A participatory evaluation framework in the establishment and implementation of transdisciplinary collaborative centers for health disparities research

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\textbf{A B S T R A C T}

\textbf{Objective:} We describe the formulation and implementation of a participatory evaluation plan for three Transdisciplinary Collaborative Centers for Health Disparities Research funded by the National Institute of Minority Health and Health Disparities.

\textbf{Methods:} Although different in scope of work, all three centers share a common goal of establishing sustainable centers in health disparities science in three priority areas – social determinants of health, men’s health research, and health policy research.

\textbf{Results:} The logic model guides the process, impact, and outcome evaluation. Emphasis is placed on process evaluation in order to establish a “blue print” that can guide other efforts as well as assure that activities are being implemented as planned.

\textbf{Conclusion:} We have learned three major lessons in this process: (1) Significant engagement, participation, and commitment of all involved is critical for the evaluation process; (2) Having a “roadmap” (logic model) and “directions” (evaluation worksheets) are instrumental in getting members from different backgrounds to follow the same path; and (3) Participation of the evaluator in the leadership and core meetings facilitates continuous feedback.

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1. Introduction

The Minority Health and Health Disparities Research and Education Act of 2000 – Public Law 106–525 – defines health disparity populations as “any group exhibiting significant disparities in the overall rate of disease incidence, prevalence, morbidity, mortality, or survival rates in the population as compared to the health status of the general population” (http://www.nimhd.nih.gov/documents/Public%20Law%20106-525.pdf Accessed January 2016). This Public Law also established the National Institute on Minority Health and Health Disparities (NIMHD), which was designated as ‘the focal point for coordinating minority health and health disparities research at the National Institutes of Health’ (http://www.nih.gov/about/nimhdHistory.html Accessed January 2016). In the past 15 years, major strides have been made to advance health disparities as a science such as the NIMHD becoming an Institute, the Agency for Healthcare Research and Quality issuing the National Healthcare Quality & Disparities Report, (http://nhqnet.ahrq.gov/ihqdr Accessed January 2016) and other initiatives. However, recent data have shown that health disparities persist (http://www.cdc.gov/nchs/data/hus/hus15.pdf Accessed July 2016) and, in some instances, have increased (Hunt & Balachandran, 2015; Mukherjee et al., 2010; Murphy, Harlan, Warren, & Geiger, 2015).

Besides the biological and genetic factors that contribute to the health of individuals, communities, and nations, there is a complex interplay of environmental, cultural, and social factors that should be taken into account, and, in many instances, are the major contributors to health disparities (Schulz & Northridge, 2004). This is a multi-faceted problem that must be dealt with from different perspectives, and using a transdisciplinary framework to address health disparities requires strong collaborations between researchers and community organizations, service providers and systems, government agencies, and other stakeholders. On one hand, transdisciplinary collaborations provide opportunities for institutions to achieve a broader reach, and the opportunity for applied research that is uniquely responsive to specific populations

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(Simmons et al., 2015). On the other hand, it requires a paradigm shift and a transformational approach through which researchers and community members must “retool” themselves to work together. In contrast with multidisciplinary teams where each stakeholder is responsible for their own piece within his/her expertise that comes together with the other pieces as a product, transdisciplinary work involves working together and learning from each other throughout the process. Dankwa-Mullan and colleagues proposed six elements for this “transformational approach”: (1) examination of the current institutional and societal culture; (2) creation of an idea with a vision or philosophical idea; (3) development of the high risk idea; (4) identification of the structural, systematic, or process changes that are needed with a focus on innovation; (5) testing and implementation of the idea; and (6) institutionalization of the new idea (Dankwa-Mullan et al., 2010).


Evaluation is a key component to building and sustaining partnerships, such as the TCCs. Benefits of evaluating partnerships include monitoring progress, increasing awareness of resources and capacity building, helping the partnership reach its objectives in an organized manner, and allowing replication by other researchers, community members, and/or organizations (http://www.cdc.gov/obesity/downloads/partnershipevaluation.pdf, Accessed January 2016). Consistent with the “transformational approach” of these partnerships, the evaluation also must be a participatory process with active engagement of all stakeholders (Scarinci, Johnson, Hardy, Marron, & Partridge, 2009; Crisinha, 2007; Marek, Brock, & Savla, 2015). In recent years, funding agencies have called for a more collaborative approach to research, and Community Empowerment Models (i.e., equal partnerships with sharing of power) are becoming more broadly embraced by public health professionals, allowing researchers to not only identify the goals of a community but to recognize that the community has its own strengths, and, therefore, solutions for health disparities (Forde & Theobald, 2006; Holte-McKenzie, Forde, & Theobald, 2006; Israel et al., 2006).

This paper describes the formulation and implementation of a participatory evaluation plan for three funded TCCs, each addressing one of the priority areas described above. Although different in scope of work and theme, they shared common overarching goals, and the use of Community-Based Participatory Research (CBPR) as their philosophical framework. CBPR is a partnership approach to research that equitably involves community members, organizational representatives, and researchers in all aspects of the research process (Israel et al., 2006).

