HHS Public Access

Author manuscript

Prog Community Health Partnersh. Author manuscript; available in PMC 2017 July 25.

Published in final edited form as:

Prog Community Health Partnersh. 2017 ; 11(2): 149–159. doi:10.1353/cpr.2017.0019.

Implementing Physical Activity Recommendations in a Tri-ethnic Rural Community through a Community-University Partnership

Sally M. Davis, PhD[1], **Theresa Cruz, PhD**[1], **Julia Meredith Hess, PhD**[2], **Richard Kozoll, MD, MPH**[3], and **Janet Page-Reeves, PhD**[4]

[1]Prevention Research Center, Department of Pediatrics, University of New Mexico, Albuquerque

[2]Department of Anthropology and Prevention Research Center, University of New Mexico, Albuquerque

[3]Step Into Cuba, Nacimiento Community Foundation, Cuba, NM

[4]Department of Family and Community Medicine, University of New Mexico, Albuquerque

Abstract

Background—A tri-ethnic rural community with limited resources and a university Prevention Research Center developed a partnership to promote evidence-based physical activity.

Objective—The purpose of this study was to investigate how a community-university partnership can disseminate and implement *The Community Guide*'s recommendations for increasing physical activity and create a model for other under-resourced communities experiencing high rates of chronic disease.

Methods—Qualitative data collected through 47 semi-structured interviews, meeting minutes, and local newspaper articles were coded for themes and analyzed for patterns across the data.

Results—Implementation resulted in the creation of new paths and trails, increased walkability throughout the community, local park enhancements, and a community-wide campaign. Lessons learned included the importance of community-defined goals and outcomes, leadership, volunteerism, mutually beneficial goals, synergy, and having non-traditional partners.

Conclusion—This research provides a community-university partnership model for implementing evidence-based strategies to increase physical activity in rural communities.

Keywords

The Community Guide; built environment; physical activity; rural; community-university partnership; walking; dissemination and implementation research

Physical activity is protective against cardiovascular disease, cancer, diabetes, obesity, and other chronic conditions,[1–3] and national recommendations call for regular physical activity,[4] specifically walking.[5] The US Task Force on Community Preventive Services, in *The Guide to Community Preventive Services* (*The Guide*), recommends strategies for increasing physical activity at the community level.[6] The evidence base for these recommendations was largely from studies in urban or suburban areas.[7] Research on interventions to enhance physical activity in rural communities is limited.[8] Many rural-urban

disparities exist: rural residents are more likely than urban residents to be older, poorer, in poor health, and to have a chronic condition; they have also been reported to be less physically active.[9–11]

Community coalitions are increasingly used in health promotion and are particularly effective for addressing complex health problems.[12,13] Partnership research is one approach to bridging the gap between research and practice and creating mutually beneficial results for communities and researchers.[14] This paper describes how a community-university partnership in a rural community in New Mexico disseminated and implemented *The Guide*'s recommendations for increasing physical activity.

METHODS

Partner Community

The study was conducted in Cuba, NM, a village of about 730 people that serves a population of approximately 5,000.[15] The area is racially and ethnically diverse, with American Indian, Hispanic, and "Anglo" (non-Hispanic white) residents. The unemployment rate in the Cuba area is 18.3%,[16] and 41.5% of residents live below the poverty level.[16] These rates are double those for New Mexico (9.7% and 20.4%, respectively[15]) and the United States (9.7% and 15.4%[16]). Approximately 23% of New Mexicans live in villages with fewer than 2,500 residents.[15] Like Cuba, these rural communities are often tri-ethnic,[15] under-resourced,[16] and have high rates of unemployment and health disparities.[17] Cuba can therefore serve as a model for putting evidence-based recommendations into practice in rural New Mexico.

Community-University Partnership: VIVA-Step Into Cuba

In 2007, the concerns of Cuba community members about the area's high rates of obesity and diabetes and the pressing need for a dialysis center to address diabetic renal disease led to the formation of the Step Into Cuba Alliance, a local initiative to promote physical activity, especially walking[18,19] (Table 1). Village Interventions and Venues for Activity (VIVA), a project of the Prevention Research Center (PRC) of the University of New Mexico (UNM) became the evaluation component of the community-university partnership, called VIVA-Step Into Cuba. In 2009, the Alliance began implementing evidence-based strategies to increase physical activity recommended in *The Guide,*[18,20,21] and deemed feasible by the community: community-wide campaigns, access to places for physical activity, street-scale design, social support for physical activity, and individually adapted programs.[6]

Data Collection

Research was approved by the UNM Human Research Protections Office. Qualitative data were collected by means of interviews and field notes, textual analysis of newspaper articles, and meeting minutes. A Cuba-based research team member recruited a purposive sample of interviewees through social network/snowball sampling, starting with core members of the Alliance. Forty-seven interviews (n = 45 adults) were conducted between January and April 2011. Interviewees were Alliance members, members of the walking and hiking groups,

county and local government officials, healthcare providers, local business people, public lands managers, school staff, transportation officials, and research team members. The goals of the interviews were to explore changes participants attributed to the project, change processes, and the value of the partnership. Interview questions covered motivations for involvement, leadership, strategies, barriers, facilitators, successes, and failures.

