Mi Gente, Nuestra Salud: Protocol for a People's Movement for Health Ownership

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ABSTRACT

Background: Community-based participatory research (CBPR) is an increasingly recognized approach to address health inequities. Although in CBPR all processes occur within the community context, its diagrammatic model places the intervention/research outside of the community rather than conceptualizing it as an event in a complex web of system components.

Objectives: (1) To introduce a Systems-Oriented Community Ownership conceptual framework that integrates a systems perspective with CBPR; and 2) to describe an application of this framework in the form of the Mi Gente, Nuestra Salud (MGNS) initiative, a research-based, action-oriented collaboration between Cal Poly investigators and community partners in Santa Maria and Guadalupe, CA.

Methods: We conducted a stocktake of community assets and partnerships in Santa Maria and Guadalupe, among California's poorest and most medically underserved cities; created marketing materials; launched the initiative in December 2020; and collected survey and interview data on community health concerns. An Advisory Board guides direction of the work. Activities are intended to affect partnerships (who is involved in actions and decisions) and processes (what actions will be taken), as well as resources (e.g., building human and social capital by changing narratives of local, historically rooted power dynamics and offering peer learning opportunities on advocacy and health care interactions). Implementation challenges within this framework are also discussed.

Conclusions: By de-centering specific interventions and conceptualizing them as single events in a complex web, our System-Oriented Community Ownership model brings the focus back to

the system itself, and to system-based processes and solutions, while still guided by CBPR principles.

KEYWORDS: Community-based participatory research; community health partnerships; community health research; systems science

INTRODUCTION

Health inequity is a major problem in the US. National efforts to combat it include Healthy People 2030[1] and programs targeting low-income populations, such as WIC[2] and free clinics.[3] In California, elected officials have expanded access to public health insurance (Medi-Cal)[4] and established the office of California Surgeon General.[5] Initiatives such as Let's Get Healthy California[6] emphasize inequities in healthcare access and health outcomes.

National and state programs are important commitments but do not eliminate structural barriers and root causes of inequities.[7] Segregation has fed income inequality and inequitable access to education and healthy living environments. Institutional racism has criminalized people of color and socially disadvantaged populations and restricts access to employment, housing, healthcare, education, and opportunities for political representation. Colonization has coerced Indigenous peoples to depend on state-sponsored health programs and disconnected them from traditional systems of sovereignty that promote good health in concert with the land and environment.[8, 9] Overall, these historically rooted, institutional barriers have excluded people of color from positions of power and from decision-making processes that shape community health. They also limit the success of national and state level initiatives implemented at the local level, where the most socioeconomically disadvantaged populations remain the most disconnected from resources essential for maintaining health.

Efforts to address racism and other biases in healthcare settings include cultural literacy and implicit bias trainings. However, while some studies find a short-term change in attitudes, no interventions have shown long term reductions in implicit bias or sustained and meaningful changes in behavior.[10-12] There is a clear need for system-oriented approaches that connect

underserved communities to resources, integrate them into decision-making processes, and coordinate strategies to produce meaningful changes in health disparities.

OBJECTIVES

The objectives of this article are to: 1) introduce a novel Systems-Oriented Community Ownership conceptual framework that integrates a systems-oriented perspective with a community-based participatory research approach; and 2) describe an application of this framework in the form of the Mi Gente, Nuestra Salud (MGNS) initiative, a research-based, action-oriented collaboration between Cal Poly investigators and community partners in Santa Maria and Guadalupe, CA.

