform and transformation on needed evaluation metrics?
- What are the lessons learned and how have these changed engagement experiences?

On Day Two, the workshop panelists summarized the lessons learned and discussed recommendations for evaluation frameworks and plans. They divided into breakout groups to develop a potential evaluation framework for childhood obesity health care-community engagement models, including a logic model, indicators, and metrics. The workshop closed with breakout session reports.

PANEL 1: COMMUNITY ENGAGEMENT AT THE CLINIC LEVEL

PANELISTS:

1. Right Choice Fresh Start (RCFS)
2. Texas Childhood Obesity Research Demonstration (CORD) Project
3. HealthPartners' PowerUp, Bear Power, and NET-Works initiatives
4. FitKids360

RIGHT CHOICE FRESH START

Program

Right Choice Fresh Start is a farmers market that opened in 2010 as a partnership between the University of South Carolina and a Federally Qualified Health Center (FQHC) in Orangeburg, SC. In June 2016, the market opened for its seventh season with the goal of expanding to a new FQHC site in the future.

When the project started, the prevalence of obesity was high (~40%) in the FQHC's client population. This population had a lower household median income compared to that of the state. The project sought to: 1) increase access to produce among patients at the health center, 2) improve diet among adults and children in the neighboring community, and 3) increase demand for local farmers' products. Increasing demand for local farmers' products was not intended to directly improve health, but the theory of change indicated that by addressing local economic development, social determinants of health and food access, overall community and individual health could be improved. Moreover, some of the farmers at the market were also patients at the health center.

Evaluation

The University of South Carolina's CDC-funded Prevention Research Center conducted an evaluation of this health center-based farmers market. The baseline evaluation and assessment included asking FQHC board members and community residents how a health center–based market would help the community. The project was successful in seeking additional funding from the USDA, South Carolina Cancer Alliance, and other sources. Using a logic model based on the Multicomponent Food Access Framework[21] and focusing on systems change also contributed to the success of the intervention. Furthermore, efforts were more successful when they were managed by FQHC leadership rather than organized by academic partners. For example, an FQHC-led produce prescription program was more effective than a similar effort led by the university partners in increasing purchases at the farmers market.

The reach and use of the market was highest among patients from the health center. About 45% of the customers at the farmers market came from the community (i.e., were not patients at the health center). The majority of the people reached by the farmers market were African American women and 40% had children in the household. The farmers market was effective in getting about 7,000 sales transactions during two seasons of operation. A focused evaluation of patients from the FQHC with diabetes found a dose-response relationship between farmers market use and improvements in diet. Patients with diabetes who shopped at the market more often had a 2.1 greater odds of improving daily servings of fruits and vegetables consumed compared to those shopping less frequently. Using a continuous quality improvement framework, the program was adjusted based upon input from the community and advisory councils using low-tech methods for evaluation. The market implemented a monthly "dot survey" method in 2014 providing an opportunity for customers to give feedback on key questions guiding market implementation such as "I eat more fruits and vegetables since I started shopping at the RCFS market"—a statement that 46% of respondents "strongly agreed" with. To increase adoption, Right Choice Fresh Start created and shared a documentary film, Planting Healthy Roots, which helped garner further acceptance of the market by the community

and also won a national award from the Society for Community Research in Action because of its ability to authentically demonstrate the principles of community engagement underpinning the RCFS. To support implementation of the FQHC-based market model in other contexts, the project team created a manual that recorded the process used to develop the farmers market, which now serves as a model for how to engage the community in the process.[3] To ensure maintenance, all of these results were shared with stakeholders and state legislators to establish a state-funded fruit and vegetable coupon program for Supplemental Nutrition Assistance Program (SNAP) recipients.

TEXAS CHILDHOOD OBESITY RESEARCH DEMONSTRATION (CORD) PROJECT

Program

Texas CORD targeted efforts at multiple levels across multiple sectors concurrently to address childhood obesity in two communities in Austin and Houston. The intervention implemented both a primary obesity prevention program at the community level and a nested, secondary prevention randomized controlled trial (RCT). The nested RCT tested the efficacy of a 12-month intensive family-centered secondary obesity prevention and treatment program embedded in the primary prevention community. Finally, the intervention attempted to quantify the incremental cost-effectiveness of the secondary prevention program.[22]

The community level primary prevention intervention arm included coordinated health programs and policy, systems and environment (PSE) based approaches in early care and education sites and elementary schools; and electronic health records system improvements in primary care clinics. The primary prevention community intervention also included primary care provider training and implementation support, and development of the Next Steps-based visits for primary care providers, a set of brief strategies for behavior change including motivational interviewing.

For the secondary prevention RCT, the children and families were recruited from the primary care community clinics in the intervention community and then were randomized to the Next Steps-based primary care arm or to a more intensive 12-month intervention. Families in the Next Steps arm could return to see their primary care provider. The primary care providers received training on the Next Steps-based visits. Families received a booklet corresponding to each of the Next Steps themes so that they could continue to work on behavior goals. Children in the intervention group were assigned a community health worker and participated in a 10-week family program at the YMCA-based **Mind, Exercise, Nutrition, Do It! (MEND)** program, followed by a 9-month maintenance program, including a book club, cooking class, and team sports programs and activities. Text messaging was also used to reach families and help connect them with programs, classes, and activities.

Evaluation

The Texas CORD evaluation showed that it had a large reach, serving over 1600 children in two large control and intervention communities in Houston and Austin, with a nested randomized control study testing a much more intense 12-month intervention including 576 children and their parents from Houston and Austin. System level measures were captured through structured interviews with personnel at schools, child care facilities, the YMCA, and clinics. The interviews assessed project management, staffing, facilities, communication, and sustainability. Surveys were also conducted with school teachers, parents, children (in 5th grade), early childhood educators, clinicians, and advisory committee members. In addition, researchers collected community assessments, height and weight data on the children, BRFSS data, and vending machine audits. Community level data were collected at baseline and two years. For the intervention group, assessments of children's and parents' physical health, diet, fitness, and psychological health were performed at baseline, 3 and 12 months, along with an assessment of parents' satisfaction with the health care system. The study recently concluded, and outcome analyses are currently underway.

Training and refresher strategies were critical to implementation at the clinic level. However, as most insurance plans, Medicaid and private, in Texas do not pay for visits to primary care provider to address obesity, outside of well child check-ups, a families' ability to see their primary care providers for follow-up visits to treat their obesity and to support their healthy changes was limited. This lack of reimbursement prevented providers

from being able to see patients as frequently as they would have liked for health care visits that could have helped their patients with obesity successfully make healthy changes. Additional lessons learned from an implementation perspective included that it is necessary to find a balance between structure and flexibility: the MEND sessions require structure and a schedule, but families need flexibility in the offerings in order to use them. Furthermore, cultural sensitivity and relevance, and the availability of bilingual materials and program leaders, was invaluable. The Texas CORD team translated, culturally adapted, and produced a Spanish version of Next Steps and the Texas CORD team has since worked with the **American Academy of Pediatrics (AAP)**, National Institute for Children's Health Quality, and *Let's Go!* in Maine to further make the Next Steps materials[23] available through the AAP bookstore. To maintain regional efforts, Texas CORD partners continue to be a resource for MEND programs offered at area YMCAs. Intervention materials remain in the primary care clinics, and the team continues to support the implementation of Coordinated Approach to Child Health (CATCH) Coordinated School Health programs, and to advocate for Medicaid and private insurance plan reimbursement for obesity treatment and counseling.