A member of the research team with qualitative research experience conducted the interviews at places of convenience to the interviewees. Written consent and demographic information were provided by interviewees before the interview. The interviewer transcribed the interviewee's speech during the interview. The semi-structured interviews used a fixed set of open-ended questions with follow-up prompts and lasted 1 to 2 hours. The interview guide was developed by the university research team with guidance from the evaluation workgroup of the Alliance. All interviewees received a Step Into Cuba T-shirt.

Relevant articles from the *Cuba News* published between April 2009 and July 2014 were analyzed. Minutes from VIVA, Alliance, and public meetings occurring during the same period were collected and analyzed to document the implementation process.

Data Analysis

Meeting minutes, abstracted newspaper articles, and interview transcripts were imported into NVivo 10 (QSR International, Doncaster, Victoria, Australia) for analysis. The university research team developed a code book that included definitions and applications of codes. Themes were created both deductively, based on research questions, and inductively, as ideas arose from the data. Data were coded by two members of the team to establish inter-rater reliability, and the coding was reviewed by Alliance members. The finalized code book was used for analysis of all qualitative data in the study (i.e., interviews, meeting minutes, and newspaper articles). Two additional team members conducted a second phase of analysis to examine Alliance and community members' perspectives on initial conditions and outcomes. Prominent themes identified in NVivo were further analyzed by using focused coding and analytic memos to identify patterns across the data.[22]

RESULTS

According to qualitative data collected from the community and research team between 2009 and 2014, the community-university partnership promoted physical activity in Cuba by improving walkability and safety along the highway; enhancing the local park; creating, enhancing, and promoting paths and trails; providing social support for physical activity; implementing a community-wide campaign; and conducting a Health Impact Assessment for a proposed new segment of the Continental Divide Trail (CDT).[20] Results included identification of facilitators and barriers to the implementation process and lessons learned (Table 2).

Cultivating a Community-University Partnership

The goals and outcomes of VIVA-Step Into Cuba were defined at the outset by the community and related to community health, and the PRC was identified as a valuable potential partner and approached by the community early in the project. The community and

PRC collaborated to create a logic model (Figure 1) and to refine project goals and the partners' roles. Goals were linked to evidence-based strategies, and processes were collaboratively developed.

The Alliance focused on project implementation, including partnership development, relationship building, program activities, and grant writing. Some Alliance members also served on an evaluation committee, contributed to the research plan, provided interpretation of results, and contributed to publications. The PRC's role, in addition to studying the project, was to provide technical assistance with implementation of evidence-based recommendations and to identify resources, human capital, and funding mechanisms. Challenges for the partnership included community members' unfamiliarity with research protocols, researchers' difficulty in responding to rapidly developing project components, and ensuring that researchers respected community members' ideas and implementation activities.

Essential to the partnership were the knowledge and passion of community members; the eagerness of researchers to share knowledge and build capacity; the researchers' participation in local governmental processes (e.g., village council meetings); hiring and training community members; securing additional grant funding (both researchers and community partners); hiring PRC staff with knowledge of pedestrian planning; identifying sources of funding for hiring consultants; and providing feedback at Alliance meetings.

The creation of opportunities for engendering and acting on individual and collective ideas and problems produced a positive feedback loop that encouraged more ideas, participation, and support. Community members' perspectives were heard during a walkability workshop in 2009. During the workshop, "walking audits" were conducted to assess the visual appeal, safety, and walkability of Cuba. Feedback from the audits was presented to the village council and regional transportation planning organization to inform funding allocations. An interviewee explained the community's reception of the walkability workshop:

> "I think the walkability workshop worked well … [the results were] created into a report; it was distributed and well-received …. [I]t was really an attractive document, so for a small rural community it was impressive and it looks nice and people were proud of it in a way, because they could take it around and their input was included in it and it has also been referred to by [transportation experts] and the village looked to that."

Thus, attentiveness to community input and the quality of the published report[23] reflected positively on and furthered the work of the partnership.

The work of VIVA-Step Into Cuba was celebrated at a 2014 community-wide event during which Cuba was designated a CDT Gateway Community. The celebration showcased the accomplishments of the partnership with a professionally produced banner, family stroll, and other physical activities. The event, which was reported in the *Cuba News*, was an opportunity to share successes and build cohesiveness, and it exemplified the mutually beneficial nature of the work. An Alliance member commented on the partnership:

> "I think how the partners have worked well together—really committed to the goals and how everybody is supportive of the Step Into Cuba Alliance efforts. I think that the synergy between [the university] and the Alliance has worked well … there is a lot of mutual respect for each other's experience and expertise …"

Recognizing Leadership

One interviewee commented that the Alliance efforts required strong leadership from someone with good standing in the community: *"… I think [the local physician and Alliance member] is very respected. I think the people from Step Into Cuba are very respected and maybe that is why I have so much hope that this will continue."* The Alliance leadership encouraged involvement of people with different motivations and goals by underscoring the mutual benefits of participation and strengthening of the Alliance. The Alliance provided an expansive view of leadership, moving beyond political and institutional leadership to enable those with a passion for the project goals to lead. It accommodated change—people moved in and out of roles, depending on their motivations and interest—and it focused attention on shifting power dynamics and how these might benefit or derail goals.

