

# Creating a collective impact on childhood obesity: Lessons from the SCOPE initiative

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## ABSTRACT

**OBJECTIVES:** We describe the processes used in SCOPE, a community-based participatory research (CBPR) initiative, to achieve multisectoral engagement and collective action to prevent childhood obesity.

**PARTICIPANTS:** SCOPE engages representatives from various sectors (local government, health, schools, recreation, local media, early childhood, community services) who influence the environments in which children live, learn and play.

**SETTING:** SCOPE has been implemented in three communities in British Columbia (BC).

**INTERVENTION:** SCOPE ([www.live5210.ca](http://www.live5210.ca)) is a multi-setting, multi-component initiative designed to enhance a community's capacity to create and deliver localized solutions to promote healthy weights among children. SCOPE, in partnership with a local organization, engages multiple stakeholders who plan and implement actions framed by a common evidence-based health message ('Live 5-2-1-0'). SCOPE's central team in Vancouver, BC facilitates alignment with provincial initiatives, knowledge translation and exchange (KTE) within and across communities, and the collection, analysis and reporting of shared data.

**OUTCOMES:** Best practice processes that have emerged from SCOPE's experience align with the principles of CBPR and the five conditions of Collective Impact – a common agenda, mutually reinforcing action, continuous communication, a backbone organization and shared measurement. SCOPE has achieved sustainable practice change framed by a common agenda ('Live 5-2-1-0') leading to mutually reinforcing cross-sectoral action.

**CONCLUSION:** A multi-pronged community-led childhood obesity prevention initiative can be achieved using CBPR principles and attending to the conditions for achieving collective impact.

**KEY WORDS:** Pediatric obesity; prevention & control; health promotion; community-based participatory research

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Rising rates of obesity are driving the increasing burden of diseases such as type 2 diabetes, cardiovascular disease<sup>1</sup> and cancer.<sup>2</sup> Obesity and overweight during childhood are especially concerning given the longer duration of exposure to unhealthy lifestyles, and because many obese children become obese adults.<sup>3</sup> Childhood obesity is a complex large-scale social problem caused by a multitude of interdependent factors.<sup>4</sup> Children and families do not live and function in isolation but rather in the context of their family environments, neighbourhoods and communities. Addressing childhood obesity requires collective action across multiple stakeholder groups,<sup>5</sup> where emergent solutions allow for continual adaptation in an ever-changing environment.

Community-based participatory research (CBPR) is a collaborative, co-learning and community-partnered approach to addressing complex social problems.<sup>6</sup> In the literature, best practice principles for community-based obesity prevention advise on community engagement, program design and planning, evaluation, implementation and sustainability, and governance.<sup>7</sup> Evidence supports the use of CBPR in solving childhood obesity: EPODE (Ensemble Prévenons l'Obésité Des Enfants),<sup>8</sup> Shape Up Somerville (SUS),<sup>9,10</sup> and Be Active Eat Well<sup>11,12</sup> have all demonstrated significant and sustainable decreases in childhood

obesity prevalence in quasi-experimental trials.<sup>13</sup> In Canada, we have a rich tradition of applying CBPR to chronic disease prevention and health promotion.<sup>14-19</sup> This experience has found that such collaborative, capacity-building initiatives are very challenging to evaluate because of their dynamic and evolving nature over time across sectors and levels.<sup>20</sup>

SCOPE (Sustainable Childhood Obesity Prevention through Community Engagement) is a CBPR childhood obesity

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prevention initiative currently being implemented in British Columbia (BC). SCOPE builds on existing successful CBPR childhood obesity initiatives<sup>8-12</sup> and explores the translation of this CBPR approach into the Canadian context. In this paper, we describe the SCOPE experience using process evaluation data, framing the discussion within the Collective Impact (CI) model.<sup>21</sup>

CI is a 'long-term commitment of a group of important actors from different sectors to a common agenda for solving a specific social problem.'<sup>21</sup> CI embraces CBPR principles and is governed by five key conditions:

1. A *common agenda* where participating organizations have a shared vision for change which includes a mutual understanding of the problem and a collective approach to solving it.
2. *Mutually reinforcing activities* across a diverse group of organizations representing multiple sectors where participants implement various, often separate, actions that are coordinated and supported through a reinforced plan of action.
3. *Continuous communication* among stakeholder groups to build trust and provide opportunities for the exchange of knowledge and expertise, and collective problem solving.
4. A *backbone support organization* with staff who handle the administrative and logistical details associated with coordinating multiple organizations using adaptive leadership, facilitation, technology and communications support.
5. A *shared measurement system* where there is agreement on how success of the initiative will be measured and reported.

### Participants and setting

SCOPE partners with local stakeholders from multiple sectors to influence environments in which children live, learn and play so that the healthy choice is the easy choice for children and families. The SCOPE team approaches, or is approached by, local government or a local organization to secure their interest in participating in an evidence-based CBPR approach to childhood obesity prevention. Once endorsed, a SCOPE coordinator is hired and this person is responsible for leading community engagement activities while liaising with a central SCOPE team located at British Columbia Children's Hospital (BCCH) in Vancouver, BC. Local stakeholders are recruited through an intensive community engagement phase where a snowball recruitment methodology is used by continually asking 'who else needs to be at this table?' at stakeholder meetings. To ensure that all perspectives are integrated into project planning, local coordinators approach key stakeholders who are less likely to attend formal meetings, such as new immigrants or individuals from vulnerable populations (i.e., low socio-economic status or Aboriginal/First Nations).