2. Context

Each TCC is created to involve multiple disciplines and collaborations between researchers, government agencies, and community organizations to conduct research where findings translate into “sustainable individual, community and systems level changes that improve population health” (http://grants.nih.gov/grants/guide/rfa-files/RFA-MD-13-004.html Accessed January 2016). This common goal focuses on three themes: social determinants of health, health policy research, and men’s health research. The Mid-South Transdisciplinary Collaborative Center for Health Disparities Research (Mid-South TCC), aims to reduce the disparities in chronic disease experienced by racial/ethnic minorities by addressing the social determinants that may impact health outcomes (https://www.uab.edu/midsouthtcc/ Accessed January 2016). The Gulf States Health Policy Center Collaborative (Gulf States – HPC) aims to improve health outcomes among minority, low-income, and other vulnerable populations in the Gulf region by conducting innovative health policy research (http://www.uab.edu/collegeofmedicalsciences/hpc/research/gulf-states-health-policy-center Accessed January 2016). The Center for Healthy African American Men through Partnerships (CHAMPs) seeks to address health disparities in conditions affecting African American males, specifically targeting disparities in unintentional and violence-related injuries and chronic diseases in African American males across the life course (http://champs.com Accessed January 2016).

The organizational structure is also similar across TCCs. They all have an Executive and Steering Committee that provide leadership to each initiative, and an Administrative Core that facilitates the coordination and communication necessary for a seamless transdisciplinary inter-institutional partnership. Each Administrative Core has a program director/program manager who is responsible for support and the day-to-day oversight to the partnership. Under the Administrative Core, working groups are organized into specialized cores that provide services to partnership members. All three TCCs have Research, Collaborations and Partnerships cores, and a Pilot Projects Program. The Research Core is primarily responsible for supporting the research and pilot projects as well as monitoring their progress. Similarly the Pilot Projects Program supports the solicitation, funding, implementation, and dissemination of annually pilot projects through each TCC. The Pilot Projects Program for each TCC works closely with the Research Core to monitor the progress of each funded pilot project. The Collaborations and Partnerships Core are primarily responsible for establishing and sustaining partnerships between researchers, community organizations, other NIMHD grantees, and other stakeholders (http://grants.nih.gov/grants/guide/rfa-files/RFA-MD-12-007.html Accessed January 2016). Each TCC also has included additional cores based on the proposed scope of work. For instance, the MidSouth TCC established four additional cores: (1) Social Determinants of Health Core whose responsibility includes providing support for theoretical and methodological expertise and research tools to the partnership; (2) Biostatistics and Study Design Core which provides statistical and research design consultation and support to partnership members; (3) Academic and Community Engagement Core to promote capacity building in the participating communities; and (4) Dissemination Core whose responsibilities include internal and external communication, and dissemination activities. Some of the services provided by these additional cores are embedded in the common
cores for CHAAMPS and Gulf States HPC. For example, CHAAMPS provides community capacity building through the Collaborations and Partnerships Core, and biostatistics and research design services through the Administrative Core. Gulf States HPC chose to include communication and dissemination as a part of the Administrative Core.

The leadership for each core is composed of members across the partnering organizations who work together to develop and implement proposed activities. Most of them meet on a bimonthly basis as a core, monthly with the Executive/Steering Committee, and yearly with the entire partnership.

The evaluation team consists of a Senior Evaluator (10% effort within each partnership) and Program Manager (between 30 and 35% effort within each partnership), both with extensive experience and expertise in program evaluation. The primary role of the Senior Evaluator is to provide oversight for the evaluation activities, and Program Manager is responsible for the day-to-day activities of all evaluation components. The evaluation team is part of all partnership-wide and leadership meetings. They participate in core specific meetings when needed. Feedback on evaluation results as well as identification of evaluation needs is provided on an ongoing basis at these meetings.

3. Evaluation framework

The Logic Model was chosen as the evaluation tool for these partnerships as it clearly outlines the steps of the evaluation process using an approach that is understandable to lay individuals without sacrificing the rigor of the evaluation process. Conrad, Randolph, Kirby and Behbout (1999) Kirby defines the Logic Model as “... a graphic representation of a program that describes the program’s essential components and expected accomplishments and conveys the logical relationship between these components and their outcomes” (Conrad et al., 1999). The Logic Model consists of three major components: available resources (inputs), planned activities and target audience (outputs), and outcomes (short, medium, and long-term outcomes).

For the TCCs, these steps of the Logic Model translate into the following: (1) Strengthening of collaborative relationships between academic and community-based partners to establish a network that will support the proposed research, implementation, and dissemination activities; (2) Needs/assets assessment; (3) Development and implementation of a collaborative research program including full and pilot projects, which will lead to (4) Increased scholarly activities (grants and publications) related to the main theme of the TCC; and (5) Establishment of an effective research consortium to address health disparities in the context of social determinants of health, health policy research, and men’s health research, depending on the focus of each TCC. Fig. 1 illustrates the Logic Model incorporating key components of all three partnerships.