THEORY AND METHODS

Community-based participatory research

Community-based participatory research (CBPR) has, at its foundation, collaboration with community partners to conduct research and take action towards improving community health and reducing health inequities.[13] The CBPR conceptual model (**Figure 1**) proposes that *contexts* provide a foundation for group dynamics, including *partnership* between researchers and the community, which informs *research and intervention designs*, which in turn contribute to *outcomes* including system and capacity changes and improved health.[14-17] In CBPR, community input is a primary source of knowledge production for identifying community needs and assets,[18, 19] with many interventions focused on capacity-building – for example, supporting leadership, mobilizing resources, increasing workforce skills, and creating and maintaining strong partnerships. Quasi-experimental studies have demonstrated effectiveness of

CBPR approaches in changing behaviors and reducing chronic diseases in some communities.[20-22]

Although in CBPR all processes occur within the context of the community, the diagrammatic model (Figure 1) centers the intervention and research, which are considered separate from the community system. This also serves to center institutionalized research practices, erasing the expertise, knowledge, and intellectual traditions held within communities.[23, 24] Transformative perspectives are needed that tackle structural hierarchies that produce health inequities by building from the traditions and strengths of underserved groups, including the diverse and sometimes competing perspectives of directly affected communities.[9]

Integration of Systems Thinking with CBPR

Conceptual integration

Systems science is a useful, complementary approach to CBPR that fosters deliberate consideration of the complex and dynamic nature of factors that shape health.[25] A *system* can be defined as a set of entities 'interconnected in such a way that they produce their own pattern of behavior over time.'[26] However, Foster-Fishman et al.[27] note 'a conceptual gap between how change agents think about systems change' and current understanding of how systems actually function (**Figure 2**). Communities should be viewed as dynamic systems in which any given intervention is just one event in a 'larger, complex system of processes and events.'[27, 28]

Integrating principles of CBPR with Foster-Fishman et al.'s systems framework, we propose a revised conceptual model for CBPR that places the intervention within the larger community system (**Figure 3**). Our proposed Systems-Oriented Community Ownership (SOCO) model includes Foster-Fishman et al.'s four major dimensions representing fundamental parts of a

system: the system's *norms*, including the values, beliefs, and attitudes that underlie system activities; *resources* in the form of human, social, and economic capital that determine the system's capacity to perform its activities; *regulations* at the governmental and organizational levels serving to govern and coordinate system activities; and *operations* representing processes and structures for enacting power, making decisions, and carrying out actions. Our model recognizes two sub-areas within the operations dimension, drawn from CBPR: the *partnerships* that comprise the structure of who is making decisions and carrying out actions, and the *processes* or actions themselves, which include programs and services as well as interventions to address specific priority issues. These four dimensions are the core levers for system change.

A key feature that distinguishes our model from the CBPR model is that all the dimensions occur explicitly within the context of the system. De-centering specific processes or interventions brings the focus back to the system itself, and to system-based processes and solutions. Multi-sector collaborations are essential to identifying ways to use or re-orient existing systems to improve community health. Thus, the researcher-community partnership represents just one among the many partnerships in the system; the program or intervention, into which research and evaluation activities are integrated, is one operations process among many already occurring within it; and outcomes of the program are seen within the system itself, as effects on system norms, resources, regulations, and/or operations.

Methodological tools

A systems approach offers new methodologies for CBPR to recognize the complexity of factors affecting health at multiple levels; examine what works in different contexts; explore strategies to strengthen existing systems; and identify leverage points to overcome inertia.[29-31]

Recent reviews[29, 30] suggest that qualitative and mixed methodologies are especially promising as strategies to achieve a shared understanding of issues that may be historically contentious.[29] Decolonial-inspired methods,[8, 32] in particular, offer tools to break down barriers that maintain settler-colonial practices in research projects. Key practices include: reflexivity of the research to conditions of settler-colonialism; collaboration with Indigenous groups and community leaders; sharing knowledge in multiple languages and formats; gathering advice from the community beyond the core collaborators; and consistently assessing processes and ensuring that research has concrete benefits for affected communities. In a systems approach overall, the use of multiple methods and maintaining flexibility in methodological procedures is a key factor in maintaining meaningful collaborations in service of community goals and needs.

