# Synthesizing Evidence-Based Strategies and Community-Engaged Research: A Model to Address Social Determinants of Health

Lisa Jane Hardy, PhD[a]
Kyle David Bohan, MPH[b,c]
Robert Talbot Trotter II, PhD[a]

## ABSTRACT

Addressing social determinants of health (SDH) requires multileveled intervention designs. Increasingly, organizations and coalitions face pressure to use evidence-based strategies when seeking to address SDH. Evidence-based strategies, however, must be locally relevant and integrated into existing systems to function efficiently. We propose the incorporation of an effective rapid assessment technique, Rapid Assessment, Response, and Evaluation (RARE), with evidence-based strategies, findings, and recommendations embedded in community-engaged research to increase the likelihood of success in addressing SDH. Our RARE project—a partnership among a community health center, a nonprofit funding agency, and academic faculty researchers—resulted in community- and policy-level interventions for the prevention of childhood obesity in a Southwestern U.S. city.

[a]Northern Arizona University, Department of Anthropology, Flagstaff, AZ

[b]University of Arizona, Mel & Enid Zuckerman College of Public Health, Tucson, AZ

[c]A.T. Still University, Mesa, AZ

Address correspondence to: Lisa Jane Hardy, PhD, Northern Arizona University, Department of Anthropology, PO Box 6023, Flagstaff, AZ 86011; tel. 928-523-0735; fax 928-523-9135; e-mail <lisa.j.hardy@nau.edu>.

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The best approaches to modern public health concerns often involve looking beyond standardized or evidence-based behavioral change intervention models and targeting the social determinants of health (SDH) at the root of the problem.[1] The concept of SDH is derived from the principle that substantial health inequalities are caused by the unequal distribution of power, income, goods, and services within social, political, and economic structural frameworks.[2] Increasingly, funding agencies are requiring the use of evidence-based strategies (i.e., those that have shown measurable success) for intervention and evaluation. Effectively addressing SDH, however, calls for in-depth assessment and multileveled intervention plans that are both community engaged[3–5] and evidence based.[6,7]

Health centers and public health agencies frequently struggle with designing programs to advance community health and address the root causes or social determinants contributing to disease burden. This struggle is exacerbated by limited timelines and available fiscal resources.[8,9] Health-focused partners are turning toward community-centered approaches such as community-based participatory research to increase the likelihood that projects will result in more in-depth findings and successful policy- and community-level change.[10–13] Urban change researchers have identified the disruptive nature of community projects that interrupt or destroy existing local networks.[14,15] The insights from the negative consequences of community development corporations and other entities highlight the need for community engagement to avoid these same risks in projects that focus on health. Purely academic or public health agency-initiated interventions potentially miss the complexity of local social determinants and run the risk of damaging local networks in their efforts to transpose new externally defined projects on local communities. We argue that the result of using evidence-based strategies in the absence of locally rooted assessment and participation may lead to further reinforcement of inequities among those people who are most at risk. Community-engaged assessment and strategy development, however, increase the likelihood that health-focused partnerships will address the causes of health disparities while also bolstering, rather than damaging, local networks and existing safety-net programs and projects.

## PURPOSE

An increase in attention and funding toward obesity prevention provides an example of the need for multileveled interventions to address SDH. There is an established link between socioeconomic status and health on a local level.[2,16] Researchers have associated factors such as household income and the social implications of race/ethnicity with increased prevalence of childhood obesity.[17] Furthermore, food access,[18] perceived neighborhood safety,[19] and quality child care[20] are all components of the socioeconomic paradigm related to obesity and health status. These variables change in each local setting, however, and must be understood in that context. Programs that seek to impact obesity and other health disparities require community engagement to increase the likelihood of sustainability and success.

In this article, we present a partnership among a federally funded community health center, a nonprofit funding agency, and academic faculty researchers that swiftly incorporated community engagement and evidence-based strategies in the project design. Our project design was based on a U.S. Department of Health and Human Services/National Institutes of Health/Centers for Disease Control and Prevention assessment and action model, Rapid Assessment, Response, and Evaluation (RARE).[21–23] RARE is a time-efficient (six- to eight-week) community-engaged research process to address SDH. Our project, now known as *Hermosa Vida* (A Beautiful Life), incorporated RARE into the development of a coalition consisting of multisectoral partners to enhance the health status of a community that demonstrated deficient health equity.