### Intervention

SCOPE ([www.live5210.ca](http://www.live5210.ca)) is a multi-setting, multi-component program designed to enhance community capacity to create and deliver solutions to promote healthy eating, physical activity, and healthy weights among school-aged children. Informed by social ecological theory<sup>22,23</sup> SCOPE is rooted in the principles of CBPR.<sup>24</sup> SCOPE leads and coordinates the Live 5-2-1-0 initiative

by providing the knowledge, resources and tools that communities need to share (i.e., through marketing) and support (i.e., through environmental and policy change) an evidence-based, simple health message: at least 5 vegetables and fruits, <2 hours of screen time, 1 hour of active play, and zero sugar-sweetened beverages, per day. Two implementation phases since its launch in 2009 are described:

*Phase 1 (2009–2012):* Piloted in two BC communities (A & B), SCOPE accomplished three major activities: community engagement across multiple sectors; community asset mapping; and local prioritization and action planning. Partnership was initiated through mayor and council and engaged a broad range of stakeholder groups (i.e., the city; parks, recreation and culture; the school district; community services; local media; health professionals). A part-time (20 hours/week) local coordinator, co-funded by both the city and SCOPE, led this process while receiving support from SCOPE's central office related to, among others, best practice principles, evaluation and resources. Stakeholders worked with SCOPE to conduct an environmental assessment to better understand the community's strengths, gaps and priorities. Through this process, multisectoral partnerships emerged and rather than following a prescribed protocol, these stakeholders created a 'community-specific' childhood obesity prevention action plan.

*Phase 2 (2012–2014):* SCOPE continued its partnership with community A, and created a new partnership with community C. The partnership with community B ended, however, after a new mayor and council was instituted and opted out of further involvement. Here, SCOPE continued to invest in community engagement and partnership development while beginning to implement and evaluate 'sector-specific' initiatives emerging from community action plans (see Table 2). A broad range of stakeholders were involved in designing, implementing and evaluating these locally relevant initiatives. SCOPE also developed a model for knowledge sharing to facilitate project expansion and maximize sustainability.

### Evaluation framework

Drawing on existing frameworks,<sup>25,26</sup> the process evaluation plan of SCOPE addressed four guiding questions (Table 1). From the outset, we focused on describing the engagement and implementation processes. In this paper, we describe the evidence and project records to meet the objectives of this analysis, framing the processes within the CI framework. Using a shared data entry platform ('partnership tracking tool'), local community coordinators and SCOPE central office tracked:

- existing or newly developed partnerships, sectors, actions implemented, and partnership status. This involved tracking every meeting and opportunity to engage

**Table 1.** Key questions guiding SCOPE's process evaluation

1. To what extent were community stakeholders engaged and how did partnerships evolve over time?
2. What was the process of prioritizing action and how were initiatives aligned across community sectors?
3. What were the key contextual factors that influenced implementation of SCOPE and how did they vary across pilot communities?
4. How was SCOPE's CBPR approach received by the community, what worked well, and what processes required adaptation or refinement?

**Table 2.** Examples of mutually reinforcing Live 5-2-1-0 action locally and provincially

| Live 5-2-1-0 'action' (local, provincial, regional)   | Partner(s) Sector(s) involved   | Type of action Description  |
|---|---|---|
| Live 5-2-1-0 Family Practice (FP) Toolkit (Local – Community C)   | Division of Family Practice<br>Health   | <i>Capacity Building, Resource Development</i><br>The toolkit provides family physicians (FP) with the necessary skills (i.e., motivational interviewing), Live 5-2-1-0 resources, and knowledge to measure BMI and provide assessment for and promote healthy living behaviours at all pediatric patient visits.               |
| Live 5-2-1-0 at the Recreation Centre (Local – Community A)   | The City – Parks & Recreation<br>Recreation   | <i>Policy</i><br>Facilitators of all recreation programs for children aged 2-12 must integrate the Live 5-2-1-0 message and supporting activities into all lesson plans for program sessions.   |
| Elementary school day planners (Local – Community A)  | The School District Schools   | <i>Increasing Knowledge and Awareness of Live 5-2-1-0</i><br>The Live 5-2-1-0 message was highlighted in elementary school student planners and school newsletters.   |
| Live 5-2-1-0 Newspaper Ads (Local – Community A)  | Local Newspaper Media   | <i>Increasing Knowledge and Awareness of Live 5-2-1-0</i><br>Live 5-2-1-0 advertisements and tips were featured in the Leisure Guide and the newspaper's Healthy Living section that went out to >35,000 residents of the community.  |
| Live 5-2-1-0 Play Boxes (Local – Community A)   | City – Parks & Recreation, School District, Health Authority<br>Local Government, Recreation, Schools | <i>Environmental Change</i><br>Parks & Recreation supported the installation of Live 5-2-1-0 Play Boxes in 3 city parks that are filled with equipment that families need to play actively with their kids. Access is free by obtaining a code from the city's website.   |
| Live 5-2-1-0 Radio Spots (Local – Community C)  | Local Radio Station Media   | <i>Increasing Knowledge and Awareness</i><br>Local radio station has donated two spots daily to promote the Live 5-2-1-0 message with an accompanying health tip.   |
| Sharing and supporting Live 5-2-1-0 in Child & Youth Committee (represents a variety of governmental and non-governmental community groups) (Local – Community C) | Child & Youth Committee<br>NGOs; Community Services   | <i>Policy</i><br>Motion passed for all 30 organizations to share and support the Live 5-2-1-0 message. Member agencies integrate Live 5-2-1-0 into existing programming where appropriate with the end goal of enhancing the well-being of children, youth and their families.  |
| Integrating Live 5-2-1-0 into Physical Literacy Training (Provincial)   | Via Sport, Community C<br>Recreation, Local Government  | <i>Capacity Building</i><br>Educational videos are being produced for recreation facilitators and other physical activity educators which will provide training and ideas on how to integrate the Live 5-2-1-0 message with physical literacy skill-building activities.  |
| Integrating Live 5-2-1-0 into Treatment Programs (Provincial)   | BC Childhood Healthy Weights Intervention Initiative<br>Health, Recreation, Government                | <i>Increasing Knowledge and Awareness of Live 5-2-1-0, Cross-promotion of Programs</i><br>Live 5-2-1-0 messaging is being integrated into obesity treatment programs (MEND and Shapedown BC) that have been disseminated across BC.   |
| Be Active Every Day using Live 5-2-1-0 (Provincial)   | Doctors of BC Schools   | <i>Increasing Knowledge and Awareness, Capacity Building</i><br>This annual, month-long Doctors of BC initiative involves FPs visiting schools to challenge kids to be active for one hour each day. Live 5-2-1-0 messaging has been integrated into the challenge, with emphasis on the "1" (1 hour of physical activity/day). |
| Fraser Health – Addressing the early years age group through childcare licensing (Regional)   | Fraser Health<br>Health   | <i>Increasing Knowledge and Awareness, Capacity Building</i><br>The partnership with Fraser Health has developed a process and informational resources for contextualizing the 5-2-1-0 recommendations for the 0-4 year age group and integrating Live 5-2-1-0 into early childhood programs (i.e., pre-school, day care).      |