A multi-component collaboration requires a triangulated mixed-method evaluation plan focusing on process, impact, and outcomes using both quantitative and qualitative assessments.

<table>
<thead>
<tr>
<th>INPUTS</th>
<th>Activities</th>
<th>OUTPUTS</th>
<th>Target Audience</th>
<th>Short-term</th>
<th>OUTCOMES</th>
<th>Medium-term</th>
<th>Long-term</th>
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<tbody>
<tr>
<td>Existing partnership among the institutions</td>
<td>Administrative Core</td>
<td>Partnering institutions</td>
<td>Administrative Core</td>
<td>Understanding of the socioeconomic, environmental, behavioral, and biological factors driving and sustaining disparities in African American men’s health, particularly as it relates to unintentional and violence-related injury and chronic diseases (CHAAMPS)</td>
<td>Understanding of the socioeconomic, health-system and environmental policies that interplay and produce disparate chronic disease outcomes in vulnerable populations (Gulf States HPC)</td>
<td>Understanding of the physiological and behavioral pathways through which social factors produce obesity and chronic diseases (Mid-South TCC)</td>
<td>Scholarly activities (grants, publications, and scientific presentations) within the scope of work of each partnership</td>
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<td>Experienced investigators, staff, and partners in all components of the program</td>
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<td>Well-trained independent researchers</td>
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<tr>
<td>Existing partnerships at the targeted communities</td>
<td>Administrative Core</td>
<td>Junior and senior investigators</td>
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<td>Multi-sector coalition/partners</td>
<td>Collaborations &amp; Partnerships Core</td>
<td>Mentors</td>
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<tr>
<td>Fiscal and administrative infrastructure</td>
<td>Pilot Projects Core</td>
<td>Staff</td>
<td>Administrative, logistical, and statistical, evaluation and support provided</td>
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<tr>
<td>Communication infrastructure</td>
<td>Provide support for pilot projects</td>
<td>Regional and national partners</td>
<td>Research/Project Core</td>
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<tr>
<td>Access to data from cohort studies (e.g., PLCO, CARDIA, REGARDS, Study of Aging)</td>
<td>Provide mentoring &amp; career development support to early-stage investigators</td>
<td>Community members and partners</td>
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<tr>
<td>Institutionally leveraged resources (e.g., Biostatistics and Bioinformatics, Bioethics, Recruitment and Retention Shared Facilities)</td>
<td>Collaborations &amp; Partnerships Core</td>
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<tr>
<td>Conduct needs and resources assessment</td>
<td>Dissemination/Diffusion Core</td>
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<tr>
<td>Develop action plan based on results of assessments</td>
<td>Keep members informed</td>
<td>Federal, state, and local agencies</td>
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<tr>
<td>Link academic and community partners</td>
<td>Use research findings to inform policy</td>
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<tr>
<td></td>
<td>Disseminate research findings</td>
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Fig. 1. Logic model – integration of key components common to all three partnerships.
### Table 1: Evaluation Worksheet for the Mid-South Transdisciplinary Collaborative – Research and Pilot Projects Cores (2013 to present)

#### SPECIFIC AIMS:

**Aim 1.** Oversee the implementation of two regional collaborative research sub-projects:

**Aim 2.** Provide research support for Mid-South TCC investigators working in the thematic area of the Consortium and for junior faculty participating in the Pilot Projects Program:

**Sub-aim A.** Provide support in the form of 2-year pilot awards for promising health disparities research especially for those that have the potential to have a transdisciplinary focus.

**Sub-aim B.** Increase the critical mass of scientists in health disparities research by providing support and resources for junior faculty and senior faculty interested in moving their research toward a transdisciplinary focus.

**Sub-aim C.** Mentor junior faculty and develop methodologies for mentoring that can be adapted across the Mid-South Transdisciplinary Collaborative Center on Health Disparities.

**Aim 3.** Facilitate the submission for extramural funding (e.g., R01s, R21s, or R03s) of new SDH-related research projects developed at UAB, JSU, MMC, LSU, partnering HBCUs, and academic institutions throughout the Mid-South region.

**Aim 4.** Integrate multiple sources of expertise in SDH and life-course research, minority health, and health disparities research throughout the region and nationally, to allow for intellectual cross-fertilization and leveraging of resources.

**Note:** Given the similarities in scope of work between the Research and Pilot Projects Core, the leadership merged these cores for the purposes of implementation and cross-fertilization.

#### Abbreviations: RC – Research Core; PPP – Pilot Projects; Numbers in parenthesis under evaluation questions reflect the specific aim listed above.