Three essential roles were community leader, champion, and volunteer. Community leaders often had positions of authority or influence in the community, and they lent their expertise for projects that were related to, but extended beyond, their interests. For example, the Alliance included the mayor and other village government officials, teachers and school administrators, and healthcare providers.

The role of innovative champions (charismatic individuals who model and foster positive change) has been recognized in studies of organizational change.[24] The Alliance recognized champions as potential agents for community change, and several emerged from within the Alliance. Most were volunteers, but some were paid to advocate for change. For example, the paid walking leaders channeled their own passion for physical activity into supporting others to become more physically active and to promote walking in the community as a social norm.

Promoting Volunteerism

Alliance members solicited other volunteers who contributed to Step Into Cuba by providing labor for built environment projects. Seeing people volunteer motivated others to contribute (a feedback loop; Table 2). Volunteers shared not only their experience; they also contributed to the knowledge and the positive image of the project. One interviewee said:

> "[Volunteerism is] triggering more interest in the project …. There is some volunteering stewardship that people seem to take seriously. They have good turnout to participate … projects depend on that for follow-up, so slowly building up the capacity for this sort of thing is more than could ever have happened in Cuba [before]."

Volunteerism provided labor and enhanced project visibility, community investment, long-term stewardship, and sustainability. Ensuring that volunteers felt appreciated and recognized helped foster volunteerism as a local norm.

Encouraging Participation by Supporting Mutually Beneficial Goals

Our research showed that recognizing and embracing diversity within a community is an important aspect of a productive partnership and that diversity includes various motivations for involvement and outcome goals (Table 2). Therefore, community research must be framed around broad common goals and desired outcomes. To accomplish this, partners must strive to respectfully find common ground and negotiate mutually beneficial outcomes. Partners can also engage other constituencies to broaden the coalition. In Cuba, one example of this was the Cuba Independent School District's "Wellness Resolution," which was explicitly adopted in response to the Step Into Cuba program and granted community access to the schools' tracks and cross-country trails, allowed inclusion of the trails in the program guides, and permitted program signage on the trails. The resolution also encouraged student interest and participation in enhancements to the park. The school track coach said of the effect of such participation:

> "If kids are involved and interested, if they see other kids messing with it, they will take care of it."

Working within the Coalition Structure

Key to understanding individual motivations for participation in the Alliance was the commitment to improving the quality of life in Cuba. Alliance members did not always share the same priorities, but an overarching commitment to the community was always present. Analysis of meeting minutes showed that the Alliance had stable leadership acting in concert with a variable but continuously growing membership. New members represented diverse local, regional, and state interests as projects in their spheres of expertise were sequentially proposed. Alliance members met regularly to exchange information and engage participants in upcoming plans and opportunities. In a 2011 interview, one member said:

> "I would say the Alliance in itself is a success: maintaining quarterly meetings and progress at the meetings … [T]hinking through the land management [issues]. Success in getting people walking and active more than in the past."

Regular meetings and strategies for communication were important. Meeting agendas and minutes were distributed via email. Members telephoned others and encouraged them to attend meetings. Meetings were held quarterly, or as necessary, except when weather and road conditions made meeting impractical and generally included 20 to 30 people. Meetings were held in the evening, in the local clinic waiting room. The agenda was developed in advance by the Alliance chair and volunteer champion, who then elicited other items from the partners. Generally, the agenda consisted of items requiring decisions for which partner input was needed.

Meeting participants arranged their chairs in a circle, which encouraged open discussion. The Alliance chair steered the discussion, using the agenda, and minutes were taken by a volunteer. The decision-making process was group consensus. Proposed activities and projects were divided among the leadership according to their skills and time availability. Key to the partnership functionality was the hiring, by the UNM PRC, of a community member to coordinate partnership communication and provide technical assistance.

The work of VIVA-Step Into Cuba was communicated to the community through the *Cuba News* and a website (http://www.stepintocuba.org) that chronicled Alliance activities, informed community members about group physical activities and invited them to participate, and announced community events. In addition, interviewees reported that the presence of Alliance members at local government meetings was critical to raising awareness in the community, recognition of Step Into Cuba as a long-term effort, and maintaining realistic expectations for outcomes.

Creating Synergy

Lasker et al[25] proposed that synergy is the mechanism by which collaborations achieve outcomes and that synergy provides partnerships with an advantage over single agents in addressing health issues. Synergy was essential to the success of the community-university partnership in Cuba. Our data indicated that the partnership provided structure and human capital to bring community ideas to fruition. The Alliance served as a conduit through which efforts were collectivized and funneled. The partnership also shared event sponsorship, evaluation activities, presentations, and representation at important meetings. Analysis identified key elements of the collaboration as communication, facilitation, technical assistance, and the ability to seize opportunities as they arose.