potential stakeholders categorizing meetings as *exploratory* (listening and learning), *opportunity-generating* (identifying opportunities for partnership), or *purposeful* (defining specific objectives and planning action);

- dissemination of marketing materials (i.e., posters, pamphlets) throughout the community, including frequency of media coverage;

- resulting actions that focused on capacity building and/or policy, programmatic or environmental change aimed at supporting children and families;
- web analytics archiving online traffic to the 'Live 5-2-1-0' Resource Map. Individuals who downloaded resources provided information about their community, their sector, and how the resources would be used.

In addition, interviews with local coordinators and community stakeholders were conducted; these data, procedures, analysis and results are described in detail elsewhere.<sup>27</sup>

Data were managed using a web-based electronic data capture system, exported into Excel (Version 2011) and results were reported using descriptive statistics. An editing analysis approach<sup>28</sup> was used to interpret qualitative data sourced from the partnership tracking tool that classified process evaluation information into broad descriptive categories. Subsequently, axial coding strategies<sup>29</sup> produced themes that conceptualized data related to community context, barriers and facilitators to implementation, and problems and related solutions.

**RESULTS**

SCOPE's experience and lessons learned are described using CI as a framework.

**Lessons learned**

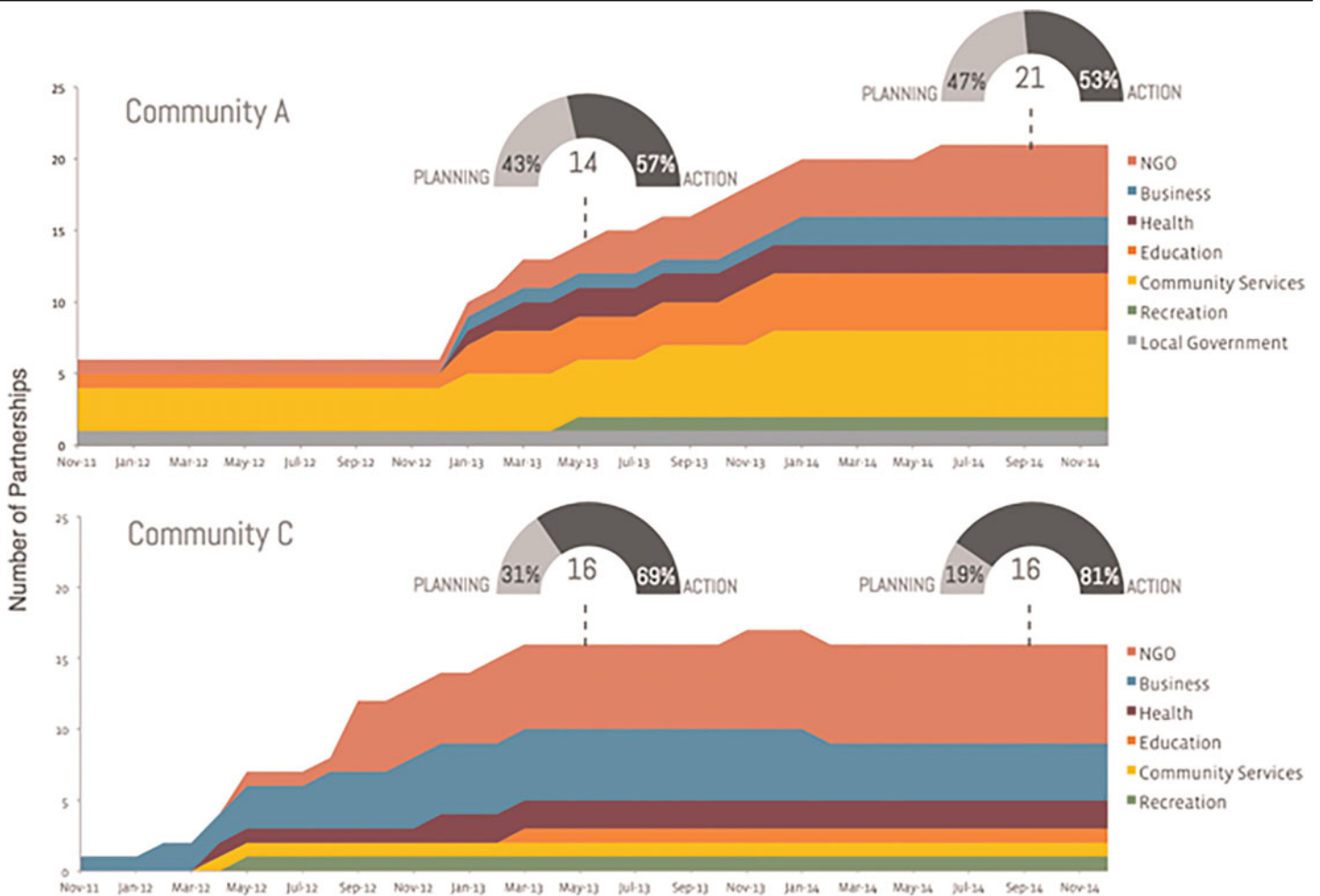
*Diverse Partners Supporting a Common Agenda*

Early on, communities A and B identified the need for a common, simple, solution-oriented health message that could be used across multiple sectors. Collaboratively, SCOPE adapted and adopted the '5-2-1-0' message<sup>30</sup> to create 'Live 5-2-1-0'. This common health message has since guided community action with the goal of

'sharing' 'Live 5-2-1-0' to enhance knowledge and awareness of healthy behaviours and 'supporting' 'Live 5-2-1-0' through capacity building and environmental, policy/programmatic change.