## METHODS

A group of partners conceived *Hermosa Vida* in early 2010 as a response to an urgent call to action leveraged by a local pediatrician who, at the time, had observed a sharp incline in obesity diagnoses at well-child visits. A research team confirmed this observation during the planning and research phase of the project, documenting overweight and obese (body mass index [BMI] for age ≥85th percentile) measurements for up to 45% of children at the local elementary school.[24] Though we use the clinical term "obesity" throughout this article, our research indicated a need for a focus on comorbid conditions instead of weight to communicate appropriately beyond clinic walls. The use of the term obesity may result in miscommunication on the community level. While BMI is not always the most accurate measurement of obesity and comorbid conditions,[25] the high incidence of these measurements along with the experience of local pediatricians pointed to a serious need for interventions.

**Study design**

Upon identifying the need for intervention, partners applied for and obtained a nine-month planning and research grant to assess the local environment, including a broad view of the SDH that were contributing to obesity risk for local children. Researchers began the RARE process by broadening the focus from the stigmatized and deductive focus of obesity to lifestyles in general to account for the complex landscape that gives way to health disparities that are peripherally but not always directly related to obesity. At an early meeting with a local neighborhood association youth group, young people engaged in a discussion about the need for a positive association with the project—instead of a focus on problems and stigmatized conditions—to increase its success in the neighborhood. Members of the group chose the project name "A Beautiful Life"—*Hermosa Vida*—*Nizhóní Lináá*, incorporating the three most widely spoken languages in the neighborhood: English, Spanish, and Navajo. The project quickly became known simply as *Hermosa Vida*. In addition to the broad focus on SDH, the project also initiated and continues to maintain a widened view of social change and policy. Coalition members have established a shared understanding of policy change as those changes that occur in laws or rules that may, for example, increase access to healthy foods, as well as enhancements in the social environment where people live.[26]

We describe the use of RARE to synthesize evidence-based practices and community-engaged data collection in the design of practical public health strategies. Our RARE project provides an example of how a multidisciplinary partnership can successfully triangulate local knowledge, qualitative and quantitative research results, and available evidence-based strategies to enhance the health equity of a community. The end result of our research and analysis was the development of multileveled strategies to impact SDH through community- and policy-level change.

**Study setting**

We implemented this approach within a community in northern Arizona. The study area is historically known as the most ethnically diverse neighborhood housing the highest number of low-income residents in Flagstaff. According to an analysis of neighborhood-level data using the American Community Survey,[27] measures indicate that 46.7 of the community's 6,700 residents live in some form of poverty and nearly 800 residents live in extreme poverty. Furthermore, about 45% of residents identify themselves as Hispanic or Latino. Among non-Hispanic and Latino residents, 39.2% report that they are American Indian or Alaska Native (Unpublished report. Combrink T. Sunnyside neighborhood analysis of the Census five-year American Community Survey data prepared by Northern Arizona's Arizona Rural Policy Institute, 2011).

While this project has proven to be a successful intervention in a low-income neighborhood, we suggest that researchers and their partners could implement this community-engaged model in a variety of settings to address local SDH. The overall purpose of the design is to draw on the localization of research results to develop the most appropriate community-based strategies. Therefore, the SDH (e.g., food access and housing equality) that are of greatest concern to people in a designated project are those SDH that will rise to the top through the engaged assessment process.

**Steering committee**

The development of research and methods for *Hermosa Vida* began by assembling a steering committee including health-care providers, public health professionals, local community leaders, and residents of the neighborhood. As a result of collaborative decision-making, the planning and research phase of *Hermosa Vida* incorporated data collection and analysis from a team of RARE-trained community researchers who completed several data-collection strategies, a data subcommittee whose members compiled evidence-based practices, and a public health graduate student who compiled existing (secondary) local data.

**Data collection**

RARE provides training and a set of tools designed for rapid use and analysis. Originally designed to investigate the spread of human immunodeficiency virus/acquired immunodeficiency syndrome in cities around the world, RARE results in the development of practical strategies to address risk in vulnerable populations.[21–23] A typical RARE-style project begins with a lead researcher (or researchers) who identifies and recruits people within a local population who have knowledge and trust within that community (called "community experts") to interview for paid researcher positions. These researchers then participate in an intensive three- to five-day training where they learn about different assessment tools, including interviews, focus groups, surveys, and other research methods. In the following weeks, the researchers engage both in data collection (through the development and revision of research tools) and analysis (through half- or whole-day meetings where they use analysis tools to quantify and measure their findings). In the final week of RARE, researchers work with research leads to

use matrices and tables designed to identify practical strategies to address identified health needs, draw on existing resources, and work within existing networks to enhance rather than disrupt existing community projects run by organizations such as neighborhood associations. These teams of community insiders and academic researchers have the opportunity to identify strategies for implementation that include plans on how to continue community engagement throughout the duration of sustainable interventions, such as the development of coalitions. RARE allows community members to address health problems quickly and practically in response to policy changes or to obtain funding for programmatic strategies. Our project drew on the tools of RARE while also maintaining the flexibility to create a project that was locally driven and project specific.