Although the Centers for Disease Control and Prevention was an essential source of funding for the PRC's work, the community-university partnership successfully and collectively obtained funding and technical assistance from other sources. The total direct and leveraged funds obtained exceeded $1.3 million, a large portion of which was for sidewalks and other infrastructure.

The Fisher Community Trail: A Community-University Success Story

Completion of the Fisher Community Trail provides an illustration of how a community-university partnership can bridge the gap between research and practice. In 2009, the community began exploring options for trails and paths in and around Cuba. The village's close proximity to scenic public lands was seen as representing an opportunity to create such trails. An Alliance member knew of a privately owned strip of land within a mile of Cuba that appeared ideal for gaining access to the National Forest atop nearby Cuba Mesa. Alliance representatives approached the owners about permitting the building of a public trail, and after productive interaction, the owners chose to donate the land to Nacimiento Community Foundation, a local nonprofit organization for Alliance stewardship. The partnership identified and recruited individuals to survey the land, conduct a title search and appraisal, and provide legal assistance for the land acquisition.

During 2010 and 2011, community volunteers and a National Park Service (NPS) recreation planner flagged the route, two volunteer archeologists identified archaeological sites that required protection, a US Forest Service wildlife biologist ensured safety of wildlife habitats, and an NPS engineer drafted plans for a parking area. The proposed trail route was finalized, and the team planned trail construction. With technical assistance from the NPS and the support of a university grant, community volunteers and paid local youth worked for several weeks to build the trail. In August 2011, an inaugural moonlight hike was held on the

completed Fisher Trail (named for the donors), with participants ranging from 3 to 76 years of age. The trail parking area was completed in 2012 by the county, with fencing and a kiosk constructed by volunteers. The parking area was surfaced in 2015 with grant funding acquired by the partnership. Trail maintenance is performed periodically by volunteers and youth corps groups coordinated by the Alliance.

The Fisher Trail has garnered enthusiasm from community members; one Alliance champion said in an interview:

> "That is a really beautiful piece of land and the access it provides and it is just fantastic and makes me grin. It is almost walking distance from town. It is a fantastic venue. I almost wonder, what I mean to say is that it has the potential to be a tourist venue: people could stop in and take a trip, a little day trip and take a picnic. [It's] not only for the community, but for the highway traffic."

DISCUSSION

There is limited research on putting *The Guide*'s recommendations for increasing physical activity into practice, especially in rural, under-resourced communities. Our experience offers several insights into using a community-university partnership to accomplish this goal.

Role of Context

Cuba shares many features with other rural communities in the United States. It is distant from large urban centers and lacks resources, with transportation, infrastructure, and other barriers. However, Cuba, like each rural community, must be viewed in the light of its unique historical, political, and economic context; and understanding this was critical to our partnership's work. As one community member commented in an interview:

> "Because we're so rural, sometimes it's hard to reach people. You don't have the standard city response through email or phone—so we have really had to work on that—holding workshops, posting flyers—we've really had to approach it in a different way."

Fundamentals of a Successful Community-University Partnership

One important aspect of the partnership was that it was initiated by the community. Recognizing and identifying broad community health goals provided ample opportunities for researcher and community approaches. The partnership helped to identify, engage, and mobilize established and new community leadership. Regular meetings and paid staff who could maintain focus and follow up on community ideas, promote volunteerism, and mobilize volunteers were beneficial. Several achievements increased the project's profile, momentum, and ability to get people involved. Members of the partnership also demonstrated a willingness to work together to resolve challenges as they arose.

Disseminating Results Locally

The partnership shared results and incorporated community members' feedback throughout the project. This occurred at Alliance meetings, through articles in the *Cuba News*, and at other meetings, including those of the village council, school board, transportation and planning agencies, the NPS, and the Bureau of Land Management. The process helped build confidence and trust in Alliance efforts to include diverse community perspectives.

Limitations

Selection bias is a concern with purposeful and snowball sampling of interviewees because some relevant perspectives may not be captured. However, we strived to include interviewees with substantial knowledge of and involvement in the project.

Applying these Lessons to Other Communities

Although rural communities are often characterized as resource poor, we found that a community-university partnership can create important changes in such communities through cultivation of local resources, respect for partners, and joint development of capacity. Our data show that a long timeframe may be required to establish trust, develop relationships, and allow for the essential cross-fertilization of ideas and activities. Competencies must be developed so that the partnership can function and goals can be realized. Sharing successes allows for sustainability and completion of similar work in other communities. The current iteration of VIVA-Step Into Cuba is VIVA II, the goal of which is to scale up our model to other communities through interactive web-based modules and technical assistance (http://viva-connects.org).