HEALTHPARTNERS

Program

HealthPartners serves more than 1.5 million medical and dental health plan members and more than 1 million patients. HealthPartners includes a multispecialty group practice of more than seven hospitals; 1,700 physicians; 47 primary care clinics; 22 urgent care locations; 22 dental clinics; and numerous specialty practices in Minnesota and western Wisconsin. PowerUp and BearPower are HealthPartners initiatives focused on overall community engagement to impact health and body mass index (BMI) among youth through policy and social norm and system change strategies. PowerUP and BearPower share a common focus, but the specific activities and initiatives are shaped by the seven respective communities in which they are located. Across the initiatives school districts, afterschool programs, early care and education, parent organizations, athletics and youth sports, nonprofits, businesses, culinary schools, faith community, public health, and local government are involved. Activities have included "food coaches" that provide guidance on establishing healthy policies for early care and education sites and schools, as well as promoting "passports" to National Parks in the area.

Evaluation

Since beginning PowerUP, the reach of community-based classes, events, open gyms, and other activities has increased with nearly 70,000 community members reached in 2015. In BearPower, there has been substantial work within the nine White Bear Lake schools to implement best practices for nutrition and physical activity. To assess effectiveness, a scoring algorithm was used and showed that, over time, using food as reward has decreased, and physical activity opportunities and healthier food and beverages options at school (e.g., healthier foods at school carnivals) have increased. In fact, out of a total possible score of 100, the mean score of schools increased from 60 in 2014 to 73 in 2015. Several strategies were used to increase adoption by providers, families, and partners—including a partnership with a large grocery store where families received a "prescription" (coupon) for fruits and vegetables at that store. Although only 29% redeemed the coupon, the opportunity to write a prescription was found to be a new way for engaging families. Another primary care-based initiative also used a coupon for 3 months' reduced membership at the YMCA, with a frequent-attendance benefit that provides reduced membership rates. However, sharing data on family usage of YMCA coupons and reduced memberships has helped health care providers streamline and tailor their counseling messages and thus increase implementation. Finally, some strategies, such as the coupon redemption program, have helped grocers develop a strong partnership with other partners and families, an important step towards maintenance.

FITKIDS360

Program

FitKids360 is a healthy lifestyle program based in the community of Grand Rapids, Michigan, that helps children 5–16 years old with a BMI at or above the 85th percentile, and their families in a group setting to practice healthier behaviors. The program is housed within Health Net of West Michigan, and evaluation is supported by the Helen DeVos Children's Hospital's Healthy Weight Center. Desired outcomes are improved BMI percentile, psychosocial outcomes, and changes in the family environment. Health care providers refer children based on BMI and readiness-to-change assessments, to determine if it is a good time for the family to start and if it is likely that they will stay with the program. The family attends an orientation and six weekly sessions with a focus on behavior, nutrition, and physical activity. Extended family can participate, as these are people who are supporting change. Classes are free of charge, with separate sessions for teens, and are available in Spanish. Recently, classes have become available in the Detroit area, Indiana, Colorado, and Montana. Participation data are shared with the referring provider. The program is funded by local grants and foundation support, and classes are sponsored by physician practices, hospitals, payers, and community groups and staff are primarily volunteers. There are multiple locations to increase accessibility, with in-kind donations of space, and the program uses a standardized curriculum with facilitators receiving training. Partners include hospital systems, college and medical student groups, YMCA, boys/girls clubs, and many more.

Evaluation

The FitKids360 evaluation showed that among the 142 children who participated in 2015, the retention rate reached almost 80%. The average retention rate from 2010–2015 across all children is 69%. At the first and last FitKids360 class, the following measurements are taken: height, weight, psychosocial functioning, lifestyle behaviors, and the Family Nutrition and Physical Activity Assessment (FNPA). An analysis of the data indicate modest, but significant, improvements in BMI, age- and sex-adjusted BMI z-scores and higher FNPA scores at follow-up (9%).[24] FitKids360 reunions and FitKids360 On the Move, a summer walk-to-5K training for past participants, provide opportunities to collect longitudinal measurements and other data and help with sustainability of newly adopted healthier behaviors by children and families. Improvements in implementation are assisted by incorporating the readiness-to-change counseling and FNPA family environment assessment into primary care practices and selective referral of more complex patients into tertiary weight management programs.

PANEL 1: KEY OBSERVATIONS AND INSIGHTS

- Evaluation is a circular process. It is important to not only decide what to measure and how to do so, but also to receive critical input from the community and feed data back to stakeholders. This process can help increase buy-in, reach, and the selection of effective strategies.
- Diversity of data is essential, as is leveraging information and data systems that are already in place, such as the electronic health records (EHR) system. For example, the prevalence of obesity and associated health problems can be monitored by leveraging the comprehensive data available in EHRs.
- Cost analyses that incorporate benefits such as parental weight loss and indicators of well-being and quality of life can also be used to identify promising interventions and enhance maintenance. Constant training of and reminders to staff and providers are vital for program implementation. These processes need to be captured in the evaluation.
- Tailoring data to stakeholder needs is critical. Diversity of outcomes and process data helps to make connections between healthier behaviors and outcomes that stakeholders care about more immediately, e.g., school performance, is critical and can further support maintenance of the intervention.

PANEL 2: COMMUNITY ENGAGEMENT AT THE HOSPITAL AND HEALTH CARE SYSTEM LEVELS

PANELISTS:

1 Duke University

2 Nationwide Children's Hospital

3 New York State Health Foundation

DUKE UNIVERSITY

Program

Bull City Fit is a partnership between Durham County and Duke University. The specific entities include Durham's Edison Johnson Community Center and Duke Children's Healthy Lifestyles pediatric weight management program. Duke University collaborated with participants and families enrolled in the weight management program to design and name Bull City Fit. Fully developing the program was a two-year process involving a shared use/joint use agreement between city government and the hospital system to form this alliance.

The conceptual framework for the intervention is analogous to that of the obesity chronic care model[25] with clinical obesity treatment and community-based programming supporting parent and child motivation to participate in treatment. The design of Bull City Fit includes semi-structured activities six days a week, using parks and recreation facilities, for two hours each day—e.g., pool, gym, community garden space, small kitchen space. The health system contributes staffing and equipment funded through internal and external grant mechanisms; the City of Durham contributes space free of charge for participants. A steering committee representing Duke clinicians, Parks and Recreation staff, city government, patients, parents, and Bull City Fit staff meet quarterly to plan activities and address problems.