By 2011, the local SCOPE coordinators had participated in 205 community engagement meetings, most of which were face-to-face (96%). A wide range of stakeholders participated, representing education (23%), non-governmental organizations (35%), private businesses (9%), media (3%), health (19%) and community-based organizations (11%). In 2009, the majority of meetings were exploratory or opportunistic, however, two years later, over 80% were purposeful. Overall, almost half (44%) of community engagement meetings resulted in at least one identified action item and 35% indicated a plan to follow up. Together, these stakeholders developed a community action plan that integrated a broad range of perspectives under the shared mission of tackling childhood obesity.

In the second phase, community A sustained its efforts and SCOPE partnered with a new community (C) through their Division of Family Practice (DoFP). After identifying childhood obesity prevention as a priority, and familiar with the 'Live 5-2-1-0' activities in community A, community C approached SCOPE to incorporate the same messages in their child-focused health promotion initiatives. By 2014, SCOPE had 43 active partnerships



**Figure 1.** Evolution of multisectoral partnerships in communities A and C

in communities A and C continuing to reflect multiple sectors, with the majority of partners progressing from the stage of initiating partnerships and planning action to actively implementing local initiatives (Figure 1). Although SCOPE's formal partnership in community B ended, SCOPE continued collaborating with key stakeholders to support ongoing action implementation (i.e., a school district-wide program that provided leadership and mentorship training to elementary and high school students to increase opportunities for active play).

A key lesson we have observed is the notable power of champions as they maintain the momentum necessary to keep stakeholders engaged and to move action *planning* to action *implementation*.<sup>27</sup> Locally, these champions include SCOPE coordinators and leaders of local or regional organizations (i.e., the mayor, a local health authority, family physician). Provincial champions (i.e., members of SCOPE's Executive and Advisory Teams) have been instrumental in conveying the SCOPE story, and advocating for the use of 'Live 5-2-1-0' across BC. This is in keeping with the heart health promotion literature where local leadership and infrastructure were seen as essential components of capacity to act.<sup>31</sup>

#### *'Live 5-2-1-0': A Framework for Mutually Reinforcing Activities*

As action planning evolved into action implementation, communities' collective support of 'Live 5-2-1-0' led to diverse, yet mutually reinforcing activities across multiple sectors. The use of this common, consistent message reinforced brand recognition and visibly illustrated how local partners work together. The daily health recommendations inherent in the 'Live 5-2-1-0' message also provided a common platform to guide practice, policy and environmental changes. As summarized in Table 2, SCOPE stakeholders and decision-makers implemented actions to improve the nutrition choices and physical activity opportunities available to children.

With the foundation of engaged community leaders and the widespread adoption of 'Live 5-2-1-0', mutually reinforcing activities were implemented that focused on sharing and/or supporting 'Live 5-2-1-0'. Further, we have witnessed sustainable practice change such as enhanced health promotion with pediatric patients in primary care clinics in community C, where almost 20% of residents are under the age of 20 years (2011 Census); integration of 'Live 5-2-1-0' into recreation and early childhood development programs at community A's recreation centre that serves over 13,000 households with at least one child (2011 Census); and a commitment from local media such as newspapers in community A and radio stations in community C to provide in-kind advertising reaching 133,350 and 92,315 residents (2011 Census) respectively. Process evaluation data have tracked 'Live 5-2-1-0' in over 150 actions by community partners, disseminated in over 5,000 brochures, pamphlets and posters and included in over 1,500 community presentations, communiqués, newsletters and articles.

#### *KTE: Keeping in Touch Efficiently*

The need for knowledge translation and exchange (KTE) became apparent from the outset. SCOPE's central team connected with its communities through ad hoc telephone/e-mail contact, monthly video conference meetings with local coordinators, as

well as visits to communities for stakeholder meetings and community events. These varied interactions between SCOPE's central team and community coordinators and stakeholders allowed for continuous knowledge exchange. Communities shared their unique context, needs, priorities and strengths, and SCOPE central office facilitated access to best practices, linkages to provincial initiatives, ideas for action, and solutions to barriers and challenges. This KTE served to enhance trust and minimize duplication, and provided a platform for continuous learning and adaptation of processes and methods.

This approach has also supported sharing the existing work across the province. The SCOPE central team connects local coordinators and stakeholders with other communities interested in similar initiatives, enabling the sharing of ideas and 'cross-implementation' of experiences. SCOPE facilitates this community-to-community KTE through workshops, quarterly webinars, and an online 'Live 5-2-1-0 Community Resource Map' ([www.live5210.ca/resources](http://www.live5210.ca/resources)). Resources are freely available for download and can be tailored with local logos and information or adapted to meet a community's distinctive needs. Examples include community action plans, marketing resources, best-practice toolkits, and community engagement tools. Since the launch in April 2014, traffic to the website averages 526 visitors/month, exceeding 16,000 page views. More than 170 unique users from 49 different BC communities have downloaded more than 1,000 resources. SCOPE's experience with KTE has led to the development of a formal linking system and KTE model that is currently under evaluation (Figure 2).