<table>
<thead>
<tr>
<th>Evaluation Questions</th>
<th>Data Collection Tools</th>
<th>Due Date</th>
<th>Responsibility</th>
<th>Status</th>
<th>Notes</th>
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<tbody>
<tr>
<td><strong>Process Evaluation</strong></td>
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<tr>
<td>(1) Did the RC Leaders meet bimonthly?</td>
<td>Minutes from RC bimonthly meetings</td>
<td>Ongoing</td>
<td>Program Coordinator</td>
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<tr>
<td>(1) Did RC Leaders review the two research projects before its implementation &amp; provide suggestions &amp; support to investigators?</td>
<td>Minutes from RC bimonthly meetings</td>
<td>Ongoing</td>
<td>Program Coordinator</td>
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<tr>
<td>(1)(2) Did the PIs of the research &amp; pilot projects submit a 3-month &amp; 9-month one page progress report to Steering Committee for each year of the project? Did the RC Leaders provide a written feedback to PIs?</td>
<td>Progress reports and written feedback from RC Leaders</td>
<td>3-, 9-, 12-month reports</td>
<td>Project Investigators &amp; RC &amp; PPP Leaders Reminders by Program Coordinator</td>
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<tr>
<td>(1)(2) Did the PIs of the research &amp; pilot projects submit a one-year progress report to the SC and funding agency for each year of the project? Did the RC Leaders provide a written feedback to PIs?</td>
<td>Minutes from the oral presentations with suggestions from Steering Committee and invited ad hoc reviewers</td>
<td>Yearly</td>
<td>Project Investigators &amp; RC &amp; PPP Leaders Reminders by Program Coordinator</td>
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<tr>
<td>(1)(2) Did investigators (including investigators in the research &amp; pilot projects) request support from the technical cores?</td>
<td>Minutes from RC bimonthly meetings</td>
<td>Quarterly</td>
<td>Evaluation Coordinator</td>
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<tr>
<td>(2) Have the PPP leaders established eligibility criteria, selection criteria, and scoring methods to support pilot projects from investigators at the participating institutions and Historically Black Colleges in the region?</td>
<td>Minutes from PPP bimonthly meetings</td>
<td>Ongoing</td>
<td>Program Coordinator</td>
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<tr>
<td>(2) How was the call for proposals for pilot projects disseminated?</td>
<td>Partnership policy &amp; procedures manual</td>
<td>Yearly</td>
<td>Program Coordinator</td>
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<tr>
<td>(2) How many letters of intent were received?</td>
<td>Quarterly activity logs from PPP Leaders</td>
<td>Yearly</td>
<td>Program Coordinator</td>
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<tr>
<td>(2) How many letters of intent were received? Based on these, how many projects were invited to submit a full application? How many were funded? From what institutions? What was the review process?</td>
<td>Progress reports</td>
<td>Yearly</td>
<td>Program Coordinator</td>
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<tr>
<td>(2) In Year 3, were the eligibility criteria expanded to include investigators from National Medical Association/Cobb Institute?</td>
<td>Crowdsourcing reports</td>
<td>Yearly</td>
<td>Program Coordinator</td>
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<tr>
<td>(2) In Year 4, were the eligibility criteria expanded to NMA/Cobb investigators for secondary data analysis?</td>
<td>RC Leaders quarterly activity logs</td>
<td>Quarterly</td>
<td>RC &amp; PPP Leaders</td>
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<tr>
<td>(2) Did all funded pilot projects include a detailed plan on how the proposed work would advance the PI’s toward an independent research career in social determinants of health?</td>
<td>6-month survey &amp; solicitations for scholarly activities</td>
<td>Every 6 months</td>
<td>PPP Leaders</td>
<td></td>
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<tr>
<td>(2) Did the pilot projects lead to larger research projects?</td>
<td>Review of the funded pilot projects</td>
<td>Upon funding</td>
<td>Evaluation Coordinator</td>
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<tr>
<td>(2) Was an individualized career development plan established for each junior faculty member involved in the pilot projects? Were mentor(s) assigned to each faculty member?</td>
<td>Review of the career development plans</td>
<td>Upon funding</td>
<td>Evaluation Coordinator</td>
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</tr>
<tr>
<td>(2) Was the career development plan and activities for junior faculty frequently monitored to assure progress toward achievement of the outlined career goals?</td>
<td>PPP Leaders quarterly activity logs</td>
<td>Quarterly</td>
<td>PPP Leaders</td>
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<tr>
<td>(2) Were seminar series and other workshops organized and implement to assist junior faculty in further developing their knowledge and skills to become independent investigators?</td>
<td>PPP Leaders quarterly activity logs</td>
<td>Quarterly</td>
<td>PPP Leaders</td>
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<tr>
<td>(2) Were junior faculty provided with knowledge and skills on the following: career development plan, developing specific skills</td>
<td>Seminar assessments</td>
<td>At the end of the seminar</td>
<td>PPP Leaders</td>
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</tbody>
</table>
for SDH and health disparities research, learning how to use tools for conducting research on SDH, communication skills, grantsmanship, and responsible conduct of research?

(2) Were mentored junior faculty satisfied with the program overall, didactic activities, and mentoring? Did mentors and junior faculty find that they had a “productive mentorship” experience?