Evaluation

The Bull City Fit evaluation indicated a mean of 40 low-income and largely Spanish-speaking families attended each session, and the average family attends 12 sessions in the first three months of participation. The majority of the participants live within 10 miles of the facility. Thus, the program is of high-intensity and has moderate reach among a specific group of low-income children with obesity. To enhance adoption, the program works on shared use agreements where, in return for allowing the hospital to use a public park facility for child and family-specific programming, the hospital contributes staff and funding where possible to improve the facility. Furthermore, by running the program on site, the facility's usage numbers are increased, directly leading to a larger fiscal appropriation for that center. The program was able to enhance implementation by up-front and ongoing engagement of the hospital and park leadership as well as community partners. Maintenance of the program is helped by the tremendous support for the program by local community partners, families, and the hospital, which sees the ongoing efforts as aligned with its mission and vision.

BULL CITY FIT IN ACTION!
Shared with permission from Sarah Armstrong, MD

KAISER PERMANENTE

Program

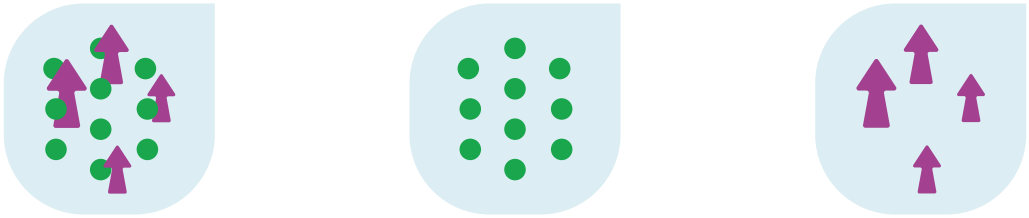
Kaiser Permanente is a self-insured health system. Kaiser Permanente's Community Health Initiative (CHI) is an obesity prevention initiative aimed at creating more opportunities for safe physical activity and healthy food in communities across the nation. The CHI logic model provides a roadmap for evaluation of efforts centered on creating PSE changes, increases in safe physical activity and consumption of healthier food that lead to decreases in obesity.

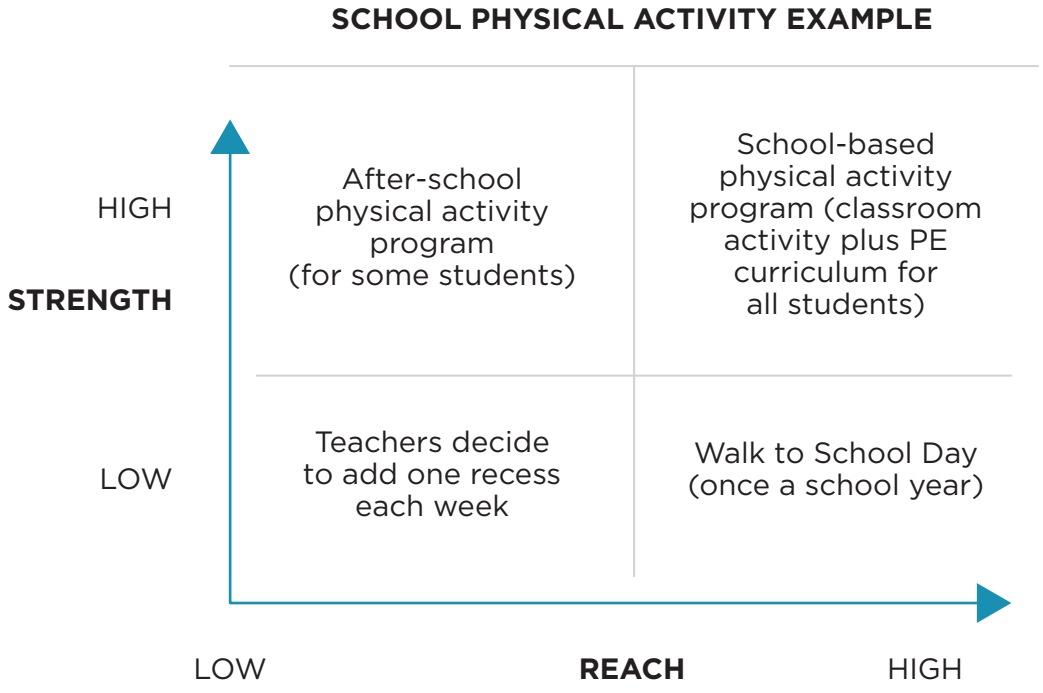
Evaluation

While community transformation is becoming palpable, the evaluation is now focused on the nature of those changes—are they strong enough to affect population health? Improvements in population health likely require a combination of activities and strategies in multiple sectors. For instance, a one-day walk-to-school program needs to be combined with a larger set of interventions—all creating opportunities for more kids to be more physically active all day, every day. For example, a community can work on turning a one-time walking event into multiple walk-to-school days—with more kids, walking home from schools, improving streetscape so that kids can more safely walk to and from school. The idea is to create opportunities throughout the day for kids to improve activity levels. Kaiser Permanente refers to this evaluation methodology and approach as "dose," a strategy to maximize reach and strength to influence more lives and increase the likelihood of seeing health improvements at the population level (Figure). To help assess the dose of any particular strategy, Kaiser Permanente helped develop a dose toolkit[26] that incorporates measures of reach and effectiveness to calculate the dose of an intervention's impact on population health.[27] To assess the dose delivered to potentially improve population health by any intervention, the reach of that intervention is multiplied by its strength or effect size. A program may have high reach but low strength (e.g., a walking trail is accessible to many people but it may not connect destinations or in isolation is unlikely to significantly impact any individual's health outcome) or low reach and high strength (e.g., an intensive physical activity program that only enrolls a few families but significantly increases fitness levels has a great impact in only these individuals). A key element is defining the "denominator," or the target population. Determining dose can help partners choose and evaluate population health improvement strategies by allowing for conversations with communities about which may be the most impactful strategies in a given community.

Kaiser has been using this approach to evaluate many of its initiatives. In Colorado, Kaiser implemented a comprehensive strategy targeting physical activity. Interventions included school policies, redesigned active play areas, changes in the PE curriculum, SRTS, open gym, and consistent messaging. Comprehensive strategies like this target a single population and can lead to creating measurable population health improvements within the population group.

FIGURE: ASSESSING THE DOSE OF COMMUNITY INTERVENTION STRATEGIES.





The top of the Figure presents the concept of the dose of an intervention: the product of the reach and strength, or effectiveness, of the intervention. The bottom of the Figure provides a graphical presentation of school physical activity interventions by comparing both high and low reach and strength interventions.

