

Implementation, Policy and Community Engagement Brief Report

Cite this article: Patten CA, Albertie ML, Chamie CA, Brockman TA, Gorfine M, Nicholas R, Bock MJ, Okamoto JM, Penheiter SG, and Balls-Berry JE (2019) Addressing community health needs through community engagement research advisory boards. *Journal of Clinical and Translational Science* 3: 125–128. doi: [10.1017/cts.2019.366](https://doi.org/10.1017/cts.2019.366)

Received: 3 January 2019

Revised: 28 February 2019

Accepted: 1 March 2019

Keywords:

Community; research; health; needs assessment; program evaluation

Address for correspondence:

C. A. Patten, PhD, Mayo Clinic, Department of Psychiatry and Psychology, 200 First Street SW, BioBusiness Building 5–26, Rochester, MN 55905, USA. Email: patten.christi@mayo.edu

© The Association for Clinical and Translational Science 2019. This is an Open Access article, distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives licence (<https://creativecommons.org/licenses/by-ncnd/4.0/>), which permits noncommercial re-use, distribution, and reproduction in any medium, provided the original work is unaltered and is properly cited. The written permission of Cambridge University Press must be obtained for commercial re-use or in order to create a derivative work.



Addressing community health needs through community engagement research advisory boards

Christi A. Patten^{1,2}, Monica L. Albertie³, Chara A. Chamie⁴, Tabetha A. Brockman², Mary Gorfine⁵, Rosa Nicholas⁶, Martha J. Bock¹, Janet M. Okamoto⁷, Sumedha G. Penheiter⁸ and Joyce E. Balls-Berry²

¹Department of Psychiatry and Psychology, Mayo Clinic, Rochester, MN, USA; ²Center for Clinical and Translational Science, Community Engagement Program, Mayo Clinic, Rochester, MN, USA; ³Office of Health Disparities Research, Mayo Clinic, Jacksonville, FL, USA; ⁴Office of Health Disparities Research, Mayo Clinic, Scottsdale, AZ, USA; ⁵Olmsted County Youth Commission, Rochester, MN, USA; ⁶Clara White Mission, Jacksonville, FL, USA; ⁷Department of Health Sciences Research, Mayo Clinic, Scottsdale, AZ, USA and ⁸Office of Health Disparities Research, Mayo Clinic, Rochester, MN, USA

Abstract

Over 80% of CTSA programs have a community advisory board (CAB). Little is known about how research discussed with CABs aligns with community priorities (bidirectionality). This program evaluation assessed researcher presentations from 2014 to 2018 to the CABs linked to our CTSA at all three sites (Minnesota, Arizona, and Florida) for relevance to local community needs identified in 2013 and/or 2016. From content analysis, of 65 presentations total, 41 (63%) addressed ≥ 1 local health needs (47% Minnesota, 60% Florida, and 80% Arizona). Cross-cutting topics were cancer/cancer prevention (physical activity/obesity/nutrition) and mental health. Results could help to prioritize health outcomes of community-engaged research efforts.

Introduction

Since 2006, the National Institutes of Health (NIH) has supported the Clinical and Translational Science Awards (CTSA) program. CTSA-funded centers are designed to improve public health by developing innovative strategies to translate research findings to clinical and community settings [1]. It takes about 17 years for research evidence to be implemented into clinical practice [2, 3]. The process of translation is best viewed as bidirectional, because successful efforts begin with a clinical or public health observation or identified needs [4]. Therefore, community engagement is a priority for CTSA programs to shorten gaps in the speed of translating research to practice [1, 5]. Community engagement builds on patient and community health priorities and strengths to accelerate improvements in public health and reduce health disparities.

Systematic reviews found that interventions using community engagement methods led to enhancements on a variety of health outcomes and health behaviors among underserved populations [6, 7]. Effective components of community engagement were shared leadership, collaborative partnerships, bidirectional learning, and incorporating community needs in the research [6].

Community advisory boards (CABs) are an effective strategy for CTSA programs to increase community-engaged research [8]. A survey of 48 CTSA grant awardees indicated that 89% had formed a CAB, a consultative service to researchers [9]. CAB members represent various patient and community organizations and groups. Major CAB functions are to provide advice to researchers on substantive aspects of research projects, foster bidirectional conversations and co-learning, along with community-academic partnership facilitation [10, 11].