**Community researchers**

To implement RARE for *Hermosa Vida*, an anthropologist and community organizer identified, interviewed, and hired five local community members to become researchers, following current standards for community-engaged and community-based research.[4,21–23] Project leads and the project community organizer selected community researchers based on their expertise as insiders and their position as people who were enmeshed in local networks of trust within a neighborhood of study. Community researchers represented different ages, races/ethnicities, backgrounds, and experiences, which enhanced the discussion and analysis of research findings. Two anthropologists conducted a four-day training session with community researchers, incorporating their knowledge and experience in decision-making prior to and throughout the assessment process.

Community researchers identified groups of people who would be targeted for recruitment in research and selected locally appropriate methods from the RARE toolkit. The team selected surveys, focus groups, semi-structured interviews, mapping activities, and observations as assessment tools. Community researchers led the assessment, but the anthropologist assisted in training, collaboration, and guidance. Each week, the RARE team (i.e., the community researchers, anthropologist, and public health graduate student) met for one half- to whole-day session to develop new tools, revise in-progress tools, and participate in ongoing data analyses. Team members conducted an iterative process of theme analysis of incoming data, including interview notes and partial transcripts, surveys, maps, photographs, and community researcher field notes. Qualitative analysis focused on identifying the local determinants of health consisted of pinpointing local barriers to optimal health. Through this structured process, local determinants emerged inductively from the data, also assisting in the ongoing evaluation of the saliency of such findings.[28–30]

**Data subcommittee**

Simultaneous to the RARE process, a separate group worked to collect evidence-based practice literature. This group acted as a subcommittee under the umbrella of a larger *Hermosa Vida* steering committee. Active members of the data subcommittee included a pediatrician, an orthopedic surgeon who was active in a statewide obesity prevention effort, a medical director with expertise in public health and health policy, a public health graduate student, a public health outreach director, and two members of the local health department with expertise in nutrition—all with a vested interest in the neighborhood of study. Committee members independently conducted research on evidence-based practices, relying heavily on resources such as Cochrane Reviews[31] and the *Morbidity and Mortality Weekly Report/ Recommendations and Reports*[32] specific to childhood obesity. Members uploaded relevant academic and news articles to a shared intranet portal. The subcommittee met biweekly to discuss trends in the literature and coalition projects designed with similar goals and target populations that had demonstrable success through a decision model to help project partners prioritize recommendations and results.

**Secondary data collection**

A graduate student in public health identified and collected secondary data sources within the neighborhood and city of study. This researcher collected BMI data from local school nurses, geographic information systems-based mapping of food and recreation accessibility, census demographics, income and employment data, educational attainment, housing quality indices, availability of quality child care, and crime statistics—all providing a valuable analysis of the health status and accompanying social determinants within the community. The researcher compared quantitative measures with similar measures within the greater city of study, state, and nation. The purpose of comparison was twofold: (*1*) to inform project planners of the social determinants that may need to be addressed through the forthcoming intervention and (*2*) to convey the magnitude of the socioeconomic disparity to the funding agency.

**RARE triangulation process**

At the conclusion of the eight-week data-collection process, the team used a tool developed from the RARE finding-recommendation-action matrix (Figure) to analyze all three datasets in a multiphased process of strategy selection. The group added two columns to the RARE tool, including effectiveness measured through evidence-based strategies and in-progress neighborhood initiatives. During data collection, there was an intentional separation between the RARE community researchers and the data subcommittee. This separation allowed community researchers to analyze data carefully with minimal bias that may have come from previous exposure to evidence-based strategies. The separation also allowed the subcommittee to collect evidence-based strategy literature without guidance from the findings of the local research. There was not a separation between the public health graduate student and the community researchers and the data subcommittee, however, as this researcher acquired RARE training and used information from both sources to guide his selection of secondary quantitative data. When it became clear, for example, that residents worried about crime in the neighborhood of study—thus inhibiting their use of parks—the researcher obtained crime statistics to further understand neighborhood dynamics.

Once data collection was complete, the group of community researchers met several times to discuss and organize their findings as outlined in the RARE protocol. The researchers used a simple matrix to record themes and continued an iterative process of theme analysis while recording the incidence of data related to each theme through interviews, focus groups, surveys, and/or observations. Once community researchers completed this phase of analysis, they removed themes that were not well supported by data collection.