NATIONWIDE CHILDREN'S HOSPITAL

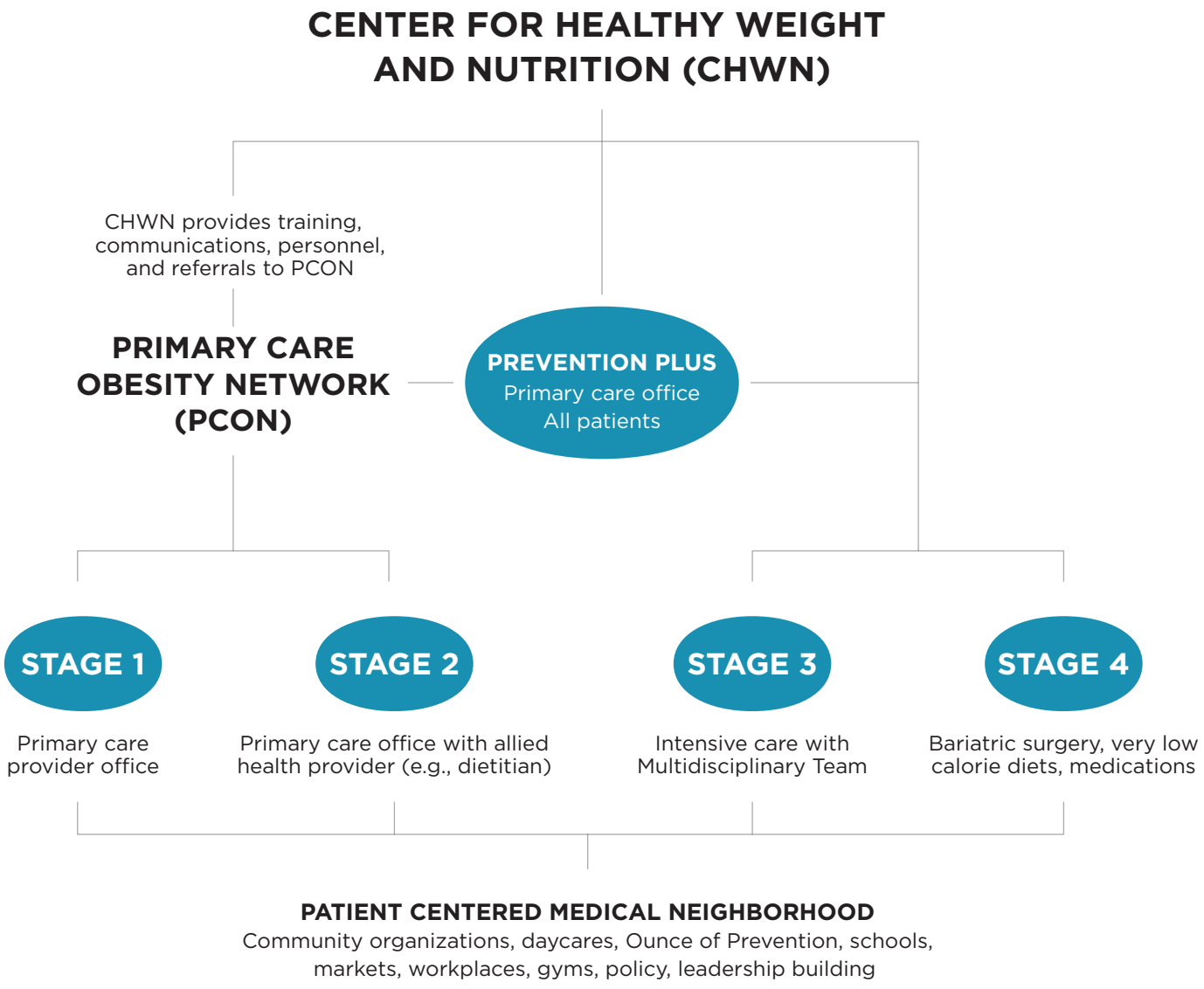
Program

In response to a legislative bill to increase BMI screening, improve access to care, and address deficiencies in provider training, Nationwide Children's Hospital began the Primary Care Obesity Network (PCON) as a partnership between primary care pediatric offices and the hospital's Center for Healthy Weight and Nutrition. The objectives were to implement evidence-based obesity prevention care in primary care clinics and create a patient-centered medical neighborhood (PCMN).

The PCMN is a system of relationships around the medical home, linking patients with resources around the community while maintaining redundant and consistent messaging across several settings. Care delivery is coordinated with the medical home and is evaluated using Agency for Healthcare Research and Quality (AHRQ) clinical-community relationships evaluation roadmap.[28] Some examples of interventions include the afterschool Fitness and Nutrition (FAN) Club, community gardens, grocery store tours, community events, establishing a resource database, and linking with BMI screening in schools.

Evaluation

Nationwide Children's Hospital's interventions have elements of high reach and potential effectiveness. The interventions involved three zip codes with a total population of 1,856, including 612 children in 493 families. To evaluate population dose using the dose methodology described above, they looked at the **"My Plate"** placemat given to the participants seen in the PCON primary care practices: in this instance, effectiveness was estimated as 0.5%, indicating a minimal strength, but the reach was 95% of the estimated population. This led to an estimated population dose of 0.48%. In comparison, looking at the **Progressive Aerobic Cardiovascular Endurance Run** (PACER) test results in the afterschool Fitness and Nutrition (FAN) club program in three schools, the reach was about 11.4% (380 children tested out of a total of 3333 children) and effectiveness was moderate at 62.6%, yielding an estimated population dose of 7.1%. By delivering consistent and parallel messaging across sectors, including through the existing network of school nurses, the program has been able to increase recognition and adoption of its efforts to support healthier lifestyle choices. Maintenance and growth of the program efforts were also supported by strong leadership engagement at the hospital and in the schools and communities, including local and state government.



Reproduced with permission by Dr. Ihuoma Eneli, Nationwide Children's Hospital.

NEW YORK STATE HEALTH FOUNDATION

Program

NYSHF has focused on the deployment of the Prevention Agenda—a funded activity designed to improve care, reduce cost, increase value-based care, and address health inequities (NYSDOH Dashboard).[29] NYSHF funds 17 organizations across the state to work on community health improvement projects (CHIP) relevant to the Agenda, including preventing chronic disease and promoting a health-supportive built environment. Changing social and environmental norms to make the default decisions the healthier ones has been an important strategy. For example, one community is working to eliminate soda vending machines in school, improve care for asthma, and work with businesses to improve breastfeeding-friendly workplaces.

Evaluation

The reach of NYSHF's systems-level approach is a major strength. Nevertheless, NYSHF found that documenting the effectiveness of community and clinic-based initiatives is a major challenge. It is often unrealistic to assess effectiveness with "gold standard" approaches such as randomized clinical trials. Moreover, it is often likely that a single intervention will not move the needle on BMI, but multilevel combinations of interventions could have an impact. The greatest effectiveness and improvements at the population level required a combination of activities and strategies in multiple sectors. Similar to Kaiser Permanente's experience, NYSHF found that physical activity increased when multiple interventions were combined. NYSHF found through provider and stakeholder group input that adoption needs to leverage new tools and technologies to be enduring. For example, in-person groups were not as effective as online groups, and using "old data" or "big picture" data is less motivating to community groups than more granular local data. Implementation can be assisted by funding on-the-ground community members to develop and deliver the intervention. To support maintenance of the efforts, it was noted that creating a culture of health perspective among all stakeholders helped direct efforts towards sustainability planning.

PANEL 2: KEY OBSERVATIONS AND INSIGHTS

- Partnering with others is essential for achieving a greater population dose, or impact, by extending reach and maximizing effectiveness.
- A strategic and balanced portfolio of interventions is built by allocating the resources of a group of partners to deliver interventions to specific populations.
- To ensure adoption, it is critical to identify and emphasize direct benefits for community partners.
- Implementation strategies must be discussed and shared upfront and through ongoing engagement of partners.
- Key factors needed for maintenance are of interest to a community and a health system in creating a culture of health, buy-in from community and clinic leaders, and funding to cover costs (administrative staff, printing, materials).