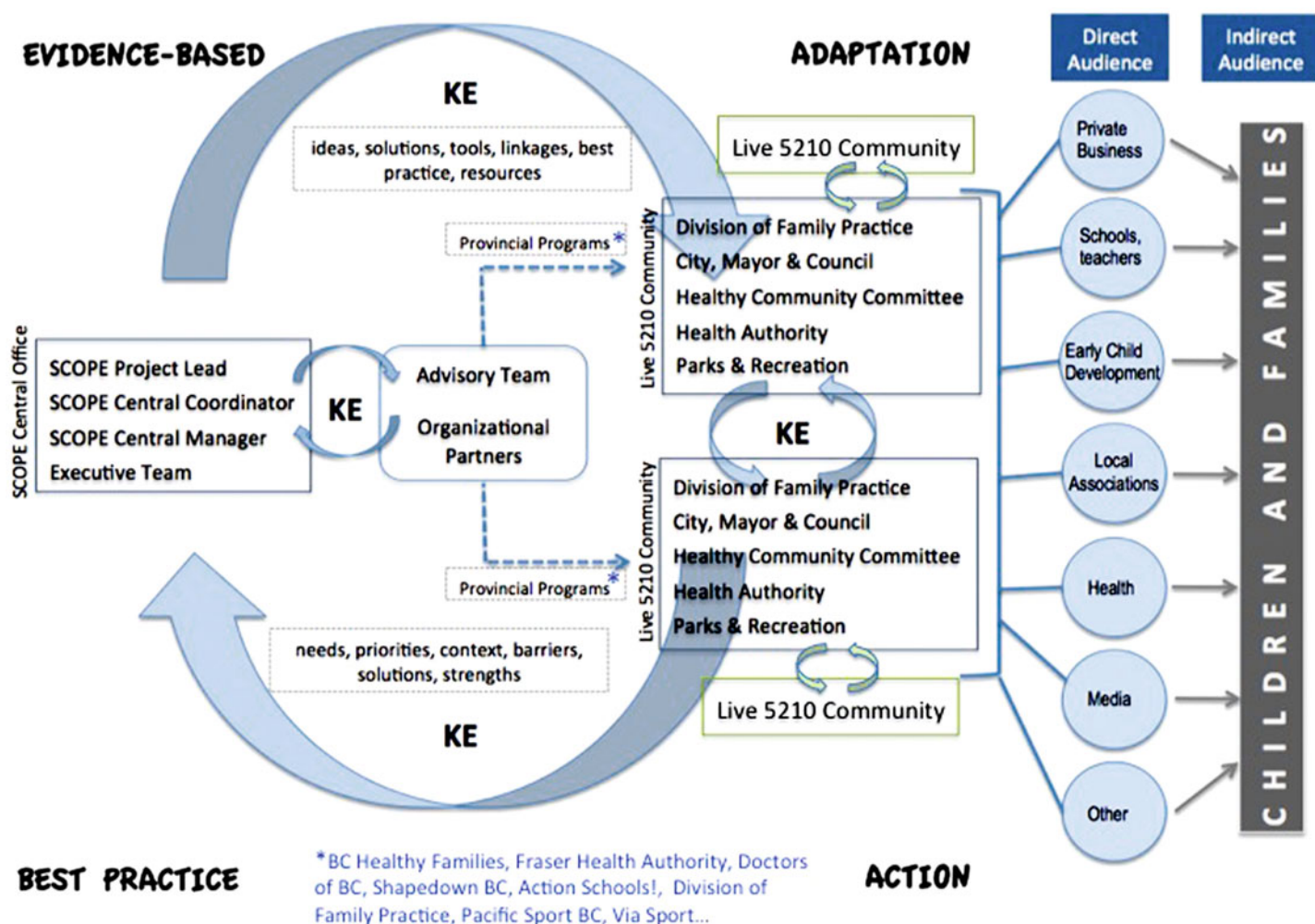
#### *SCOPE: The Backbone of 'Live 5-2-1-0'*

At the provincial level, the SCOPE central team is the backbone for sharing and supporting the 'Live 5-2-1-0' message and dissemination across BC. SCOPE's organizational structure, technical support and partnership approach also supports communities as they seek to transform diverse efforts into a focused community-wide collaborative effort with this common framework at the foundation. Specifically, the central team consists of the principal investigator and two full-time staff who provide coordination, facilitation and training, resource development and/or adaptation, local and provincial stakeholder engagement, communications and also handle logistical and administrative details. The central office works to align community- and provincial-level activities, mobilize funding, and design, conduct and report evaluation results. SCOPE's central team is advised by an executive of researchers and provincial- and community-level stakeholders who collectively guide the vision and strategy of the initiative.

At the local level, established community-level SCOPE partner organizations (i.e., the local government in community A, DoFP in community C) represent a 'second layer' of backbone. Local staff coordinate and lead their community initiative, with support from SCOPE central; initiating and supporting community engagement, planning and, depending on their level of readiness, action.

#### *SCOPE: Facilitates a Shared Measurement System*

Because of SCOPE's common agenda, indicators of success can be measured consistently within and across communities. In its first



**Figure 2.** Knowledge transfer and exchange model and linking system

two implementation phases, SCOPE measured the effectiveness of community engagement based on stakeholder perspectives<sup>27</sup> and the development and number of cross-sectoral partnerships involved in action planning and implementation. Moving forward, SCOPE will continue to provide the capacity necessary for consistent data collection to standardize measures and reporting. We are coordinating the evaluation of the KTE model across 'Live 5-2-1-0' communities by providing common evaluation tools (i.e., surveys, qualitative interview scripts, access to data entry into the partnership tracking tool, environmental checklists).