APPLICATION: THE MI GENTE, NUESTRA SALUD INITIATIVE

Inspiration

The Jamkhed Comprehensive Rural Health Project, described as '*a people's movement for health,*'[33] offers an example of successful integration of a systems perspective with CBPR that has led to vast health improvements in rural populations in India[34]. Core features are: (1) *lay community health advocates* address their community's self-identified health and related concerns; (2) an *Institute for Training & Research* equips community health advocates with knowledge, advocacy, and evidence-based tools; (3) a *mobile team* provides healthcare and support and connects the community with the Institute; and (4) a robust *research and evaluation program* informs program impacts and continual improvement. Within our SOCO model (**Figure 3**), the Jamkhed approach has had measurable and sustained impacts on system norms and operations – including partnerships (between communities and providers) and processes

(which services are delivered and how – e.g., sanitation) – and on the system's resources (e.g., increasing human capital in the form of improved health and skills).[34]

System Context

The Mi Gente, Nuestra Salud (MGNS) initiative aims to mobilize a social movement for community health ownership in the cities of Santa Maria and Guadalupe in Northern Santa Barbara County, CA (**Figure 4**). Santa Maria and Guadalupe are among California's poorest and most medically underserved regions.[35] The population is 65% Hispanic, including many (im)migrants working in California's fields.[36] In 2019, 63% reported less than a high school diploma, 60% lacked healthcare coverage, and 29% reported needing to see a doctor over the past year but could not.[36] Compared with its more affluent neighbors, Santa Maria and Guadalupe suffer disproportionately from nearly every chronic illness, including obesity, diabetes, cancer, and heart and respiratory diseases.[36, 37] Further, ~25,000 people in the region are Mixteco Indigenous peoples from Mexico, a largely overlooked population in California that faces unique challenges relating to health[36, 38] as well as racism, economic insecurity, language barriers, and mistrust of healthcare providers and of police.[39-41]

The region's inequities are a microcosm of healthcare inequities nationwide, and a consequence of barriers including reliance on inaccessible healthcare facilities; a scarcity of people trained in delivering culturally competent care; a focus on treatment rather than prevention; and insufficient acknowledgement of patients' social, cultural, and economic contexts. In Santa Maria and Guadalupe, representatives from underserved communities are often excluded from discussions among healthcare and policy leaders who define and determine the city's priorities and influence health outcomes.

The Cal Poly Center for Health Research (CHR) is located 30 miles away but has a strong presence in Santa Maria's resources, processes and partnerships. Over the past 15 years, community members from multiple sectors, including the region's major healthcare systems and non-profit health-related agencies as well as lay champions from marginalized groups, have been the driving force behind the CHR's research, training, and healthcare delivery initiatives.[8, 42, 43] The CHR also leads the region's only mobile medical clinic, in which lay community health advocates work alongside health practitioners to provide healthcare to uninsured women and connect patients with other health resources. Its programs offer training to lay community health workers with little prior formal education, and cultural competency education for hospital staff and other community agencies.

Achievements to Date

MGNS, initiated in 2020, builds on existing partnerships with local healthcare providers (Community Health Centers, Marian Regional Medical Center) and health advocates (Lideres Campesinas, Herencia Indigena, Future Leaders of America) by adding a structure for collaboration and discussion and re-orienting existing system partnerships and processes towards action. Thus, we view the MGNS initiative as the introduction of 'ripples' in the Santa Maria and Guadalupe community systems, beginning with partnerships within the Operations (Figure 3) component of the system.

Preparation and Launch

To take stock of existing data on the community's health needs, assets, and partnerships, we collated local,[36] county,[37] and national data to summarize known health concerns and identify

knowledge gaps. We identified existing community health resources, including healthcare, government, non-profit, and religious organizations, and local businesses, and created a log, wiki, and spatial map of resources[44]**.** These were shared with the public through a project website (migentenuestrasalud.org) and social media. Representatives from the community and the CHR suggested and voted on names for the initiative, leading to selection of Mi Gente, Nuestra Salud (MGNS).