PANEL 3: COMMUNITY ENGAGEMENT: ENGAGING MULTISECTORAL PARTNERS

PANELISTS:

1. Fitness in the City (FIC), Boston
2. Let's Go!
3. Health Care Without Harm (HCWH)

FITNESS IN THE CITY, BOSTON CHILDREN'S HOSPITAL

Program

FIC was developed by the Office of Community Health at Boston Children's Hospital. FIC started 10 years ago, responding to a CHNA and community concerns identifying childhood obesity as a priority issue to address. Community health centers (CHCs) were a natural choice to implement FIC because more than half of children in the city receive their primary care in community health centers, and the hospital had relationships with 11 of the 23 CHCs in the city of Boston. The FIC model supports funding for a part-time case manager at each health center. As primary care providers conduct annual check-ups or other visits, they identify overweight and obese children, provide counseling, assess their readiness to participate, and refer appropriate children and families to the case manager. The case manager uses a family-centered approach to identify nutrition and physical activity interventions that work for the family. These include individual and group nutrition education sessions, physical activity programs on site or in the community, YMCA scholarships, and educational activities such as cooking lessons. Quarterly meetings are held among the CHCs to discuss strategies and share lessons learned.

Evaluation

FIC enrolled 973 children in the past year with a 40–50% participation rate in all FIC activities. This reach is coupled with significant reductions in BMI at one year and changes in several health-related behaviors at three months. The health related behaviors include: reductions in soda/juice drink consumption (e.g., 2.02 drinks/day at beginning of FIC compared to 1.58 drinks/day at FIC completion), and an increase in physical activity (e.g., 3.09 days/week meeting physical activity criteria at beginning of FIC compared to 3.81 days/week at FIC completion). FIC participants were found to have decreased their mean BMI z-score from 1.96 prior to FIC entry to 1.89 after completing FIC at one year. A retrospective comparison analysis, comparing this to children who did not participate in FIC, revealed that differential responses in the 85th–95th BMI percentile group largely drove the significant change, with no differences between children with a BMI > 95th percentile over a one-year period of time. This finding suggests that this model may be most effective for children who are overweight but not obese. A trajectory analysis of BMI change for children who were enrolled from 2008–2011, going three years back and five years forward, is in the process of being completed and shows promising preliminary results. Deliberate engagement of stakeholders, especially community health center staff, was critical to ensuring adoption of the program. To support implementation, FIC has supported flexibility in program development. For example, 80% of participating health centers are developing on-site resources such as healthier eating and physical activity programming and increasing access to healthier foods through farmers markets and on-site gardens. A key maintenance strategy has been sharing results with community health center staff and funders, celebrating success and collaborative planning for the future.

LET'S GO!

Program

Established in 2006 in response to the obesity epidemic, *Let's Go!* is a childhood obesity prevention program of The Barbara Bush Children's Hospital at Maine Medical Center. *Let's Go!* uses evidence-based strategies to increase healthy eating and active living in the places where children and families live, learn, work, and play.[30] The program is rooted in the social ecological framework of behavior change—that people's behaviors are influenced by many factors including family, friends, local surroundings, built environment, and community. In order to bring about behavior change, the supporting environments and policies must be changed to make it easier for people in those environments to make healthy choices.[31]

Evaluation

The *Let's Go!* model has two major components: 1) deploying a consistent message,"5-2-1-0," across multiple community settings to remind families and children how to make healthy choices; and 2) working with a network of local partners to implement changes to environments and policies that increase opportunities for healthy eating and active living in the following settings: child care programs, schools, out-of-school programs, health care practices, and worksites. The mnemonic, 5-2-1-0, represents four evidence-based recommendations for healthy eating and physical activity each day: eat 5 or more servings of fruits and vegetables, limit recreational screen time to 2 hours or less, engage in 1 hour or more of physical activity, and drink 0 sugary beverages.

Let's Go! collaborates with nearly 1,000 schools, early care and education programs, out-of-school programs, health care practices, and school cafeterias, reaching more than 220,000 children and their families with its positive 5-2-1-0 message and evidence-based strategies for changing environments and impacting healthy choices. These multi-setting efforts are effective—statewide surveys show that healthy habits are increasing and obesity rates are holding steady for Maine students. From 2011 to 2015, there was a statistically significant decrease across all grades surveyed in the number of students drinking sugar-sweetened beverages daily. This effectiveness is a function of the program's comprehensive approach and the many partners who share in the passion, work, and success in creating healthy places and healthy people across the state. Adoption of the program was assisted with early and deliberate engagement of stakeholders at the local level across the state. Success in implementation has been documented by changing environments and policies to support and increase healthy behaviors and increase awareness of 5-2-1-0. Furthermore, sites are providing staff with alternatives to sweetened beverages and encouraging employees to be role models by eating healthy foods in front of children, and taking plenty of stretch breaks. *Let's Go!* provides toolkits to site champions that include handouts and resources to guide and support their work throughout the year. *Let's Go!* Coordinators deliver trainings to teach site champions why each strategy is important and provide suggestions for how to implement each strategy at their site. Following the successful implementation of the original 5-year *Let's Go!* demonstration project from 2006 to 2011, the program has spread and been maintained throughout the state with the help of many local and statewide partners and funders.

AREA OF REACH	CHILD CARE PROGRAMS	SCHOOLS	OUT-OF-SCHOOL PROGRAMS	HEALTH CARE PRACTICES	SCHOOL NUTRITION WORKGROUP CAFETERIAS
Counties*	12	12	13	20	11
Towns	108	121	71	96	113
Sites	230	207	123	173	249
Staff/Clinicians	1,344	11,009	728	888	45
Students/Patients	8,056	64,976	8,550	383,726	93,914

****Health care practices were located in 15 counties in Maine, 4 in New Hampshire, and 1 in Massachusetts.***

Reproduced from *Let's Go!* Evaluation Report July 1, 2014–June 30, 2015, Program Year 9, available at: **http://www.letsgo.org/wp-content/uploads/2014-2015-Lets-Go-Evaluation-Report_rev-Jan-16.pdf**

HEALTH CARE WITHOUT HARM

Program

Ten years ago, HCWH founded Healthy Food in Health Care—an initiative to promote healthier food options in hospitals—while leveraging food purchasing dollars to support the development of sustainable food systems. HCWH directly works with hospitals to help them align their sustainable food system efforts, with supporting healthier food choices in cafeterias and their clinical community programs.

HCWH uses an Environmental Nutrition framework,[32] which holds that healthy food must be defined not only by nutritional quality, but equally by a food system that is economically viable, environmentally sustainable, and supportive of human dignity and justice. Applying this framework, HCWH has noted an evolution of healthy food programming over the years. Specifically, the health care sector has:

- Increased food purchasing for both inpatient and cafeteria services to healthier and sustainably grown and produced foods.
- Expanded food operations beyond traditional dining services to provide healthier food access through on-site farmers markets, community supported agriculture (CSA) programs for employees, and on-site food gardens.
- Aligned with clinical and community programs to more explicitly link these programs with efforts in healthier food access and sustainable systems.