Acknowledgments

We thank Alejandro Ortega and Emily Piltch for assistance with community engagement and the qualitative data collection; Susan DeFrancesco for technical assistance with community engagement and identifying resources; Beverly Gorman for assistance with the qualitative data analysis; the Step Into Cuba Alliance and interview participants for the time they invested in the evaluation process; and Renée J. Robillard for editorial assistance during preparation of the manuscript. The University of New Mexico Prevention Research Center is supported by Cooperative Agreement Number U48DP005034 from the Centers for Disease Control and Prevention (CDC). The findings and conclusions in this article are those of the authors and do not necessarily represent the official position of the CDC.

REFERENCES

1. Lee IM, Shiroma EJ, Lobelo F, Puska P, Blair SN, Katzmarzyk PT. Lancet Physical Activity Series Working Group. Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. Lancet. 2012; 380(9838):219–229. [PubMed: 22818936]
2. Patel CJ, Rehkopf DH, Leppert JT, Bortz WM, Cullen MR, Chertow GM, et al. Systematic evaluation of environmental and behavioural factors associated with all-cause mortality in the United States National Health and Nutrition Examination Survey. Int J Epidemiol. 2013; 42(6): 1795–1810. [PubMed: 24345851]
3. Shaw K, Gennat H, O'Rourke P, Del Mar C. Exercise for overweight or obesity. Cochrane Database Syst Rev. 2006; (4) CD003817.
4. US Department of Health and Human Services. Washington: US Department of Health and Human Services; 2008. 2008 physical activity guidelines for Americans [Internet]. Available from: http://health.gov/paguidelines/pdf/paguide.pdf. [cited 2016 Jan 27]

5. US Department of Health and Human Services. Washington: Office of the Surgeon General; 2015. Step it up! The Surgeon General's call to action to promote walking and walkable communities [Internet]. Available from: http://www.surgeongeneral.gov/library/calls/walking-and-walkable-communities/call-to-action-walking-and-walkable-communites.pdf. [cited 2015 Sep 21]
6. Task Force on Community Preventive Services. Recommendations to increase physical activity in communities. Am J Prev Med. 2002; 22(4 suppl):67–72. [PubMed: 11985935]
7. Kahn EB, Ramsey LT, Brownson RC, Heath GW, Howze EH, Powell KE, et al. The effectiveness of interventions to increase physical activity: a systematic review. Am J Prev Med. 2002; 22(4 suppl): 73–107. [PubMed: 11985936]
8. Brownson RC, Baker EA, Boyd RL, Caito NM, Duggan K, Housemann RA, et al. A community-based approach to promoting walking in rural areas. Am J Prev Med. 2004; 27(1):28–34. [PubMed: 15212772]
9. Agency for Healthcare Research and Quality. Chartbook on rural health care [Internet]. Rockville, MD: Agency for Healthcare Research and Quality; 2015. 2014 National healthcare quality and disparities report. Available from: http://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/nhqrdr/2014chartbooks/ruralhealth/2014nhqdr-ruralhealth.pdf. [cited 2015 21 Sep]
10. Bolin JN, Bellamy GR, Ferdinand AO, Vuong AM, Kash BA, Schulze A, et al. Rural healthy people 2020: new decade, same challenges. J Rural Health. 2015; 31(3):326–333. [PubMed: 25953431]
11. Martin SL, Kirkner GJ, Mayo K, Matthews CE, Durstine JL, Hebert JR. Urban, rural, and regional variations in physical activity. J Rural Health. 2005; 21(3):239–244. [PubMed: 16092298]
12. Butterfoss, F., Kegler, M. The community coalition action theory. In: DiClemente, R.Crosby, R., Kegler, M., editors. Emerging theories in health promotion practice and research. 2nd. San Francisco: Jossey-Bass; 2009. p. 237-276.
13. Minkler, M., Salvator, AL. Participatory approaches for study design and analysis in dissemination and implementation research. In: Brownson, RC.Colditz, GA., Proctor, EK., editors. Dissemination and implementation research in health: translating science to practice. New York: Oxford University Press; 2012. p. 192-212.
14. Wells K, Jones L. "Research" in community-partnered, participatory research. JAMA. 2009; 302(3):320–321. [PubMed: 19602693]
15. Washington (DC): US Census Bureau; American Fact Finder, Decennial Census, US Census 2010 [Internet]. Available from: http://factfinder.census.gov/faces/nav/jsf/pages/programs.xhtml?program=dec. [cited 2015 Sep 22]
16. Washington (DC): US Census Bureau; American Fact Finder, 2009–2013 5-Year American Community Survey [Internet]. Available from: http://www.census.gov/programs-surveys/acs. [cited 2015 Sep 22]
17. New Mexico's Indicator-Based Information System (NM-IBIS): health indicator reports of diabetes death [Internet]. Santa Fe (NM): New Mexico Department of Health, Bureau of Vital Records and Health Statistics; Available from https://ibis.health.state.nm.us/indicator/view/DiabDeath.UrbanRur.html. [cited 2015 Sep 24]
18. Kozoll, R., Davis, SM. Physical activity promotion in rural America. In: Crosby, RA.Wendel, ML.Vanderpool, RC., Casey, BR., editors. Rural populations and health: determinants, disparities, and solutions. San Francisco: Jossey-Bass; 2012. p. 287-301.
19. Wilkerson, R., Baker, EA., Longjohn, MM. Building strategic alliances to promote healthy eating and active living. In: Rippe, JM., editor. Lifestyle medicine. 2nd. Boca Raton, FL: CRC Press; 2013. p. 1551-1556.
20. Studying trail enhancement plans - health impact assessment: Continental Divide National Scenic Trail - Cuba, New Mexico, 2015 [Internet]. Albuquerque: University of New Mexico Prevention Research Center; 2015. University of New Mexico Prevention Research Center and Step Into Cuba Alliance. Available from: http://www.nmhealthequitypartnership.org/file/hia/STEP-HIA-NEPA-Information-Final-Report.pdf. [cited 2015 Sep 22]
21. Davis SM, Cruz TH, Kozoll R. Health impact assessment, physical activity and federal lands trail policy. Health Behav Policy Rev. 2014; 1(1):82–95. [PubMed: 27213163]
22. Charmaz, K. Constructing grounded theory. 2nd. Los Angeles: Sage; 2014.