A launch event in December 2020 engaged participants from all sectors, including (but not exclusive to) existing partners in local healthcare, government and non-profit organizations, religious organizations, local businesses, news organizations, and organizations with networks among socially disadvantaged, low-literacy, and non-English speaking populations. The event was multilingual and interactive, including small group discussions and listening sessions designed to amplify the voices of farm laborers and Mixtec speakers. It included poetry, music, and art telling stories of people in marginalized communities.

Advisory Board

For the MGNS initiative, a core team of researchers and project staff based in the CHR coordinate activities that include serving as the repository for information, relaying information among partners, and directing efforts of students to support community health advocates. However, the project is guided by the perspectives and decisions of an advisory board consisting of two city council members, a city planner, and representatives of local community organizations and the healthcare system**.** The advisory board has provided input on interpretation of preliminary data (described below) and on this manuscript. As the initiative proceeds, the advisory board will continue to: (a) facilitate understanding of the community's needs and

resources; (b) define priorities and outcomes for work groups and actions; (c) plan for evaluation, including determination of measures of effectiveness and impact of the process and its outcomes; and (d) identify other stakeholders to invite to discussions on how existing systems can be used or reoriented to improve health outcomes. As such, collaboration between the CHR-based team and the advisory board serve as the core of the community partnerships stemming from the MGNS initiative. We also acknowledge that this collaboration is only one of many other partnerships that exist in the Santa Maria and Guadalupe area with work impacting health equity in the region. Therefore, we hope to foster a collaborative network including our CHR-based team, advisory board, and outside partnerships, making use of existing resources to improve health outcomes.

Collection of data on community concerns

From January-April 2020, targeted and general recruitment approaches were used to recruit a convenience sample of participants to complete a community health needs survey. Modalities to promote enrollment included social media, news media, word of mouth, virtual mailing lists, flyers, and engagement at community events and locations. The survey was adapted from the Community Tool Box (https://ctb.ku.edu/en), with additional items addressing COVID, LGBTQ+ health, and experiences of racism/discrimination. To reduce respondent burden, the initial 40-item survey was shortened to 19 items based on preliminary responses (**Supplemental File 1).** For participants from community organizations, a separate module assessed the organization's perceived strengths and areas for growth (**Supplemental File 2).** All written surveys were available in English and Spanish and interview-administered for Mixtec speakers. Consenting procedures allowed for verbal consent for participants who could not read or write. A

monthly lottery for a small gift was offered as a token incentive. All procedures and materials were approved by the Cal Poly Institutional Review Board.

Survey respondents were also invited to participate in multilingual focus groups and one-on-one interviews to share understandings about health needs, barriers, resources, and assets. A directed content analysis, currently underway, will be used to code transcripts that will also allow for the emergence of new topic areas.[45, 46]

Planned work

Within the SOCO model, our planned work focuses on two areas within Operations (i.e., maintaining partnerships and developing research and evaluation indicators and activities) and one area within the model's Resources component (i.e., initiating peer learning opportunities). These are described below.

Maintaining partnerships

Our project team has developed partnerships with county and municipal leaders, healthcare and other service providers, and local non-profit organizations and health advocates. A critical objective as we move forward is to maintain and continue to nurture these partnerships by maintaining a presence in the community through continued provision of services (i.e., mobile medical clinic); continuing to meet regularly with our advisory board; and providing scientific and logistical support for efforts of other regional entities working towards health equity.

Developing research and evaluation indicators and activities

Research activities are an integral part of the processes within the Operations of a system as they inform decision-making and direction of efforts. For example, while advisory board members contributed to our proposed SOCO model, we will continue to gather feedback from other community partners following an approach used by Belone et al.[14] to evaluate the face validity of components and constructs within the model.