Evaluation

Realizing that intervention points in the food system are at the individual, community, and system level, HCWH conducted a survey in 2014 of nonprofit hospitals in Massachusetts.[18] This survey evaluated whether hospitals were incorporating food access and healthier food consumption into their CHNAs, the range of activities hospitals are engaged in and their implementation, and how these were being evaluated. Several prevalent models emerged including:

- Food insecurity screening: Many hospitals incorporate food security screening tools into emergency room and other clinical interactions and have resources to address the issue, such as on-site food pantries.
- Fruit and veggie prescription programs: These programs were very prevalent, but their structure and success varied widely. One successful program provides the fruit and veggie coupon on the same day that a mobile market is outside the clinic and achieved higher participation and redemption rates.
- Community-based food production: This practice was supported by many community benefit programs (e.g., community gardens). These programs also varied in the degree and consistency of their evaluation.

The study found that many hospitals used several of the following metrics: BMI, hospital readmission rates, pounds of food served or sold, and number of people served. Developing a common evaluation framework and common indicators for interventions could enable programs to aggregate their results and increase the significance of results across a community or population to gain a better understanding of what works and why. Hospitals and partners could also collaboratively establish baseline measures and assessments before implementing food environment changes.

HCWH has noted that some interventions, such as fruit and vegetable prescription programs, can measurably impact the food choices of participating individuals and families. However, the size and reach of these programs are limited. By comparison, community food gardens may have a wider reach into the community and provide space for cohosting interventions such as cooking classes, yet their effectiveness is more difficult to quantify due to the more flexible participation by community members. HCWH noted that successful partnerships are imperative to the acceptability and adoption of any effort to promote food access and healthier options. A coalition of anchor institutions—those that have long-term investment horizons, are big employers in the community, and have a large environment footprint (e.g., hospital systems)—can help implement significant systems change in a community. Additionally, building stakeholder engagement on a collective impact framework[33] and establishing a mentorship program between sites also promotes maintenance.

PANEL 3: KEY OBSERVATIONS AND INSIGHTS

- Actionable plans for organizations and individuals include easy, local, and realistic steps around each strategy or message.
- Working with partners and stakeholders is most effective when expectations and methods of measurement are simply and clearly defined and results are shared.
- Processes and outcome measures should be based on the steps for which interventions are developed. It is important to gather a common set of process measures and outcome metrics.
- Strong partnerships that work in a defined, collective way improve impact.
- A collaborative evaluation plan based on data that is collected early will provide evaluation data that are useful for all partners. An intervention that strives to improve food access or physical activity opportunities in the community (e.g., through policy change) must include metrics that stakeholders, including the health care organization, can use to determine impact and success.

PANEL 4: INFLUENCES ON DECISION MAKING WITHIN CLINICAL-COMMUNITY SYSTEMS

This panel explored the views of funders in terms of value propositions for both obesity-related and other community engagement and benefit funding. In this section, a brief description of the panelists' work is followed by their perspectives regarding key issues in community engagement (see Methods).

PANELISTS:

- **Greater Rochester Health Foundation**

  The Greater Rochester Health Foundation funds programs in the city of Rochester, NY, to increase the percentage of children at a healthy weight. Funding supports four strategies: Increasing physical activity and healthy eating at school, home, and in the community; Organizing advocacy efforts that focus on policy and systems change that support healthier lifestyles; Promoting communications campaigns; and Engaging the clinical community. The foundation currently supports nine schools in the city, reaching over 4,300 and their families each year.

- **MaineHealth**

  MaineHealth is a not-for-profit family of high-quality hospitals, providers and healthcare organizations. MaineHealth has seven population health priorities across the state of Maine, of which the investment in *Let's Go!* is a major component.

- **Healthy Living, YMCA of the USA**

  The YMCA has been working in different arenas to reduce childhood obesity. Recently, the YMCA has begun implementing a healthier lifestyle intervention for children with a BMI at or above the 95th percentile and their families. Currently, the Healthy Weight and Your Child intervention reaches 620 children and families in 14 states.

- **Lucile Packard Children's Hospital, Stanford University**

  Lucile Packard Children's Hospital Stanford supports three relevant interventions as a part of their community health improvement initiatives. These span activities from community health education to clinical weight management programs and community-level healthier living strategies. As a result, the hospital reaches a diverse population with varying initiatives throughout a given grant year.

KEY DECISION FACTORS TO INVEST RESOURCES IN CLINICAL-COMMUNITY ENGAGEMENT INITIATIVES

Program

The panelists agreed that investments in community engagement need to be consistent with the vision, mission, and strategic plan of the organization. Such alignment is critical to accessing resources and funding. For health systems, the success of the implementation plan that ensues depends on how well it is aligned with the priorities identified in the CHNA. Also, for health systems, community benefit funds are a potential resource for program funding, but the amount and availability of these funds differ from organization to organization and implementation of the CHNA requirements is still evolving.

It is also important to consider aligning metrics across other population health improvement efforts (e.g., with an Accountable Care Organization's (ACO) strategies.) For community organizations, leadership interest and the inherent capacity of the group are important to consider along with support from the local medical community that can help leverage resources. Finally, for private or local foundations, any community engagement effort must fit with the overall strategy of its board.

Intrinsic decision making processes

Health care systems are redefining how community benefit investments are operationalized. Whereas a large portion of community benefit efforts has involved charity care. An emerging strategy for identifying and allocating sustainable resources used for community benefit beyond charity care is to use fund balance transfers. Each year, hospitals and health systems allocate a portion of their investment portfolios to support community health programs, such as those promoting obesity prevention. Health care systems then go through a series of steps to identify appropriate outcomes and their corresponding metrics. As these organizations are increasingly being held accountable through ACO structures and requirements for maintenance of tax-exempt nonprofit status, they rely more and more on objective data. The degree to which these efforts are evaluated over time using these outcomes and metrics helps establish their success. As these efforts gain success and traction, the system can effectively determine how and when funds available for future initiatives will also grow.

Impact of health care reform initiatives

The requirements for maintenance of nonprofit status for tax-exempt hospitals include reporting on the impact of Community Health Improvement Plans, including their evaluation. There is currently a big gap for some health systems that do not have the capacity or expertise to conduct these evaluations. Therefore, there is a need for establishing and sharing evaluation frameworks. The use of electronic medical records that can track patients and report on specified care delivery quality measures has increased the potential for providers and health systems to evaluate delivery of care from a population health perspective. In other instances, many health care systems engage and provide support to local schools and early care and education centers by providing health screenings or site-based clinics. However, moving into an arena of supporting policies in the community that promotes healthier choices and defining the corresponding metrics for success remains difficult for many health care organizations. Any evaluation framework would have to provide guidance on identifying community level measures that support efforts such as increasing food access or active transportation. Finally, data connectivity is needed to define the impact of investment in these efforts, so that health care systems can continue to support them. For example, if a health system collaborates with a school wellness council, initiates a fresh salad bar in the cafeteria and organizes a SRTS program, the school or another partner might be able

to capture usage and behavior change data which can then be shared with the health system. This connectivity provides the health system with metrics showing the impact of its investment.