The structure and functions of CTSA-formed CABs have been described [10, 12], along with self-evaluation or process outcomes such as member satisfaction, improved knowledge and training capacity, and perceived benefits (e.g., networking opportunities) [8,10,13,14]. In addition, researcher experiences associated with consulting with CAB members were reported [12]. Despite the role of CABs in translational research, less is known about how the research for which CABs provide feedback aligns with community health priorities. Ultimately, it is important to demonstrate improved health outcomes with CTSA-based community engagement research strategies [15]. Understanding community health needs and the depth of researchers addressing those areas may help to focus priorities for demonstrating such outcomes. As the first step, in this program evaluation, we assessed the health topics presented by Mayo Clinic researchers to the CABs linked to our CTSA Community Engagement Program at all three sites (Minnesota,

Arizona, and Florida) for relevance to the local community needs identified in the Community Health Needs Assessments.

Methods

Mayo Clinic Center for Clinical and Translational Science

Our CTSA serves all three Mayo Clinic sites in Rochester, Minnesota; Scottsdale/Phoenix, Arizona; and Jacksonville, Florida. The CTSA Community Engagement Program is the resource for all community-engaged research efforts at all three sites. The program works closely with the Office for Health Disparities Research which focuses on supporting health disparities researchers and on recruiting diverse patients into clinical trials. Each site has a CAB that serves both the CTSA Community Engagement Program and the Office of Health Disparities Research.

Community Advisory Boards

The CABs provide a forum for Mayo researchers to present an idea or concept for a research project or obtain feedback on a well-developed project or grant submission. Feedback requested by investigators from the CABs varies and includes recruitment methods, consent processes, study design, project implementation, and dissemination strategies. To facilitate discussion, researchers are asked to provide a brief concept and list of questions for CAB members to consider prior to the meeting. The researcher's presentation is followed by in-depth discussion with the CAB members. While not an expectation, the CABs vary with respect to encouragement or solicitation of research topics aligned with CHNA priorities as described below.

Minnesota. Formed in 2012, this CAB currently comprises 12 diverse members. It is estimated that about 25% of its members represent patients, 42% local community members, and 33% community and public health organizations. The CAB meets monthly, 10 times per year. Meetings are co-chaired by two community members. The CAB promotes community-engaged research but has not solicited research topics focused specifically on the CHNA-identified needs. Mayo staff assist with meeting logistics and attend each meeting. At each meeting, members receive a meal and are offered a \$25 honorarium.

Arizona. Formed in 2013, this CAB currently comprises 17 diverse members. All members have dual roles as local community members and also representing community and public health organizations (e.g., free clinics, federally qualified health centers, tribal or faith-based organizations). The CAB meets on a quarterly basis. Meetings rotate being hosted and led by the CAB members at their site. Members receive a meal at each meeting and, in addition to the structured agenda items, also have a protected time for roundtable sharing for collaboration and project development.

Mayo Clinic staff assist with meeting facilitation. In addition, since the inception of the CAB, the Mayo community engagement liaison staff member has a key role in planning the CAB agenda and encourages Mayo investigators whose research aligns with the CHNA to present. The Arizona CAB is also closely aligned with the cancer center and thus is able to facilitate research on cancer.

Florida. The CAB was founded in 2008 and currently comprises 25 diverse members. About 20% of its members are patient representatives, 30% represent community and public health organizations, and 50% are local community members. The CAB meets monthly, 10 times per year. Meetings are chaired by a community member. Since the first CHNA was conducted, research topics that address community priorities are encouraged. In addition, CAB

members initiate or are involved with research projects that address the CHNA health needs, providing one pathway to promote specific health research. Mayo staff assist with meeting logistics and attend each meeting. Members receive a meal at each meeting and are offered a \$50 honorarium.

Community Health Needs Assessments (CHNAs)

Our local communities in Minnesota, Arizona, and Florida served by Mayo Clinic are diverse, with African American/Black, immigrant (Somali and Hispanic), Native American, Latino/Latina, youth, and gender diverse populations being the primary focus of outreach efforts across the three sites. The CHNAs were conducted in 2013 and 2016 in the counties where Mayo Clinic is located – Olmsted (Minnesota), Maricopa (Arizona), and Duval (Florida). The CHNAs are managed across all non-profit organizations in each county. Methodologies including sampling strategy, survey format, length, and duration differed across site and year [16]. Information was collected using a variety of approaches including key informant interviews, listening sessions/focus groups, town hall meetings, as well as internet, mail, and phone surveys. CAB members contributed to the CHNAs in meaningful ways, including participation on workgroups or steering committees, contributing to survey questions, and interpretation and dissemination of findings.

For coding purposes, CHNA needs identified in 2013 and/or 2016 were grouped into the following categories by site:

Minnesota: (1) injury prevention, (2) immunizations/vaccine preventable diseases such as pertussis or varicella, (3) obesity/physical activity, (4) mental health, (5) financial stress/homelessness, and (6) diabetes.

Arizona: (1) access to care, (2) cancer, (3) cardiovascular disease, (4) chronic disease, (5) homelessness, (6) obesity, and (7) diabetes.