Additionally, research activities include processes for selecting indicators of effectiveness and impact. In our planned work, effectiveness will be evaluated quantitatively and qualitatively, including process and outcome measures that align with our system-oriented approach.[47, 48] Initial evaluations will use a participatory, developmental approach, in which immediate feedback on activities are used to inform the ongoing evolution and adaptation of initiative activities.[49, 50] Examples of possible evaluation components and methods are shown in Table 1. We anticipate that short-term indicators will focus on assessment of changes in Operations (partnerships and processes), intermediate indicators will assess changes in Operations as well as Resources (especially human and social capital) and Norms (specifically within partnerships), and long-term indicators will encompass all four system components (Operations, Resources, Norms, Regulations). This will evolve into a summative approach to quantify the initiative's impact and inform improvements.

The process of selecting indicators will be a collaborative effort, based on shared understanding of system / causal loop diagrams to support the relevance of selected indicators. [51-53] Short- and intermediate-term benchmarks can be used within an accountability framework to assess the effectiveness of collaborative efforts, learn from experiences, and refine approaches.[49, 51] The principles of cultural relevance, equity, and justice will also be incorporated as criteria for effectiveness. Finally, measures will include indicators on collaborative efforts, including

membership engagement, governance, and accountability,[49] and CBPR constructs (within domains of context, group dynamics, methods, and outcomes) [47, 48].

Protocols for research activities will be evaluated by the Cal Poly Institutional Review Board and other review committees as necessary, depending on the partners involved. As in our prior work, all procedures will consider circumstances unique to the communities involved, including convenience, literacy, accessibility, and desire for anonymity.

Initiating peer learning opportunities

Our initiative is also designed to affect system Resources (Figure 3) through peer learning opportunities, an approach inspired by Jamkhed[33, 54]. Planned activities include a series of evening and weekend seminars and workshops to be led by multidisciplinary faculty and community members, for participants from varied backgrounds including lay health advocates, project partners, college and university students, health practitioners, government and private sector representatives, and local community members and leaders. Simultaneous multilingual (English, Spanish, Mixtec) interpretation equipment will be used for all sessions. Workshop objectives and teaching methods (**Table 2)** will be designed for all learners, including those with limited or no literacy skills, and will include listening sessions, art, observations (e.g., city council meetings), and field opportunities (e.g., mobile medical clinic), recognizing that they will be held in a different cultural space and adjusting approaches accordingly. Social gatherings will also be held to promote informal exchanges and community engagement.

Challenges

Envisioning system-level interventions is challenging. Unlike more typical 'intervention packages,' system-level interventions involve change at multiple levels, across multiple sectors, with the objective of changing not only health outcomes but also the processes and partnerships that provide context for those outcomes.[29, 30, 55]

Introducing systems-based methodologies into CBPR also introduces the possibility that 'lack of transparency' of quantitative systems methodologies might make them less accessible and 'exacerbate power dynamics'[29] . A challenge, therefore, is to identify feasible methods that are accessible to all community partners.[29] Innovative strategies such as DataWalks[56] can demystify research and enable neighborhood residents and practitioners to contextualize information from the field and use data to effect community change. Ecological momentary assessment and geocoding can engage citizen scientists in the process of data collection in real time in social contexts. Overall, integrating systems science with CBPR should balance robust and theory-based methods with the requirement that they also be transparent.[29]

In addition, evaluation of systems-level CBPR work requires evaluating effectiveness of process and impact at multiple levels as well as at the system level,[29, 30, 55] using collaboratively developed measures that are meaningful not only to people in the system, but also to others outside of the system.

Finally, much time is required to maintain partnerships and participate in the processes, including research activities, that are critical to system change. These efforts are on top of the work that individual partners already engage in on a daily basis, with other operational barriers such as geographical distance and differences in schedules between universities and community

organizations. Funds to support these additional efforts are generally not readily available, nor are their additional processes integrated into existing day-to-day commitments. In our work, seeking funding to sustain health equity efforts is an ongoing challenge. Building and sustaining the economic and opportunity capital that are essential for system change will require connecting with other communities and building alliances across systems.