Through brainstorming sessions using the revised finding-recommendation-action matrix, the team developed theme-specific ideas for community interventions. During this process, those community researchers who were neighborhood and/or city leaders (i.e., community insiders) aided the team in contextualizing project ideas in existing programming. The project partnerships, for example, facilitated the co-location of an obesity clinic inside a local school with the intent of removing barriers to care, such as lack of transportation. The recreation department also worked with the school district to assist with directed physical activities during existing after-school programs. The team also eliminated or revised strategies when it became clear these efforts were already underway through the leadership of another local organization. Strategies were either removed altogether or modified to reinforce and build upon the existing practices, helping with the community engagement of the project by supporting existing assets and responding to previously identified needs.

Once community researchers edited their list of strategies, they brought the list to the data subcommittee. Members of the data subcommittee compared each strategy with evidence-based practices and prioritized strategies that had shown success in similar projects elsewhere. The team then further eliminated strategies by identifying where there was or would be support to develop and continue programs, and where the resources of a grant application could cover the cost of implementation. Nearly all of the selected strategies that originated with the analysis of community research were compared with local data and evidence-based practices. The one exception to this process was the development of a policy coalition. Interview and survey participants recognized policy changes as a key process to achieving overall wellness; however, few participants pointed to a common understanding of "policy" or identified the development of a policy coalition as a goal. The idea for a policy coalition emerged out of local data analyses and in response to recommendations that obesity prevention and wellness projects are most effective when they include upstream interventions that operate at the policy level or primary prevention approaches focused on changes in local policy and ordinance. With a focus on policy as a target for intervention, the plan for the execution of a policy coalition centered on the development of a community-based coalition that could operate on its own as a continuation of the community-engaged roots of the project.

The assessment concluded with a report outlining the assessment, as well as a list of suggested strategies.[5] Researchers designed the report specifically for use by community groups that intended to apply for funding for additional strategies and around continued development in identified areas. Researchers released the report within six months of completing the assessment.

## OUTCOMES

*Hermosa Vida* research and planning resulted in the selection of multiple strategies for enhancing the safety net and addressing the SDH in one U.S. city. The community health center (i.e., the fiscal agent and lead organization) and project partners collaboratively wrote and submitted a follow-up grant and received funds for a three-year coalition-based project to implement the selected strategies. Project staff and

**Figure. Example of an adapted finding-recommendation-action matrix[a] to combat obesity in a Southwestern U.S. city in 2010[b]**

| *Barriers to healthy living: findings* | *Recommendations* | *Target audience* | *Action plan objectives* | *Evaluation/measure of success* | *EBP recommendations* | *In-progress initiatives* | *Include in grant proposal?* |
|---|---|---|---|---|---|---|---|
| • Residents have knowledge of healthy practices but report insufficient time and/or financial resources. | • After-school community cooking and healthy-eating activities<br>• Structured recess | • Families who encounter financial and temporal barriers to participating in healthy activities | • Create plan with local school to implement "family fun" healthy-eating and cooking nights.<br>• Implement structured recess activities. | • Event attendance<br>• Satisfaction and self-reported activity changes<br>• Food literacy<br>• Physical fitness | • EBPs indicate correlation between structured recess activities and improvements in fitness and other wellness measures.[c,d]<br>• EBPs show importance of including caregivers in eating behavior interventions.[e] | None | Yes |
| • Access to healthy food<br>• Difficulty with transportation to stores on a regular basis<br>• No small markets with fresh produce within walking distance | • Increase access to healthy food by making fresh and healthy produce available to families on a regular basis. | • People with little access to healthy foods | • Form partnership with local CSA initiative to provide produce at no or low cost on weekly basis at trusted community center.<br>• Support and expand school garden. | • Number of produce distributions<br>• Repeat customers<br>• Surveys or other measures of produce consumption/changes in consumption habits | • EBPs show success in increasing fruit and vegetable consumption through accessible produce distribution and gardening.[f–k] | Currently no CSA produce distribution; however, there is an existing school garden | Yes |

*continued on p. 74*

**Figure (continued). Example of an adapted finding-recommendation-action matrix[a] to combat obesity in a Southwestern U.S. city in 2010[b]**

| *Barriers to healthy living: findings* | *Recommendations* | *Target audience* | *Action plan objectives* | *Evaluation/measure of success* | *EBP recommendations* | *In-progress initiatives* | *Include in grant proposal?* |
|---|---|---|---|---|---|---|---|
| • Lack of opportunity for well-paid work<br>• Long working hours at low pay for caregivers results in more screen time and limited access to healthy lifestyles for children. | • Increase opportunities for small business startups. | • People who are struggling financially and do not have access to business opportunities | • Small business initiative | • Number of new small businesses<br>• Sustainability of new small businesses<br>• Revenue | • EBPs indicate strong correlation between economic viability and better health outcomes.[l–n] | The neighborhood association is already working with a nonprofit organization to set this initiative in motion in the neighborhood. | No<br><br>Already in progress (though other strategies can support existing initiatives) |

[a]The theme centered on healthy and unhealthy lifestyles, and the goals were to identify and promote existing healthy lifestyles and decrease barriers to healthy living.