(3) Did investigators (including investigators in the pilot & research projects) request support from the RC regarding additional resources through the collaborating institutions? If so, what type of support was requested? Did they receive the requested support? Were they satisfied with the support received?

(3) Did RC promote retrospective studies using existing cohorts available to the Mid-South TCC (e.g., Jackson Heart Study, CARDIA)? Did RC facilitate the conduct of these studies/papers/grant submissions using these cohorts by providing support to investigators? Were users satisfied with the support received?

Have the RC leaders established eligibility criteria, selection criteria, and scoring methods to support these proposals?

How was the call for proposals disseminated?

How many proposals were received? Based on these, how many projects were funded? From what institutions? What was the review process?

(3) Did RC promote new studies on SDH throughout life course? Did RC facilitate the conduct of these studies by providing support to investigators? What type of support was provided? Were users satisfied with the support received?

(3) Did RC standardize relevant variables to be collected on the same manner across research and pilot projects (e.g., demographics)?

Did the RC promote submission of extramural funding focusing on SDH throughout life course? Did RC facilitate submission by providing support to investigators? What type of support was provided? Were users satisfied with the support received?

Did the RC review and provide feedback these submissions prior to funding submission? If funded, did the RC provide periodic review of all funded projects?

(3) Did RC facilitate interaction of the technical cores with regard to the writing of these proposals and execution of these projects?

Did the RC conduct periodically and as needed “work-in-progress” seminars included in the annual symposium, during which work at various stages of development were shared for exchange of ideas? How often? Who attended? Were attendees satisfied with the seminars?

Did the RC organized and implemented an annual Health Disparities Research Symposium to promote Mid-South TCC research locally and regionally, share knowledge, cultivate interactions, and facilitate networking among scientists?

Were abstract submissions for the annual Health Disparities Research Symposium requested? How were they disseminated? What was the review process? Did all participating institutions submit abstracts? How many abstracts were received? How many were accepted?

Did the annual Health Disparities Research Symposium have a keynote speaker?

Were attendees to the annual Health Disparities Research Symposium satisfied?

(4) Were topics on SDH and life-course research with emphasis on racial/ethnic disparities included in the UAB P60 HDRTP bimonthly videoconferences?

Impact Evaluation

Understanding of physiological and behavioral pathways through which social factors lead to obesity and chronic diseases

Careful examination of outcomes of research and pilot projects, and secondary analysis projects integration of findings 6-month surveys and solicitations for scholarly activities

Review of PubMed to identify directly and indirectly related publications

Tracking of these investigators’ career paths

Scholarly activities (grants, publications, and scientific presentations) in social determinants of health as related to health disparities in obesity and chronic diseases

Independent well-trained independent researchers in social determinants of health

Table 1 (Continued)