23. Piltch, E., editor. Cuba, New Mexico trails, park and walkability workshop [Internet]. Albuquerque: University of New Mexico Prevention Research Center; 2009. Available from: http://www.stepintocuba.org/PDFS/Walkability%20Report_FINAL.pdf. [cited 2015 Sep 21]

24. Rogers, EM. Diffusion of innovations. 5th. New York: Free Press; 2003.

25. Lasker RD, Weiss ES, Miller R. Partnership synergy: a practical framework for studying and strengthening the collaborative advantage. Milbank Q. 2001; 79(2):179–205. [PubMed: 11439464]

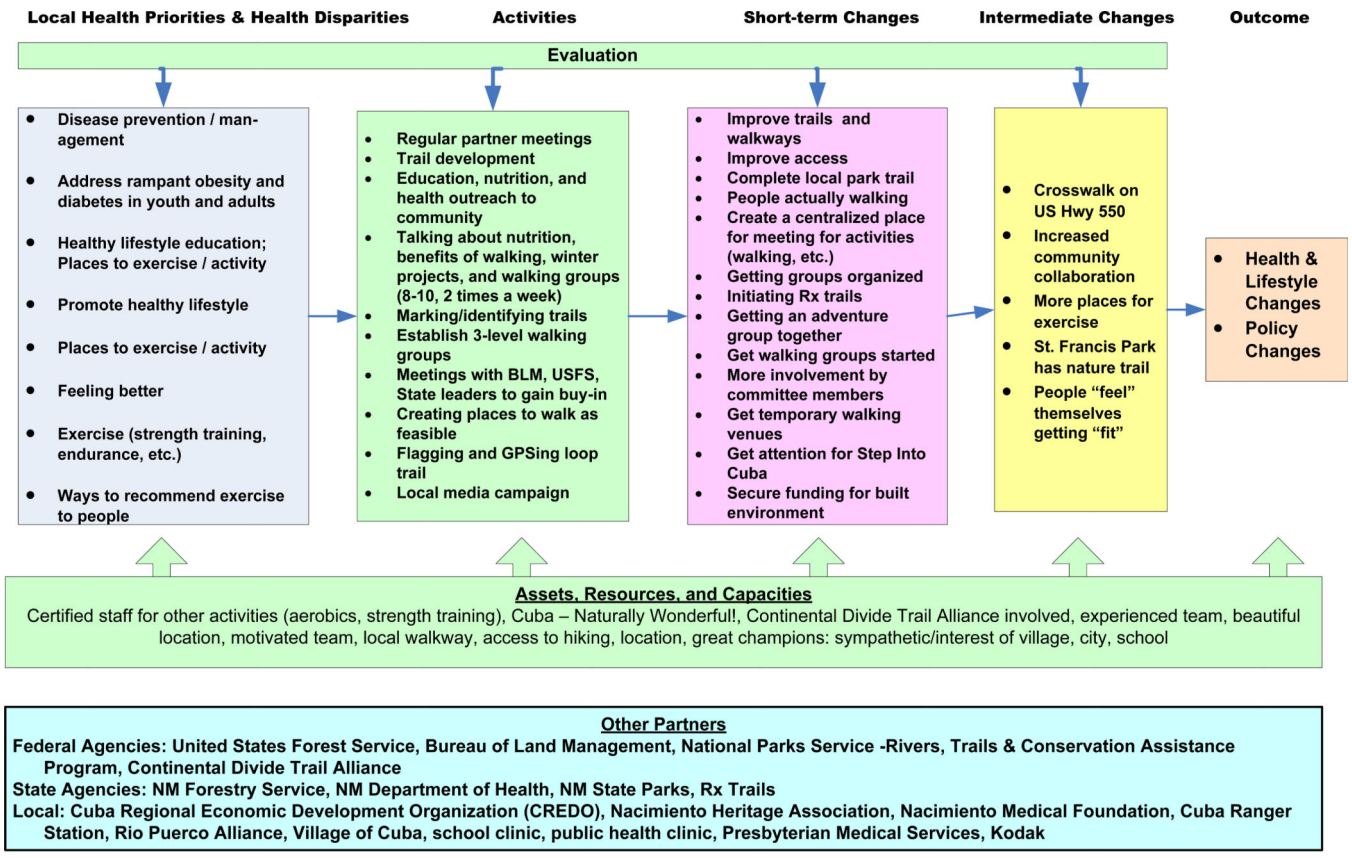

Figure 1.
Step Into Cuba Physical Activity Concept Map and Logic Model

Table 1

Timeline for VIVA-Step Into Cuba, Cuba, NM

Year	Events
2007	A group of healthcare providers concerned about diabetes in the Cuba community and a local physician, an avid hiker, conceive of the idea of increasing physical activity in the community as a way to address diabetes
2008	Community members, local and state organizations, and federal land-use partners (e.g., NCF, PMS, NMDOH, CDTA, and USFS) initiate discussions about diabetes and physical activity in Cuba
	Community group begins exploring funding opportunities for physical activity and construction of a network of community paths that would be centrally located, beginning at St. Francis of Assisi Park and extending to the nearby highway and local schools
	NMDOH awards funds to NCF for a walking champion to promote physical activity; walking groups are formed
	Community group begins discussions with UNM PRC about collaboration on a core research project; a logic model for the project is jointly developed
	Formal presentations by the community group are made to the Cuba Village Council, Sandoval County Commission, and Cuba School Board
	The community receives grants: for technical assistance, provided by the NPS Rivers, Trails, and Conservation Assistance program (awarded to the Village of Cuba); from the Nature Valley company, for park improvements (awarded to NCF); and from Kodak American Greenways(awarded to NCF)
	Competitive renewal grant proposal is submitted to the CDC for continuation of the UNM PRC, with Village Interventions and Venues for Activity (VIVA)-Step Into Cuba as the core research project to study the dissemination and implementation of *The Community Guide*'s recommendations for increasing physical activity
2009	Community group chooses the name, "Step Into Cuba Alliance"
	UNM PRC is awarded CDC funding for VIVA to be the center's core research project