## DISCUSSION

Our experience through the formative phases has led to an emerging understanding of a 'best process' interpreted through the CI model. Live 5-2-1-0 is the *common agenda* that when supported and shared across multiple sectors results in *mutually reinforcing activities*. SCOPE, the *backbone organization*, supports local implementation of the initiative by providing opportunities for *continuous communication* between and across communities and the infrastructure necessary to track *shared measurement*. Similar to others' experiences,<sup>32,33</sup> we found the formative years of SCOPE foundational as we tended to the effort and time devoted to gaining "the space and trust and time

that is required to make any kind of sustainable change possible,"<sup>34</sup> and maximizing community ownership by ensuring that the project fit community context.<sup>35</sup> Such participatory relationships make health promotion issues visible in various organizations and administrations and stimulate interest in future collaborations.<sup>36</sup> The challenge lies in convincing funders of the importance of investing resources in building relationships and co-developing the initiative in partnership with community stakeholders, rather than funding pre-existing initiatives implemented in one sector and, thus, less likely to achieve collective action across multiple community sectors. These challenges have been well described in the CI literature, with a call to action for funding agencies to change their focus from seeking the 'silver bullet' solution to finding the 'silver buckshot' solution where success comes from many aligned and reinforcing interventions.<sup>37</sup>

Similar to published CBPR models (i.e., EPODE, SUS) for childhood obesity prevention,<sup>8,9</sup> SCOPE initially partnered with local government with the intent of facilitating wide systemic change.<sup>38</sup> Political commitment is a pillar of the EPODE model, where the approach requires political buy-in prior to program initiation.<sup>39</sup> However, as we experienced in community B, such relationships can disappear quickly with political cycles of leadership and shifting priorities. As such, SCOPE has explored

more enduring partnerships such as Divisions of Family Practice or 'healthy community partnership tables' that include stakeholders representing multiple sectors, motivated to take collective action to improve the health of children living in their community. As a result, SCOPE has demonstrated that CBPR models of childhood obesity prevention can be implemented without initial political commitment, recognizing that involvement of local government is valuable at any stage of the initiative. Further, SCOPE's more diverse approach to partnership has led to the emergence of novel community leadership: SCOPE's partnership with community C's DoFP has unleashed the existing motivation among primary care physicians to participate in community-wide health promotion. In 2014, the Doctors of BC's Be Active Every Day initiative engaged family physicians (FPs) from across BC, sharing the Live 5-2-1-0 message and promoting physical activity in almost 40 BC elementary schools. This link between primary care and public health in the context of a multisectoral childhood obesity prevention initiative is being explored in other jurisdictions,<sup>40</sup> and will continue to be explored in SCOPE's newest communities. For example, in 2015, a second DoFP (in a new BC community) formalized a partnership with SCOPE and FPs are currently leading community-based health promotion initiatives using Live 5-2-1-0.

Continuous communication facilitated establishing trusting relationships, generating a common understanding of the problem and collaborative approach to the solution based on evidence and best practice, and shifted stakeholder focus beyond individual agendas to the broader community context. Linking systems, first promoted by Orlandi<sup>41</sup> and used in the Canadian Heart Health Initiative, have been shown to build capacity and promote the dissemination of health promotion innovations.<sup>42</sup> The EPODE model involves knowledge sharing between the central coordination team and communities through the provision of guidelines, resources and best practices.<sup>39</sup> Unique to SCOPE is its KTE linking system that supports continuous communication *between* 'Live 5-2-1-0' communities, allowing new communities to learn from existing ones and customize their own initiative without having to begin anew. SCOPE's online resource map (<http://www.live5210.ca/resources/>) offers Live 5-2-1-0 resources freely available and formatted to allow integration of local information while maintaining evidence-based content. Moving forward, SCOPE's KTE platform will support project scale-up by providing opportunities for new communities to leverage the work achieved in existing ones (*inter-community* communication), concurrently adapting this existing knowledge to their unique community contexts (*intra-community* communication), while receiving support from SCOPE's central team.

In the beginning, we had little understanding of what community-level multisectoral action would look like with regard to childhood obesity prevention. Instead, we articulated our philosophy of CBPR, shared the compelling evidence demonstrating the effectiveness of this approach,<sup>13,43</sup> and expressed our desire to partner with the community. Our understanding of multisectoral action to create healthier environments for children and youth subsequently surfaced from the '*collective seeing, learning, and doing*'<sup>37</sup> resulting from

intensive community engagement. This understanding continues to be cultivated as more BC communities partner with SCOPE. Consequently, we have witnessed emergent rather than pre-determined solutions.<sup>44</sup>

Notably absent from our evaluation are population-level data such as rates of childhood overweight and obesity. This is largely due to limited capacity to collect these data (i.e., financial) and limited community buy-in (i.e., stakeholders' concerns with measuring school-aged children). In keeping with our CBPR agenda, we instead focus on collecting process data as described in this paper. As SCOPE evolves, it will be critical to collect population-level outcome data to demonstrate its impact, while respecting the concerns and priorities of community stakeholders.

## CONCLUSION

SCOPE is a childhood obesity prevention initiative premised on earlier health promotion efforts that recognizes that communities are complex, operating within diverse cultural, economic, demographic and social systems. SCOPE has successfully engaged collective action to address childhood obesity by coordinating action across multiple local sectors. We found CI to provide a remarkably constructive framework for explaining engagement and implementation processes of SCOPE. Our 'best-process' template aligns with the five conditions of CI, with community engagement as the foundational step. Our future research will collect data on proximal indicators of success, including changes in community capacity to deliver SCOPE, and environmental or policy change that make the healthy choice the easy choice. We will also continue to study the science of KTE within and between communities, and describe how a central backbone organization facilitates multisectoral and coordinated action implementation and collective impact.