<table>
<thead>
<tr>
<th>Evaluation Questions</th>
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<td>for SDH and health disparities research, learning how to use tools for conducting research on SDH, communication skills, grantsmanship, and responsible conduct of research?</td>
<td>6-month surveys</td>
<td>Every 6 months</td>
<td>Evaluation Coordinator</td>
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<tr>
<td>(2) Were mentored junior faculty satisfied with the program overall, didactic activities, and mentoring? Did mentors and junior faculty find that they had a “productive mentorship” experience?</td>
<td>End of program assessment</td>
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<tr>
<td>(3) Did investigators (including investigators in the pilot &amp; research projects) request support from the RC regarding additional resources through the collaborating institutions? If so, what type of support was requested? Did they receive the requested support? Were they satisfied with the support received?</td>
<td>RC and PPP leaders quarterly activity logs</td>
<td>Quarterly</td>
<td>RC/PPP Leaders</td>
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<td>(3) Did RC promote retrospective studies using existing cohorts available to the Mid-South TCC (e.g., Jackson Heart Study, CARDIA)? Did RC facilitate the conduct of these studies/papers/grant submissions using these cohorts by providing support to investigators? Were users satisfied with the support received?</td>
<td>Review of RFA</td>
<td>Upon release</td>
<td>Evaluation Coordinator</td>
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<tr>
<td>(3) Did RC promote new studies on SDH throughout life course? Did RC facilitate the conduct of these studies by providing support to investigators? What type of support was provided? Were users satisfied with the support received?</td>
<td>Minutes from RC bimonthly meeting</td>
<td>Monthly</td>
<td>Program Coordinator</td>
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<td>(3) Did the RC standardize relevant variables to be collected on the same manner across research and pilot projects (e.g., demographics)?</td>
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<tr>
<td>Did the RC promote submission of extramural funding focusing on SDH throughout life course? Did RC facilitate submission by providing support to investigators? What type of support was provided? Were users satisfied with the support received?</td>
<td>RC Leaders Quarterly Reports</td>
<td>Quarterly</td>
<td>Evaluation Coordinator</td>
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<tr>
<td>Did the RC review and provide feedback these submissions prior to funding submission? If funded, did the RC provide periodic review of all funded projects?</td>
<td>Minutes from RC bimonthly meeting</td>
<td>Monthly</td>
<td>Program Coordinator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did RC facilitate interaction of the technical cores with regard to the writing of these proposals and execution of these projects?</td>
<td>Agenda and minutes from “work-in-progress” seminars</td>
<td>At the time of the events</td>
<td>Program Coordinator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did the RC conduct periodically and as needed “work-in-progress” seminars included in the annual symposium, during which work at various stages of development were shared for exchange of ideas? How often? Who attended? Were attendees satisfied with the seminars?</td>
<td>Attendance roster</td>
<td>Satisfaction survey</td>
<td>Evaluation Coordinator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did the RC organized and implemented an annual Health Disparities Research Symposium to promote Mid-South TCC research locally and regionally, share knowledge, cultivate interactions, and facilitate networking among scientists?</td>
<td>Agenda and minutes from “the annual Health Disparities Research Symposium</td>
<td>At the time of the events</td>
<td>Program Coordinator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were abstract submissions for the annual Health Disparities Research Symposium requested? How were they disseminated? What was the review process? Did all participating institutions submit abstracts? How many abstracts were received? How many were accepted?</td>
<td>Abstract submission log</td>
<td></td>
<td>Evaluation Coordinator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did the annual Health Disparities Research Symposium have a keynote speaker?</td>
<td>RC activity log documenting dissemination strategies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were attendees to the annual Health Disparities Research Symposium satisfied?</td>
<td>RC activity log documenting dissemination strategies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Were topics on SDH and life-course research with emphasis on racial/ethnic disparities included in the UAB P60 HDRTP bimonthly videoconferences?</td>
<td>Review of the UAB P60 NIMHD COE videoconference schedule</td>
<td>Yearly</td>
<td>Evaluation Coordinator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact Evaluation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding of physiological and behavioral pathways through which social factors lead to obesity and chronic diseases</td>
<td>Careful examination of outcomes of research and pilot projects, and secondary analysis projects</td>
<td>At completion of projects</td>
<td>RC and PPP Leaders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scholarly activities (grants, publications, and scientific presentations) in social determinants of health as related to health disparities in obesity and chronic diseases</td>
<td>6-month surveys and solicitations for scholarly activities</td>
<td>Every 6 months</td>
<td>Evaluation Coordinator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent well-trained independent researchers in social determinants of health</td>
<td>Tracking of these investigators’ career paths</td>
<td>Yearly</td>
<td>Evaluation Coordinator</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Process evaluation includes the activities that occur during the planning, development, and implementation of the project. Impact evaluation focuses on the immediate effects of program activities that will lead to proposed outcome(s). Outcome evaluation focuses on assessment of the extent to which program objectives and goals are reached at the end of the project.

4. Evaluation implementation

4.1. Process evaluation

Given the nature of these centers, which involves the establishment of an infrastructure, major emphasis has been placed on process evaluation in order to establish a “blue print” that can guide other efforts as well as assurance that activities are being implemented as planned. Below, we outline the major process evaluation strategies:

4.1.1. Establishment of a communication platform

We first established agreed upon communication strategies so all stakeholders are informed of all activities: (1) A SharePoint site was created for each TCC where all materials related to the project are posted and (2) Creation of a listserv to facilitate communication on pressing issues and relevant announcements and requests. The SharePoint is organized by folders related to each core. All stakeholders have access to all the cores with reading privileges, but only core leaders and respective staff have writing privileges to their cores. This facilitates integration of all cores as well as transparency. Evaluation templates are made available to all the partners via this site as well as being a mechanism for submitting information to the evaluation coordinator;

4.1.2. Evaluation worksheets

Although an initial Logic Model and evaluation plan was developed in collaboration with investigators and partners for the grant submissions, they were revised upon receiving the awards, particularly with regard to specific aims and proposed activities. Once these were finalized, we proceeded with the development of detailed overall and core specific evaluation worksheets in collaboration with the principal investigators, core leaders, staff, and partners following a worksheet template that we have used in our previous research projects (Scarinci et al., 2009). Each worksheet details the specific aims of the core, evaluation questions, data collection tools, when and how assessments would take place, and who would be responsible for the respective activities. Their development began with the specific aims and activities proposed by core leaders, investigators, and partners. Based on these, the evaluation team proposed evaluation questions and assessment tools. Once these were defined, core leaders, investigators, partners, and staff completed the timeline and determined who would be responsible for each task. Being a participatory process, finalization of the worksheets varied from several weeks to several months. Most of the delays were due to lack of feasibility of what was proposed on the grant submission, and the need to revise the implementation strategies. Once finalized these evaluation worksheets have served as the “checklist” for core leaders, principal investigators, staff, and partners to assure that proposed activities are being implemented and within the proposed timeframe. These worksheets continue to be a fluid document where completion of tasks is continuously updated, and, at times, revised. Table 1 provides an example of a detailed evaluation worksheet for the Research Core and Pilot Projects Program for one of the partnerships (Mid-South TCC). Overall, investigators and staff have adhered to the evaluation worksheets, and have indicated that they are helpful in “keeping them on track.” In fact, one of the partnerships uses the worksheets as their “checklist” to assess progress and adherence to the timeline. They made improvements to the worksheets to meet their needs by making color coded columns to show pending and completed tasks. Program Managers and Evaluation Program Manager convene regular conference calls to review each worksheet line by line, answering questions and making revisions together. Therefore, with this particular partnership we do not experience the challenges we do with the others with regard to the proposed timeline for completion of each of the tasks.