[b]Adapted from I-RARE (International Rapid Assessment Response and Evaluation) analysis to action models. Centers for Disease Control and Prevention (US). Analysis of qualitative data from rapid assessment and response studies. Participant's manual. Atlanta: Department of Health and Human Services (US); 2004.

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[n]Virginia Commonwealth University, Center on Human Needs. County health calculator [cited 2013 Feb 13]. Available from: URL: http://countyhealthcalculator.org

EBP = evidence-based practice

CSA = community-supported agriculture

partners received three-year implementation funding in 2011, and selected strategies have begun to show measurable community-wide change.

The triangulation process originally resulted in more than 20 potential strategies, which the team systematically narrowed down to a comprehensive 6–9 multileveled strategy design. The remaining strategies were those that team members deemed to be the most realistic, practical, highly valued, and potentially impactful ideas that were supported by published evidence. Selected strategies included the implementation of structured recess (i.e., organized activities during recess time to help educate and involve students in healthy sports and games) to increase the amount of moderate-to-vigorous physical activity, after-school activities, educational and nutritional family fun nights, a school-based obesity prevention clinic, free produce distribution in partnership with a local community-supported agriculture program, two additional assessments on patient-physician communication and local parks use, and the development of an autonomous wellness-based policy coalition. The plan also included a strategy for community-engaged evaluation implemented by an internal evaluator.

Due to the community-engaged aspect of the project, the implementation of RARE findings included buy-in from local leaders, who were excited about participating in a project that incorporated the longstanding community relationships and progress they had made toward changing their community over time. For example, the process itself effectively addressed SDH by using local assets, providing training and skills to community researchers, and enhancing rather than disrupting local assets and knowledge of the community. Existing leaders and other community members also appreciated the project's design, which intentionally supported activities already in progress or internally identified and prioritized, rather than attempting to transpose evidence-based practices without understanding the priorities of the people who lived in the area of study.

### Limitations

There were a number of potential limitations to the observations developed by this study. Most of the limitations concern the issue of quality-control mechanisms for data collection and analysis. The primary methodological limitations for RARE have been thoroughly identified and answered in the rapid ethnographic assessment methodological literature.[21,33] They generally concern oversampling and subsequent generalizability,[34] systematic representation of all salient cultural constructs,[35,36] and systematic data analysis, rather than anecdotal or biased analysis.[22] Essentially, the methodological design of the *Hermosa Vida* project addresses these limitations. For example, did we talk to the right people (cultural experts sampling design)? Did we ask the right questions (reliability through reviewing to redundancy)? Did we miss anything (reliability through saturation)? Did we correctly represent the observations (validity through our validation feedback loop)? The overall design followed the recommended methodological conditions to mitigate generic threats to data collection and analysis that have been discussed in the public health literature.[22]

## LESSONS LEARNED

We provide this structure for strategy development—drawing on RARE—as a framework for bolstering coalition-based efforts and to meet the need for a more inclusive approach toward strategy development. We suggest that an exclusive focus on evidence-based strategies or a reliance on a single qualitative inquiry both lead to incomplete results and unsuccessful subsequent interventions. RARE allows for a structured process to develop locally appropriate strategies with the incorporation of existing community networks, while also considering lessons learned from evidence-based strategies. In practice, strategies that are locally sound and reflective of evidence-based practices may be more likely to succeed. This model facilitates community involvement in the investigation of health inequalities and the design of appropriate solutions.

The push for evidence-based methodology is strong; however, when the health concern is multifactoral and involves SDH at the local level, the existing evidence may not provide the perfect protocol. Therefore, it is necessary for project planners to triangulate all available information and use evidence-based strategies as a rough guide. The increased likelihood for lasting change is rooted in the fact that community-engaged assessment supports rather than disrupts existing community networks and assets. We found that using existing local trust networks and supporting community momentum can be applied to target health concerns and policy change that is harmonious with local knowledge and ideas already in motion. RARE designs, which incorporate evidence-based practices alongside community-engaged research, provide a foundation and process for understanding how evidence-based practices can be more fully integrated into local contexts while increasing the likelihood for lasting change to address SDH.

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