## REFERENCES

1. Daar AS, Singer PA, Persad DL, Pramming SK, Matthews DR, Beaglehole R, et al. Grand challenges in chronic non-communicable diseases. *Nature* 2007;450(7169):494-96. doi: 10.1038/450494a.
2. De Pergola G, Silvestris F. Obesity as a major risk factor for cancer. *J Obes* 2013;2013(8): 291546. PMID: 24073332. doi: 10.1155/2013/291546.
3. Lee WWR. An overview of pediatric obesity. *Pediatr Diabetes* 2007;8(Suppl 9): 76-87. PMID: 17991136. doi: 10.1111/j.1399-5448.2007.00337.x.
4. Vandenbroek IP, Goossens J, Clemens M. Foresight - Tackling Obesities: Future Choices Building the System Obesity Map. Government Office for Science, UK Government's Foresight Programme. 2007. Available at: <http://www.foresight.gov.uk/Obesity/12.pdf> (Accessed April 28, 2015).
5. Finegood DT, Merth TDN, Rutter H. Implications of the Foresight obesity system map for solutions to childhood obesity. *Obesity* 2010;18(Suppl 1): S13-16. PMID: 20107455. doi: 10.1038/oby.2009.426.
6. Kumar J, Kidd T, Li Y, Lindshield E. Using the Community-Based Participatory Research (CBPR) approach in childhood obesity prevention. *Int J Child Health Nutr* 2014;3(4):170-78.
7. King L, Gill T, Allender S, Swinburn B. Best practice principles for community-based obesity prevention: Development, content and application. *Obes Rev* 2011;12(5):329-38. PMID: 20880111. doi: 10.1111/j.1467-789X.2010.00798.x.
8. Borys JM, Le Bodo Y, Jebb SA, Seidell JC, Summerbell C, Richard D, et al. EPODE approach for childhood obesity prevention: Methods, progress and international development. *Obes Rev* 2012;13(4):299-15. PMID: 22106871. doi: 10.1111/j.1467-789X.2011.00950.x.
9. Economos CD, Hyatt RR, Goldberg JP, Must A, Naumova EN, Collins JJ, et al. A community intervention reduces BMI z-score in children: Shape Up Somerville first year results. *Obesity* 2007;15(5):1325-36. PMID: 17495210.
10. Economos CD, Hyatt RR, Must A, Goldberg JP, Kuder J, Naumova EN, et al. Shape Up Somerville two-year results: A community-based environmental change intervention sustains weight reduction in children. *Prev Med* 2013;57(4):322-27. PMID: 23756187. doi: 10.1016/j.jpmed.2013.06.001.

11. Sanigorski AM, Bell AC, Kremer PJ, Cuttler R, Swinburn BA. Reducing unhealthy weight gain in children through community capacity-building: Results of a quasi-experimental intervention program, Be Active Eat Well. *Int J Obes* 2008;32(7):1060–67. PMID: 18542082. doi: 10.1038/ijo.2008.79.
12. Swinburn B, Malakellis M, Moodie M, Waters E, Gibbs L, Millar L, et al. Large reductions in child overweight and obesity in intervention and comparison communities 3 years after a community project. *Pediatr Obes* 2014;9(6): 455–62. PMID: 24203373. doi: 10.1111/j.2047-6310.2013.00201.x.
13. Amed S. The future of treating youth-onset type 2 diabetes: Focusing upstream and extending our influence into community environments. *Curr Diab Rep* 2015;15(3):7. PMID: 25644815. doi: 10.1007/s11892-015-0576-7.
14. Hancock T. The little idea that could: A global perspective on healthy cities and communities. *Natl Civ Rev* 2014;103(3):29–33. doi: 10.1002/ncr.21196.
15. Naylor P-J, Wharf-Higgins J, Blair L, Green L, O'Connor B. Evaluating the participatory process in a community-based heart health project. *Soc Sci Med* 2002;55(7):1173–87. PMID: 12365529.
16. Potvin L, Cargo M, McComber AM, Delormier T, Macaulay AC. Implementing participatory intervention and research in communities: Lessons from the Kahnawake Schools Diabetes Prevention Project in Canada. *Soc Sci Med* 2003;56(6):1295–305. PMID: 12600366.
17. Wharf-Higgins J, Begoray D, MacDonald M. A social ecological conceptual framework for understanding adolescent health literacy in the health education classroom. *Am J Community Psychol* 2009;44(3–4):350–62. PMID: 19838790. doi: 10.1007/s10464-009-9270-8.
18. Riley BL, Stachenko S, Wilson E, Harvey D, Cameron R, Farquharson J, et al. Can the Canadian Heart Health Initiative inform the Population Health Intervention Research Initiative for Canada? *Can J Public Health* 2009; 100(1):120–26. PMID: 19263979.
19. Raine KD, Plotnikoff R, Nykiforuk C, Deegan H, Hemphill E, Storey K, et al. Reflections on community-based population health intervention and evaluation for obesity and chronic disease prevention: The Healthy Alberta Communities project. *Int J Public Health* 2010;55(6):679–86. PMID: 20814715. doi: 10.1007/s00038-010-0187-7.
20. Ebbesen LS, Heath S, Naylor P-J, Anderson D. Issues in measuring health promotion capacity in Canada: A multi-province perspective. *Health Promot Int* 2004;19(1):85–94. PMID: 14976176.
21. Kania J, Kramer M. Collective impact. *Stanford Soc Innovation Rev* Winter 2011.
22. Willows ND, Hanley AJG, Delormier T. A socioecological framework to understand weight-related issues in Aboriginal children in Canada. *Appl Physiol Nutr Metab* 2012;37(1):1–13. PMID: 22269027. doi: 10.1139/h11-128.
23. Stokols D. Translating social ecological theory into guidelines for community health promotion. *Am J Health Promot* 1996;10(4):282–98. PMID: 10159709.
24. Israel BA, Schulz AJ, Parker EA, Becker AB. Review of community-based research: Assessing partnership approaches to improve public health. *Annu Rev Public Health* 1998;19(1):173–202. PMID: 9611617.
25. Tolma EL, Cheney MK, Troup P, Hann N. Designing the process evaluation for the collaborative planning of a local turning point partnership. *Health Promot Pract* 2009;10(4):537–48. PMID: 18535312. doi: 10.1177/ 1524839907311574.
26. Saunders RP, Evans MH, Joshi P. Developing a process-evaluation plan for assessing health promotion program implementation: A how-to guide. *Health Promot Pract* 2005;6(2):134–47. PMID: 15855283.
27. McIntosh B, Daly A, Masse L, Collet JP, Higgins JW, Naylor PJ, et al. Sustainable Childhood Obesity Prevention Through Community Engagement (SCOPE) Program: Evaluation of the implementation phase. *Biochem Cell Biol* 2015;14:1–7. PMID: 25974751. [Epub Ahead of Print]
28. Crabtree BF, Miller WL. *Doing Qualitative Research*, 2nd ed. Newbury Park, CA: SAGE, 1999.
29. Strauss A. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park, CA: SAGE, 1990.
30. Barlow SE, Expert Committee. Expert committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: Summary report. *Pediatrics* 2007;120 (Suppl 4):S164–92. doi: 10.1542/peds.2007-2329C.
31. Dressendorfer RH, Raine K, Dyck RJ, Plotnikoff RC, Collins-Nakai RL, McLaughlin WK, et al. A conceptual model of community capacity development for health promotion in the Alberta Heart Health Project. *Health Promot Pract* 2005;6(1):31–36. PMID: 15574525.
32. Chomitz VR, McGowan RJ, Wendel JM, Williams SA, Cabral HJ, King SE, et al. Healthy Living Cambridge Kids: A community-based participatory effort to promote healthy weight and fitness. *Obesity* 2010;18(Suppl 1):S45–53. PMID: 20107461. doi: 10.1038/oby.2009.431.
33. Romon M, Lommez A, Tafflet M, Basdevant A, Oppert JM, Bresson JL, et al. Downward trends in the prevalence of childhood overweight in the setting of 12-year school- and community-based programmes. *Public Health Nutr* 2009;12(10):1735–42. PMID: 19102807. doi: 10.1017/S1368980008004278.
34. Bauld L, Judge K, Barnes M, Benzeval M, Mackenzie M, Sullivan H. Promoting social change: The experience of health action zones in England. *J Soc Pol* 2005;34(3):427–45. doi: 10.1017/S0047279405008858.
35. Minkler M. Community-based research partnerships: Challenges and opportunities. *J Urban Health* 2005;82(2 Suppl 2):ii3–12. PMID: 15888635.
36. Andersson CM, Björås G, Tillgren P, Östenson CG. A longitudinal assessment of inter-sectorial participation in a community-based diabetes prevention programme. *Soc Sci Med* 2005;61(11):2407–22. PMID: 15951085.
37. Collective Insights on Collective Impact. *Stanford Soc Innovation Rev* 2014:1–24.
38. Economos CD, Curtatone JA. Shaping Up Somerville: A community initiative in Massachusetts. *Prev Med* 2010;50(Suppl 1):S97–98. PMID: 19897065. doi: 10.1016/j.ypmed.2009.10.017.
39. Van Koperen TM, Jebb SA, Summerbell CD, Visscher TL, Romon M, Borys JM, et al. Characterizing the EPODE logic model: Unravelling the past and informing the future. *Obes Rev* 2013;14(2):162–70. PMID: 23114167. doi: 10.1111/j.1467-789X.2012.01057.x.
40. Blanck HM, Collins JL. The childhood obesity research demonstration project: Linking public health initiatives and primary care interventions community-wide to prevent and reduce childhood obesity. *Child Obes* 2015;11(1):1–3. PMID: 25679058. doi: 10.1089/chi.2014.0122.
41. Orlandi MA. Health promotion technology transfer: Organizational perspectives. *Can J Public Health* 1996;87(Suppl 2):S28–33. PMID: 9002340.
42. Robinson K, Elliott SJ, Driedger SM, Eyles J, O'Loughlin J, Riley B, et al. Using linking systems to build capacity and enhance dissemination in heart health promotion: A Canadian multiple-case study. *Health Educ Res* 2005;20(5): 499–513. PMID: 15613492.
43. Bleich SN, Segal J, Wu Y, Wilson R, Wang Y. Systematic review of community-based childhood obesity prevention studies. *Pediatrics* 2013; 132(1):e201–10. PMID: 23753099. doi: 10.1542/peds.2013-0886.
44. Kania J, Kramer M. Embracing emergence: How collective impact addresses complexity. *Stanford Soc Innovation Rev* 2013:1–8.