Lessons learned

It may be necessary to balance a portfolio of investments between activities that reach a large population with a broad strategy (e.g., healthier lifestyle messaging) and those that reach a smaller group of individuals but with a focused and intense strategy between wide and deep (e.g., a SRTS program in a specified district). Determining the need for these strategies requires an understanding of prevalence data of various conditions as well as relationships with the local community. Regardless of the strategy chosen, its scale and reach need to be understood in order to properly evaluate it. Maintaining these efforts needs nurturing relationships with leaders and champions in the health care system and in the community. In this regard, defining and setting population health priorities is critical. Identifying a strategic plan and a detailed logic model that outlines short and long term outcomes will help focus and educate stakeholders. For example, the strategic plan and logic model can help clarify the importance of gathering metrics so that the critical steps to long-term success are not overlooked.

PANEL 4: KEY OBSERVATIONS AND INSIGHTS

- Community engagement investments need to be consistent with the funding organization's mission and strategic plan. A well-thought-out evaluation plan can help in aligning investments with missions and plans.
- Community benefit funding is a potential resource and opportunity for partnership, and a common evaluation framework would be a useful tool in this evolving landscape.
- Evaluation frameworks that identify short and long term outcomes and identify metrics and outcomes are needed.
- Detailed logic models can help identify how to develop strategies that can promote policy change to support population health.
- Organizations may need to balance community investment portfolios between population health strategies that are broad-based but less intensive efforts that reach large groups with more intense efforts directed at smaller populations.

LESSONS LEARNED AND RECOMMENDATIONS FOR EVALUATION

Several common themes emerged during discussions throughout the workshop that should be considered when evaluating community engagement programs and efforts relating to childhood obesity. When considering reach and effectiveness, a balance is struck between developing efforts that have the potential to involve a large proportion of a population (e.g., Safe Routes to School programs) with interventions that have greater potential to make a significant impact on obesity-related behaviors and weight change, but can only engage a fewer number of children and families (e.g., high-intensity behavioral change programs). This balance establishes the dose of a particular intervention. The adoption of an intervention may depend to a large degree on how feasible it is or the degree to which stakeholders have bought into it. In this regard, assessing an intervention's implementation and fidelity becomes critical to understanding whether it was successful and, if so, components that may have contributed to that success. Developing strong and diverse partnerships across sectors was noted to be critical to ensuring the maintenance of the intervention fidelity over time.

Several outcomes were also discussed as potentially helpful to include in evaluations. In addition to BMI, it is also important to include other clinical metrics of risk that may show improvements in shorter timeframes than BMI, such as glycosylated hemoglobin or liver enzymes. Similarly, population level measures that could be tracked include BMI, type 2 diabetes, and complications from other comorbidities, such as asthma. Metrics on the degree to which policy and environmental changes at the community level are developed and implemented should also be considered and included. For example, a policy may be developed and set to increase access to fruits and vegetables in school cafeterias, but without specific implementation consumption of fruits and vegetables by children will not increase. Furthermore, stratifying data and outcomes and tailoring interventions to different population segments is critical since, for example, a child or adolescent with severe obesity will require a different intervention than a child with a BMI at the 85th percentile. All of these approaches and considerations will ensure that important changes, such as positive health outcomes in a group, are not overlooked while ensuring that areas that need strengthening can be targeted. This will help to make evaluation data more useful to program managers, stakeholders, and funders.

It was noted that the metrics chosen to evaluate a program can vary depending on the needs and goals of stakeholders. For example, a large community-based organization might be interested in outcomes for both adults and children, compared to employer groups who might focus more on adults. It is important, therefore, to understand the array of interests and priorities and to find ways to make compelling arguments for all groups. Alternatively, an employer might decide to invest in childhood obesity if a business case is presented showing that family-based group therapy can positively impact parents, and therefore, employee health. Furthermore, if the only metrics chosen are health outcome-related, then an undue burden of funding might fall on the health care sector. In this regard, choosing a variety of outcomes, such as school performance and employee productivity, can help develop new funding sources.

These considerations propelled the discussion on Day 2 of the workshop into developing an evaluation framework[34] logic model (Table 1). This figure serves as an outline of what a logic model might look like for a health care–community engagement effort addressing childhood obesity. Embedded within the logic model are both process-level metrics which can be directly tracked (e.g., referral processes to track improved linkage) and constructs (e.g., provider self-efficacy or individual behavior self-management goals) for which data can be easily gathered or simple questionnaires designed. The logic model can be modified based on the specific goals of any intervention.

Evaluation of Health Care-Community Engagement Efforts to Address Obesity: A Sample Logic Model

INPUTS

HEALTH CARE

- Pediatric primary care centers, providers, and staff
- Pediatric weight management programs in communities or clinics
- EHR & Health IT systems
- Leadership and community benefit offices

COMMUNITIES/ ORGANIZATIONS

- Weight management programs and other resources
- Faith-based groups
- Food policy councils
- Safe Routes to School
- Nonprofit organizations

STATE AND OTHER PARTNERS

- Medicaid and Medicare offices
- Education offices, including early care and education
- Parks and Recreation
- Women, Infants, and Children Program
- Supplemental Nutrition Assistance Program

STRATEGIES & ACTIVITIES

IMPLEMENT ACTIVITIES OR INTERVENTIONS

Settings:

- Schools
- Early care and education
- Community-based organizations
- Health care

Target populations:

- Child/adolescent & family
- Parent/caregiver
- Communities
- Provider
- Mobilize, advocate & engage across sectors
- Develop & advance partnerships

POLICY

- Identify & promote adoption of key policies that support or complement activities and interventions
- Collaborate w/stakeholders & change agents to implement policies

SHORT-TERM OUTCOMES

1–3 YEARS

INDIVIDUAL/FAMILY

- ↓ Access to unhealthy options
- ↑ Access to healthy options
- ↑ Access to care
- ↑ Participation in prevention programs
- ↑ Improved linkage with health care system/providers
- ↑ Engagement & communication across sectors
- ↑ Awareness & understanding of healthy behaviors
- ↑ Opportunities for shared meals and physical activity

PROVIDER/HEALTH CARE SYSTEM

- ↑ Provider knowledge & skills
- ↑ Provision & availability of prevention programs

COMMUNITY/BUILT ENVIRONMENT

- ↑ Community awareness & knowledge
- ↑ Self-efficacy among community members
- ↑ Provision & availability of prevention programs
- ↑ Collaboration between community and health care settings

POLICY

- ↑ Knowledge of policies supporting healthier choices among change agents
- ↑ Adoption of policies

INTERMEDIATE OUTCOMES

3–5 YEARS

INDIVIDUAL/FAMILY

- ↑ Physical activity
- ↑ Families making healthier routine choices
- ↑ Healthy eating — fruit/veggie consumption
- ↑ Improved overall diet
- ↑ Improved family cohesion
- ↑ Self-management of healthier choices and related comorbidities