Florida: (1) access to care, (2) communicable diseases, (3) health disparities, (4) maternal and child health, (5) mental health, (6) obesity/nutrition/physical activity, (7) poverty, (8) transportation, (9) preventive health care, (10) build environment, and (11) diabetes.

Researcher Presentations

We examined research presentations to the CABs by a Mayo investigator over approximately a 4-year period, from 2014 to 2018. Inclusive dates were January 2014–May 2018 for the Minnesota CAB; September 2014–April 2018 for the Arizona CAB; and October 2014–March 2018 for the Florida CAB. We excluded CAB updates/business/training or presentations that did not include a research idea or project.

For the Minnesota and Arizona CABs, detailed minutes were available for each meeting through having a note-taker present or audiotaping meetings with subsequent transcription. Minutes were not available for the Florida CAB but a list of research topics presented was available for each meeting.

Analysis

Using content analysis [17], two authors independently coded researcher presentation data separately for each site using pre-determined categories based on the CHNA health topics. Presentations were coded with respect to relevance of the topic (yes/no) to one or more local CHNA needs identified, and, if relevant to the CHNA, the topic(s) were recorded and tabulated. The inter-rater reliability coefficient ($Kappa = 0.90$) suggested a

Table 1. Proportion of health topics presented to the CABs among researcher presentations that addressed local CHNAs by site

% of presentations	Health topic by Mayo Clinic site		
	Minnesota (16 presentations)	Arizona (16 presentations)	Florida (9 presentations)
>40	<ul style="list-style-type: none"> • <i>Obesity/nutrition/physical activity (cancer prevention)</i> 	<ul style="list-style-type: none"> • <i>Cancer</i> • Health care access 	<ul style="list-style-type: none"> • <i>Obesity/nutrition/physical activity (cancer prevention)</i> • Health disparities
33–40	<ul style="list-style-type: none"> • <i>Mental health</i> • Immunizations 		<ul style="list-style-type: none"> • <i>Mental health</i> • Preventive health care/wellness
20–32			<ul style="list-style-type: none"> • Communicable diseases
<20	<ul style="list-style-type: none"> • Financial stress/homelessness • Injury prevention • Diabetes 	<ul style="list-style-type: none"> • Financial stress/homelessness • Chronic diseases • Obesity • Cardiovascular disease • Diabetes 	<ul style="list-style-type: none"> • Maternal and child health • Care access • Poverty • Transportation • Built environment • Diabetes

Text in italics indicates cross-cutting topics (>=2 sites) included in at least one-third of researcher presentations.

high level of agreement between raters [18]. Frequencies were summarized using descriptive statistics.

Results

Across the three CABs, there were a total of 65 research presentations, of which 41 (63%) addressed one or more of the local CHNA needs.

Minnesota. A total of 35 research presentations were made to this CAB, of which 16 (46%) focused on one or more needs identified in their local CHNA. Of these, 44% (7/16) addressed obesity/nutrition/physical activity, 38% (6/16) addressed immunizations/vaccine preventable diseases, and 33% (6/16) addressed mental health. Two (13%) presentations focused on financial stress/homelessness, two (13%) on diabetes, and one (6%) on injury prevention.

Arizona. A total of 20 research presentations were made, of which 16 (80%) addressed one or more needs identified in their local CHNA. Of these, 63% (10/16) addressed cancer, 50% (8/16) addressed care access, and 19% (3/16) addressed homelessness. Two (13%) focused on chronic disease, one (6%) on obesity, one (6%) on cardiovascular disease, and one (6%) on diabetes.

Florida. A total of 15 research presentations were made, of which 9 (60%) addressed one or more local CHNA needs. Of the 15 presentations, 56% (5/9) focused on health disparities, 44% (4/9) on obesity/nutrition/physical activity, and 33% (3/9) on mental health. Three presentations (33%) addressed preventive health care/wellness and two (22%) addressed communicable diseases.

Table 1 shows the proportion of health topics presented to the CABs among researcher presentations that addressed CHNA priorities for each site. “Cross-cutting” health topics (addressed at two sites) were obesity/nutrition/physical activity (44% of presentations) as well as mental health addressed in one-third of presentations. If obesity/physical activity/nutrition is classified as cancer prevention, then cancer is a cross-cutting theme for all three sites.

Discussion

Effective community engagement calls for bidirectional relationships between the researchers and the local community. While it is important to measure long-term health outcomes of CTSA

community engagement efforts [15], understanding community health needs and the depth of researchers addressing those areas may help to focus priorities for demonstrating success. This preliminary program evaluation found that overall nearly two-thirds (63%) of research presentations aligned with local county health needs. The most common CHNA health topics, with at least one-third of researcher presentations, focused on cancer/cancer prevention, mental health, health-care access, health disparities, immunizations/vaccine preventable diseases, and preventive health care/wellness. Building on the strengths of researcher expertise in these areas, there is an opportunity to increase the depth of community-engaged researchers focused on these health topics, as well as those that have received less attention (i.e., care access, financial stress, diabetes) (see Table 1).