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## RÉSUMÉ

**OBJECTIFS :** Nous décrivons les processus utilisés par SCOPE, une initiative de recherche participative communautaire (RPC), pour obtenir une mobilisation multisectorielle et une action collective afin de prévenir l'obésité juvénile.

**PARTICIPANTS :** SCOPE recrute des représentants de divers secteurs (administration municipale, santé, écoles, loisirs, médias locaux, petite enfance, services communautaires) qui influencent les milieux de vie, d'apprentissage et de jeu des enfants.

**LIEU :** SCOPE est mise en œuvre dans trois communautés de la Colombie-Britannique (C.-B.).

**INTERVENTION :** SCOPE ([www.live5210.ca](http://www.live5210.ca)) est une initiative concertée, appliquée dans plusieurs milieux, qui vise à améliorer la capacité d'une communauté à créer et à offrir des solutions locales pour promouvoir les poids-santé chez les enfants. En partenariat avec un organisme local, SCOPE recrute plusieurs acteurs qui planifient et mettent en œuvre des actions encadrées par un message de santé commun (« Live 5-2-1-0 ») fondé sur des données probantes. L'équipe centrale de SCOPE à Vancouver (C.-B.) facilite l'harmonisation des actions avec les initiatives provinciales, l'application et l'échange des connaissances (AEC) dans et entre les communautés, ainsi que la cueillette, l'analyse et la diffusion des données partagées.

**RÉSULTATS :** Les pratiques exemplaires issues de l'expérience de SCOPE sont conformes aux principes de la RPC et aux « cinq conditions de l'impact collectif », à savoir : un plan d'action commun; des actions se soutenant mutuellement; la communication permanente; une structure de soutien; et un système d'évaluation commun. SCOPE a obtenu des changements durables dans les pratiques, encadrés par un plan d'action commun (« Live 5-2-1-0 ») qui a mené à des actions intersectorielles se soutenant mutuellement.

**CONCLUSION :** Une initiative communautaire concertée de prévention de l'obésité juvénile est possible si l'on utilise les principes de la RPC et que l'on porte attention aux conditions nécessaires pour obtenir un impact collectif.

**MOTS CLÉS :** obésité pédiatrique; prévention et contrôle; promotion de la santé; recherche participative communautaire