	Members of the Step Into Cuba Alliance volunteer to be part of an evaluation workgroup, collaborating with UNM PRC researchers on instrument development, research protocols, and review of reports and other publications
	Walkability workshop is held to address community walkability; additional partners (MRCOG, NMDOT, and BLM) join the effort; UNM students participate
	Trail building and park enhancements (e.g., planting trees, shrubs, wildflowers; irrigation system) are initiated
	UNM PRC hires pedestrian and bicycle planner to work on plans for a safer, more walkable community, including sidewalks along the main traffic corridor in Cuba; a workgroup of the Alliance is established to address this issue
	RWJF HKHC program awards grant to the UNM PRC; focus is on healthy eating (e.g., via community gardens, farmers' market) and active living (e.g., Safe Routes to School) for youth
	Healthcare providers begin to write activity prescriptions for patients to take to the walking champion to develop individually adapted physical activity plans
	Community-wide campaign begins and continues as the project moves forward; includes informational kiosks, a VIVA-Step Into Cuba page in the local newspaper, and the program website (www.stepintocuba.org)
2010	Building partnership and community trust through collaboration, presence in the community, and responsiveness to technical assistance requests continues
	Master plan for the park is developed, with community input, by graduate student in the UNM School of Architecture and Planning
	Private land for two public trails (Fisher Trail and Rito San Jose Trail) is donated; UNM PRC provides technical assistance with legal process for transfer of land
	NMDOH receives Healthy Communities award from CDC; funds go to NCF for Step Into Cuba infrastructure support, including paying the walking champion
	Building volunteer base in the community continues; volunteers work on trail building, planting, irrigation, etc.; youth corps begin contributing to Step Into Cuba
2011	Rapid HIA examining health impact of street-scale design in Cuba is conducted
	Community members and researchers attend meetings to present and discuss proposals to develop sidewalks along the main traffic corridor in Cuba
	Fisher Trail is completed and opened
	NMDOT allocates funds for sidewalks along the main highway that bisects Cuba, after advocacy and planning by the Step Into Cuba Alliance; NMDOT also allocates funds for lighting to improve safety for vehicles and pedestrians
	New and improved sidewalks are constructed on south side of Cuba