Potential strategies to align research with community-identified needs include providing presentations to junior faculty and trainees on community priorities, strategic seed funding, and using CTSA funding to support inter-disciplinary working teams to address community priorities. Another approach is to utilize the CABs to facilitate partnerships between community groups and investigators to co-create studies in response to the needs assessments.

One limitation is that our analysis did not account for annual trends due to the small number of presentations included in this program evaluation. However, our results will serve as a baseline for evaluating future work. Another limitation is that health outcomes from the research presented were not assessed. As an initial step, our goal was to prioritize the health research areas that could subsequently be measured for demonstrating improvements in patient and community health. Each site is planning a CHNA in 2019 and thus some priorities may be reinforced while others may shift. Processes and suggested strategies from this program evaluation may be useful for other CTSA to consider when evaluating health outcome priorities for community-engaged research.

Acknowledgments. We wish to thank the members of our CABs for their time, dedication, involvement, and partnership with Mayo Clinic, which is vital to the development of meaningful research.

Funding. This program evaluation was made possible by CTSA Grant Number UL1 TR02377 from the National Center for Advancing Translational Sciences (NCATS), a component of the NIH. Its contents are solely the responsibility of the authors and do not necessarily represent the official view of NIH.

Disclosures. The authors have no conflicts of interest to declare.

References

1. **Institute of Medicine.** *The CTSA Program at NIH: Opportunities for Advancing Clinical and Translational Research.* Washington, DC: The National Academies Press, 2013.
2. **Balas EA.** From appropriate care to evidence-based medicine. *Pediatric Annals* 1998; **27**: 581–584.
3. **Morris ZS, Wooding S, Grant J.** The answer is 17 years, what is the question: understanding time lags in translational research. *Journal of the Royal Society of Medicine* 2011; **104**: 510–520.
4. **Austin CP.** Translating translation. *Nature Reviews Drug Discovery* 2018; **17**: 455–456.
5. **CTSA Community Engagement Key Function Committee.** *Principles of Community Engagement.* 2nd ed. Bethesda, MD: NIH; 2011.
6. **Cyril S, et al.** Exploring the role of community engagement in improving the health of disadvantaged populations: a systematic review. *Global Health Action* 2015; **8**: 29842.
7. **O'Mara-Eves A, et al.** *Community Engagement to Reduce Inequalities in Health: A Systematic Review, Meta-Analysis And Economic Analysis.* Southampton: NIHR Journals Library; 2013.
8. **Newman SD, et al.** Community advisory boards in community-based participatory research: a synthesis of best processes. *Preventing Chronic Disease* 2011; **8**: A70.
9. **Wilkins CH, et al.** Community representatives' involvement in clinical and translational science awardee activities. *Clinical and Translational Science* 2013; **6**: 292–296.
10. **Matthews AK, et al.** A community engagement advisory board as a strategy to improve research engagement and build institutional capacity for community-engaged research. *Journal of Clinical and Translational Science* 2018; **2**: 66–72.
11. **Matthews AK, et al.** Evaluation of 3 approaches for increasing patient engagement in clinical research: feedback from a community engagement advisory board. *Journal of Clinical and Translational Science* 2018; **2**: 14–19.
12. **Matthews AK, et al.** Development, implementation, and evaluation of a community engagement advisory board: strategies for maximizing success. *Journal of Clinical and Translational Science* 2018; **2**: 8–13.
13. **Cramer ME, et al.** Community advisory board members' perspectives regarding opportunities and challenges of research collaboration. *Western Journal of Nursing Research* 2018; **40**: 1032–1048.
14. **Halladay JR, et al.** Community advisory boards guiding engaged research efforts within a clinical translational sciences award: key contextual factors explored. *Progress in Community Health Partnerships* 2017; **11**: 367–377.
15. **Wallerstein N, Duran B.** Community-based participatory research contributions to intervention research: the intersection of science and practice to improve health equity. *American Journal of Public Health* 2010; **100**(Suppl 1): S40–S46.
16. **Mayo Clinic.** *Community health needs assessment.* Retrieved from <http://communityengagement.mayoclinic.org/wp-content/uploads/2017/09/Community-health-needs-assessment-Dotorg-December-2016-final.pdf>, 2016, accessed February 25, 2019.
17. **Krippendorff KH.** *Content Analysis: An Introduction to its Methodology.* 3rd ed. Thousand Oaks, CA: Sage Publications, Inc.; 2013.
18. **Cohen J.** A coefficient of agreement for nominal scales. *Educational and Psychological Measurement* 1960; **20**: 37–46.