PROVIDER/HEALTH CARE SYSTEM

- ↑ Child/adolescent & family engagement
- ↑ Delivery of quality care

COMMUNITY/BUILT ENVIRONMENT

- ↑ Policy and environmental supports

LONG-TERM OUTCOMES

5+ YEARS

- ↑ Improved biometric & health measures (e.g., behavior change, diabetes, and asthma comorbidities)
- ↑ Parental/care-giver wellness & work productivity
- ↑ Quality of life
- ↓ Obesity prevalence
- ↓ Health care costs (direct obesity, comorbidity costs; emergency room visits)
- ↓ Individual body mass index (BMI)
- ↓ Morbidity & mortality

CONTEXTUAL FACTORS

Integration and collaboration across sectors (i.e., degree to which different community groups have worked together and with health care organizations and the degree to which state partners have collaborated)

Primary care and weight management program environments (i.e., affiliations, organizational structures, payment structures, community investment–oriented leadership, and missions)

Community resources (e.g., availability of social services, linkages between health care and public health programs)

This logic model presents activities and outcomes of community engagement interventions designed to address childhood obesity. This can be modified based on the specific goals of an intervention

Logic model metrics

To accompany the logic model, a sample set of metrics, shared in the table below, captures both processes and potential outcomes relevant to the individual/family and examines increased access to healthier choices, including aspects of the community or built environment and supportive policies at either the institutional or community level. Since stakeholders' and funders' needs can be diverse, consideration should be made to allow for the inclusion of additional metrics that would be of interest upon discussion with these groups. As with many complex societal problems, metrics for assessing social determinants of health are important to include and should be tailored to community specific issues.

LOGIC MODEL: METRICS

INDIVIDUAL & FAMILY	COMMUNITY & BUILT ENVIRONMENT	POLICY
Body mass index (BMI) (prevalence change in age and gender specific percentile for children)	Number of early care and education best practices met for healthier food	Number of school wellness policies supporting criteria-driven healthy cafeteria or vending offerings
% Weight loss (for adults)	Number of fruit & vegetable vouchers, coupons, or other benefits redeemed per pre-specified denominator	Development of policies supporting complete streets design
Behavior change (fruit & vegetable consumption, physical activity, sugary beverage consumption, sedentary time, healthy sleep)	Increased engagement and enrollment of families needing assistance with food voucher programs	Development of policies supporting safe public transport, increased connectivity and commuting options
Comorbidities (e.g., incidence, prevalence of diabetes or asthma; measures of control (glycosylated hemoglobin); utilization (emergency room visits)	Number of Safe Routes to School programs per pre-specified denominator	
Quality of life	Staff, project capacity, and service utilization surveys	
Attendance, satisfaction, and utilization surveys	Community coalition surveys	

This table lists a sample set of metrics relevant to childhood obesity that capture both processes measures and potential outcomes relevant to the child, family, community, built environment and systems. These can be tailored to intervention and community specific needs.

DISCUSSION

Gaps to be addressed

Several gaps were identified that researchers, clinicians, and community programs are working to address. The work in community and clinical engagement to address obesity is in the early phase of development and many panelists noted that it would be beneficial to provide a technical assistance forum for evaluation efforts to enhance rapid learning. Such an effort might include a set of common metrics that could be used to assess effectiveness of clinical and community interventions.

Evaluation

Although experts agree that multilevel community health interventions are needed to have an impact on obesity prevention and treatment, a major issue with complex interventions is evaluating what type and what dose of an intervention is necessary to make a positive impact. "Population dose" in public health programs is an issue that is currently being studied with an effort to provide guidance on optimal design and outcomes measurement for complex, multilevel obesity interventions.[35] This important work could be accomplished through partnerships and common metrics to assess these efforts. Technical assistance to conduct proper evaluation is also critical and evaluation methods should capture the complexity of the outcomes that the community is interested in targeting. Finally, a few attempts have been made to describe metrics for inclusion in community engagement efforts that include broad strategies or for those focusing on improving the food system.[16,36] Combining these metrics with the metrics, logic model, and insights provided by this workshop may help achieve a more complete framework for evaluating community and health care engagement.

Staffing

Any community engagement effort requires dedicated staffing to provide programmatic and evaluation support. For example, a program that seeks to improve the way in which the food system provides healthier foods in a community setting and also supports sustainable food practices needs evaluation support to ensure effectiveness. Training competencies also need to be considered, such as for those engagement efforts that implement a weight management program in the community setting.

Funding

There are several challenges in both sustainable funding for programs as well as for program evaluation. There is a need to establish mechanisms to share risks and savings. A partner may carry much of the risk invested in an effort, but if the benefits are realized in other sectors, and the sustainability of the program could be jeopardized. Funding from multiple entities and sectors is needed to provide adequate resources for program implementation and evaluation. Currently, community systems lack a mechanism for funding certainty and continuity. Short-term funding from foundations, while very helpful, will not necessarily lead to sustainable and scalable long-term program implementation. Valid and reliable metrics for program evaluation—preferably built into program design from its inception and with community input where appropriate—can provide needed data to inform funders and policy makers about the value of ongoing support for programs with proven efficacy.

Next steps

It is anticipated that by systematically evaluating health care-community engagement efforts, the knowledge base of best practices to improve healthy choices and lifestyles by individuals, families, and communities real improvements can be made towards population health. Moving forward, the Engaging Health Care Providers and Systems workgroup of NCCOR intends to engage in several activities to support the health care sector (including, clinics, hospitals, and systems), communities, and other organizations in evaluating health care-community engagement efforts. Early efforts to support continued improvement in this field will include a **webinar series** that will host panelists from the workshop. Future efforts could support evaluation networks as well as repeated assessments of how community benefits are deployed.[12]

ABBREVIATIONS

AAP	American Academy of Pediatrics
ACO	Accountable Care Organization
AHRQ	Agency for Healthcare Research and Quality
BMI	Body Mass Index
CATCH	Coordinated Approach to Child Health
CDC	Centers for Disease Control and Prevention
CHC	Community Health Center
CHI	Community Health Initiative
CHIP	Community Health Improvement Plan
CHNA	Community Health Needs Assessment
CORD	Childhood Obesity Research Demonstration Project
HER	Electronic Health Records
FAN	Fitness and Nutrition
FIC	Fitness in the City
FNPA	Family Nutrition and Physical Activity Assessment
FQHC	Federally Qualified Health Center
HCWH	Health Care Without Harm
MEND	Mind, Exercise, Nutrition, Do It!
NCCOR	National Collaborative on Childhood Obesity Research
NIH	National Institutes of Health
NYSHF	New York State Health Foundation
PACER	Progressive Aerobic Cardiovascular Endurance Run
PCMN	Patient-Centered Medical Neighborhood
PSE	Policy, Systems, and Environment
RCFS	Right Choice Fresh Start
RCT	Randomized Controlled Trial
RE-AIM	Reach Effectiveness Adoption Implementation Maintenance
RWJF	Robert Wood Johnson Foundation
SRTS	Safe Routes to School
USDA	U.S. Department of Agriculture

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