Year	Events
2012	Step Into Cuba Alliance founder is recognized by the White House as a “Champion of Change”
	Cuba School Board passes wellness resolution, which includes a joint use/shared use agreement for community to use school facilities; walking and hiking guide to trails around Cuba are published; school cross-country trails are enhanced and promoted; walking program and healthy living program are introduced in Cuba schools
	Enhancements to the Fisher Trail, including informational kiosk, fencing, and parking area, are completed
	NMDOT installs safety lighting on roadway
	The partnership publishes a book chapter about promoting physical activity in rural communities[18]
2013	Step Into Cuba Alliance constructs the Rito San Jose Trail with community volunteers and funding from the BLM; annual Community Clean-up Day is initiated
	Community-wide campaign continues with special events (e.g., full moon hike, family strolls, Deadman’s Peak Trail Run, National Trails Day)
2014	School Overlook Trail is built in partnership with the BLM
	Step Into Cuba Alliance submits proposals to NMDOT for additional sidewalks, crosswalks, and pedestrian walkways
	Preliminary STEP-HIA is completed for NEPA assessment examining the health impact of connecting Cuba to the CDT through smaller access trails
	Cuba is declared a CDT Gateway Community
	Community celebration of achievements in Cuba is hosted by the Step Into Cuba Alliance and UNM PRC
	The partnership publishes an article in a peer-reviewed journal about the HIA process[21]

BLM, Bureau of Land Management; CDC, Centers for Disease Control and Prevention; CDT, Continental Divide Trail; CDTA, Continental Divide Trail Alliance; HIA, Health Impact Assessment; HKHC, Healthy Kids, Health Communities; MRCOG, NM Mid-Region Council of Governments; NCF, Nacimiento Community Foundation; NEPA, National Environmental Protection Act; NMDOH, New Mexico Department of Health; NMDOT, NM Department of Transportation; NM PRC, University of New Mexico Prevention Research Center; NPS, National Parks Service; PMS; Presbyterian Medical Services; RWJF, Robert Wood Johnson Foundation; STEP-HIA; Studying Trail Enhancement Plans - Health Impact Assessment; USFS, US Forest Service.

Table 2

Facilitators, Barriers, and Lessons Learned, According to Issue and Perspective of Partner (Community or University), During VIVA-Step Into Cuba

	Facilitators		Challenges/Barriers		
Issue	**Community**	**University**	**Community**	**University**	**Lessons Learned**
Cultivating a community-university partnership	Passion about & investment in plans; knowledge of culture & political processes	Eagerness to share knowledge & experience through training & technical assistance & to learn, participate, & follow government policies	Buy in to time & effort required to create objectives & plans that can be scientifically assessed & evaluated	Assumption that researchers' way is best; difficulty keeping up with community ideas & plans; frustration with bureaucracy	**Respect for vision & needs of partners.** Integrate community vision & perspectives with research & evaluation protocols before beginning study & frequently throughout study
Recognizing leadership	Many natural leaders who can be cultivated	Recognition that community members have broad interests, knowledge, passions, & expertise & integrate those into work	Difficulty discovering best way to contribute to project; attempts to benefit individuals or certain groups	Fixation on evidence-based practices that hamper creation & adaption of flexible models that meet community needs & obtain desired outcomes	**Resource-poor communities are not poor in human resources**. All contributors (paid, volunteers, champions) must be recognized & valued; strive to obtain balance between competing objectives
Promoting volunteerism	Desire to contribute to positive, lasting change in community	Involvement of community members in research (paid positions, if possible, & when expertise is required)	Overcoming social norms of not volunteering & the perception that involvement is not productive & other demands for time	Wariness about creating or exacerbating tensions between groups; concern that volunteers may be used excessively or left out in some situations	**Volunteerism & community participation builds over time**. Highlight mutually beneficial aspects of volunteering; participation is validated & increased in a feedback loop through positive social experiences; be realistic & upfront about project needs & expectations; recognize volunteers for their efforts
Encouraging participation by supporting mutually beneficial goals	Diverse groups across community that can contribute to broadly framed goals	Attempts to obtain broad community representation	Different motivations for involvement of individuals & groups; diversity in ethnicity/race, socioeconomic status, & length of community residence	Long-standing existence of divisions within community that may need be addressed	**Frame research around broadly framed common goals & desired outcomes.** Motivate participation by focusing on equity & neutrality; highlight mutually beneficial outcomes; use socioecological model to enable inclusion of diverse motivations for involvement, goals, & passions
Working within the coalition structure	Informality, flexibility, & inclusivity to allow approach to evolve & best fit immediate needs & enable positive outcomes	Formal leadership; development of agendas, minutes, time for researchers on agendas; nimbleness & high levels of responsiveness to community ideas &	Competing priorities that make it difficult to attend meetings	Finding meeting times & places convenient for community members	**Encourage inclusivity & flexibility within structured model.** Formality & rigidity are not conducive to positive, long-term, sustainable outcomes; develop mechanisms for reaching

Issue	Facilitators		Challenges/Barriers		Lessons Learned
	Community	University	Community	University	
		plans			partners who cannot regularly attend meetings
Creating synergy	Perception of the coalition as a place to bring ideas	Coalition & community members become knowledgeable, accessible resources & contributors to research & its dissemination beyond community	Loss of funding & key staff members	Funding insecurity, staff changes, & changes in local government; lack of understanding of or acting on reciprocity in community-university relationships	**Become a resource for community projects.** Celebrate & leverage small successes; seek ways to support community efforts without biasing research outcomes