4.1.3. Activity logs

As an organizational structure, the RFA required the establishment of service cores that vary across the three TCCs as described above. Being service cores, it is important to evaluate provision and receipt of services as well as satisfaction among users. The evaluation team created activity logs, and each core leader was asked to complete the log monthly. However, adherence to these logs was difficult as core leaders expressed that completion of these logs monthly was too taxing. Accordingly, core leaders agreed to complete the logs quarterly. It is a user-friendly template that core leaders can choose to fill out as they perform their activities or provide a list of activities at the end of the quarter. The Evaluation Program Manager uses these logs to assess whether activities outlined in the evaluation worksheet are being completed, and cross-references these with services received (described below). Discrepancies are discussed with core leaders. The primary challenge is that core leaders many times do not log relevant activities that are mentioned by users in the biannual surveys.

4.1.4. Biannual surveys

In order to determine core utilization and satisfaction as well as obtain input on improvements needed for better functioning of the partnerships, questionnaires are administered to all members of the partnerships every six months via Survey Monkey®. Respondents are asked if they are aware of the services provided by each core, if they requested and received a service, how the service was provided (via phone, email, in person) and whether they were satisfied with the services. We also include questions on awareness of roles and responsibilities, whether the communications channels are effective, and suggestions to strengthen the partnerships. Thus far, response rate to these surveys have ranged from 39% to 76%.

Results and recommendations are shared with all members of the partnership in the format of a summary report. They are also
discussed in detail with the leadership. Action items from discussions with the leadership regarding survey results are monitored to ensure that they are implemented. For subsequent 6-month questionnaires, results are compared with the results of previous questionnaires to assure that improvement occurred in areas that were identified as deficient. For example, one project's scores showed that the partnership lacked in knowledge of specific roles of each partner, investigator, and/or staff. As a result, the leadership updated their policy and procedural manual to include roles and responsibilities for each core leader and staff member. Because these are evaluated across years the partnership was able to see an increase in this item to a perfect score.

4.1.5. Partnership engagement survey

Another key factor in evaluating partnerships is partnership engagement. In order to monitor engagement, the evaluation team administers a partnership engagement self-assessment developed by Butterfoss, Goodman, and Wandersman on an annual basis (Butterfoss, Goodman, & Wandersman, 1993). The assessment asks partners to self-evaluate several characteristics of partnership, the first being the partners themselves including lead agency, staff, leaders and members. The second section includes partnership structure, processes, formation, maintenance, and institutionalization. Partnership formation is more stable when the convenor provides management, resources, has knowledge and experience of the process and credibility (Butterfoss & Kegler, 2009). Effectiveness of the partnership is increased when members share in the vision and understand their roles within the partnership. Essential to a successful partnership is communication, which should be open and frequent among members. There should be shared responsibility in decision-making/problem-solving and a perception that the benefits of the partnership outweigh any costs of participation (Roussos & Fawcett, 2000). The annual assessment asks partners to respond to whether they perceive certain characteristics are absent, present, present but limited, do not know or not applicable to the partnership. Answers are scored as percentages in each category, and results are shared with the membership.

4.1.6. Other process evaluation activities

As part of the process evaluation, we also evaluate meetings, capacity building activities, research symposiums, and other group activities in order to get feedback from participants for improvement. For instance, the organization of the annual meetings takes into account evaluation results and suggestions from participants from the prior year. We also monitor dissemination activities, including the number of individuals who opened and read electronic newsletters, articles written for lay audiences, etc. We adapted a Customer Retention Management (CRM) online platform, traditionally used to promote commercial products and track sales contacts. Using this online email marketing platform we built the contents of the electronic newsletter (eNews), and delivered to targeted individual's who have opted-in to receive our messages. The program tracks: delivered messages, opens (each time the message is opened), clicks (of embedded links), and forwards (each time the message is shared with someone else).

To complement this strategy, the eNews automatically feeds social media platforms i.e. Facebook, Twitter, LinkedIn, etc. These posts are tracked separately.

With regard to monitoring of progress on the research and pilot projects, Research Core Leaders meet with the respective investigators at least bimonthly to discuss progress, difficulties, future plans, etc. This is done in a group format with other investigators so they can learn from each other. Additionally, written quarterly 2-page reports are submitted to Research Core Leaders for feedback. These reports address the following: specific aims, progress to date, enrollment goal and enrollment to date, challenges, plans for the remaining fiscal year, and publications/presentations.

4.1.7. Annual progress reports

In addition to immediate feedback following the 6-month surveys, the evaluation team provides annual progress reports. The report is organized by core and specific aim. Accomplishment of each outlined specific aim is reported as completed, in progress, or pending based on data collected from the previously mentioned tools. In order to assure engagement, results are also discussed with the entire membership of each partnership in an open forum at least once a year. This provides the opportunity for partners to discuss accomplishments as well as jointly develop strategies to overcome difficulties related to specific aims that have not been achieved.

4.2. Impact evaluation

The impact evaluation involves tracking the medium-term goals outlined in the Logic Model for each partnership (refer to Fig. 1). During the planning phase, each core, program, and project developed a timeline and milestones for achieving their medium-term goals as described above. The evaluation team monitors and documents achievement of milestones and provides feedback to the investigators, core leaders, staff, and partners. In order to assess scholarly activities, partnership members are requested to provide a list of grants submitted, grants awarded, publications, and presentations once a year. Additionally, the Evaluation Program Manager conducts a PubMed search on their publications, and counts separately the ones directly related (i.e., the partnership funding source was acknowledged in the publication) and the ones indirectly related to each partnership. Advancement of science is assessed through achievement of the proposed outcomes in the research and pilot projects, and integration of findings. Well-trained independent researchers focusing on the priority areas are assessed through their scholarly activities as well as tracking of their career paths (e.g., promotion, leadership roles).

4.3. Outcome evaluation

The ultimate goal for each of the TCCs was to establish sustainable centers in health disparities science focusing on the priority topic areas (i.e., social determinants of health, men's health research, and health policy research).

5. Discussion

The intent of this paper is to provide an overview of an evaluation framework that was developed for three distinct TCCs that had the same ultimate goal of establishing sustainable centers in health disparities science. Although each center is organized differently depending of the make-up of the leadership, partners, and priority areas, the evaluation framework is the same. Most importantly, the framework successfully has met the needs of these partnerships, suggesting that it can be replicated and implemented by other transdisciplinary partnerships. Our participatory evaluation approach is also consistent with the approach used by another TCCs focusing on social determinants of health among American Indians (Collaborative Research Center for American Indian Health). Although their evaluation plan was structured slightly differently, the principles are similar to ours with regard to active engagement of stakeholders, and they found that ongoing evaluation was crucial to addressing concerns in real time, including significant changes such as “change in core
leadership, establishment of greater fiscal management support, and increased efforts to develop relationships at a national level" (Elliott et al., 2016). The expected ultimate impact of using a participatory evaluation approach is that we can capture the true experience of building and maintaining partnerships.

In this process we have learned a number of lessons. Consistent with our previous work in evaluating partnerships among academicians (Wells, Lima, & Meade) and between academicians and community members (Scarinci et al., 2009), we found that significant engagement, participation, and commitment of all involved are critical for the evaluation process. In order to be engaged in a true participatory evaluation, members must “practice what they preach”, and be open to constructive criticism and learning opportunities. It is inevitable that evaluation findings can be interpreted as exposure of weaknesses and/or opportunities, but it also shows individual strengths that others can rely on.

Therefore, before proceeding to this type of evaluation it is critical that the leadership engages in an open dialogue and creates an atmosphere of trust with a focus on the mission rather individual agendas. The evaluation development process can be onerous and tedious for partnership members. Frustration occurs at all levels from investigators who feel that activity logs are not “a good use of their time” to evaluators who do not get the information they need to perform the evaluation activities. In this process, a number of conflicts arise, which are resolved by linking the specific aims to the proposed activities and how they could be documented in the evaluation process.

We have also benefited from working together across the three partnerships and learning from each other. At times, one partnership tried one approach that was unsuccessful, and the other could learn from it and explore other alternatives. Second, having a “roadmap” (Logic Model) and “directions” (evaluation worksheets) have been instrumental in getting members from different backgrounds to follow the same path. In fact, the Program Managers who use the evaluation worksheets as their “checklist” most often completed tasks within the proposed timelines. Third, it has been critical having the evaluator participate in the leadership meetings and core calls and provide ongoing feedback as a third party not directly involved in the day-to-day implementation of the project so changes and adaptations can take place quickly, getting the project back on track.

This paper also has some limitations that deserve mention. First, this is a descriptive paper on the development and implementation of a participatory evaluation framework, and it does not focus on impact as these partnerships are currently being implemented. Therefore, it is not yet known the impact that these TCCs will have in advancing health disparities science. However, it does provide a blue print on how the evaluation framework was organized so it can be replicated by others. Second, while six TCCs have been funded and are currently being implemented, this paper only reflects the evaluation framework of three of them.

6. Lessons learned

Participatory evaluation of transdisciplinary partnerships offers the opportunity to document the steps to be taken in the “transformational approach” needed to advance the science in health disparities. Through this type of evaluation we are able to clearly detail each of the six elements outlined by Dankwa–Mullan and colleagues toward this “transformational approach” by identifying and evaluating the “structural, systematic, and process changes needed” to implement and institutionalize new approaches in health disparities research (Dankwa-Mullan et al., 2010).

Acknowledgments

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References


**Further reading**