CONCLUSION

Despite its ideal of "the pursuit of happiness" as an unalienable right for all persons in the US, skin color, language spoken, and place of origin continue to be important barriers. New models that disrupt entrenched systems are desperately needed so that all people – including those in racially, socially, economically, and occupationally marginalized groups – have equal rights and access to health information, health care, and safe residential and occupational environments.

Our approach uses multi-faceted efforts to engage a diverse array of community members, including residents, college students, lay health workers, and people in positions of power, based on a foundation of cultural sustenance that recognizes linguistic diversity, cultural values and norms, and a legacy of colonization. As such, this initiative differs significantly from traditional top-down approaches that fail to acknowledge a community's wealth of knowledge and expertise. By transcending existing hierarchical systems, MGNS aims to empower communities to act on pressing health concerns. Further, by integrating systems thinking into community-based research, it aims to provide the necessary research and evidence base needed for continued social and political action towards health ownership and equity that is system-oriented, collaborative, and community-based.

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REFERENCES

1. Healthy People 2030, https://health.gov/healthypeople/objectives-and-data/browse-objectives/pregnancy-and-childbirth/increase-proportion-women-who-had-healthy-weight-pregnancy-mich-13 (2020).
2. Bartholomew A, Adedze P, Soto V, et al. Historical Perspective of the WIC Program and Its Breastfeeding Promotion and Support Efforts. *J Nutr Educ Behav* 2017; 49: S139-+. DOI: DOI 10.1016/j.jneb.2017.03.018.
3. Fielding JE, Teutsch S and Koh H. Health reform and Healthy People initiative. *Am J Public Health* 2012; 102: 30-33. DOI: 10.2105/AJPH.2011.300312.

4. Kim Y, Pirritano M and Parrish KM. Determinants of racial and ethnic disparities in utilization of hospital-based care for asthma among Medi-Cal children in Los Angeles. *J Asthma* 2021. DOI: 10.1080/02770903.2021.1955131.
5. Weed S. The Impact of Household Income on Kidney Care: Poverty Impacts Self-Care and Stress. *Clin J Am Soc Nephro* 2020; 15: 299-300. DOI: 10.2215/Cjn.00180120.
6. Let's Get Healthy California, https://letsgethealthy.ca.gov/ (2016).
7. Lines LA, Jardine CG and Wel YDFN. Connection to the land as a youth-identified social determinant of Indigenous Peoples' health. *Bmc Public Health* 2019; 19. DOI: ARTN 17610.1186/s12889-018-6383-8.
8. Espinoza-Kulick MAV. Decolonial-Inspired Ethnography: Centering Indigeneity in Culturally Responsive Evaluation with Latinx Immigrant Communities. *New Directions for Evaluation* In press.
9. Jolivétte A. *Indian Blood: HIV and Colonial Trauma in San Francisco's Two-Spirit Community.* Seattle, WA University of Washington Press, 2016.
10. Paluck EL, Porat R, Clark CS, et al. Prejudice Reduction: Progress and Challenges. *Annu Rev Psychol* 2020 2020/09/16. DOI: 10.1146/annurev-psych-071620-030619.
11. Paluck EL and Green DP. Prejudice reduction: what works? A review and assessment of research and practice. *Annu Rev Psychol* 2009; 60: 339-367. 2008/10/15. DOI: 10.1146/annurev.psych.60.110707.163607.
12. Bezrukova K, Spell CS, Perry JL, et al. A meta-analytical integration of over 40 years of research on diversity training evaluation. *Psychol Bull* 2016; 142: 1227-1274. 2016/10/25. DOI: 10.1037/bul0000067.

13. Minkler M. Community-based research partnerships: challenges and opportunities. *Journal of Urban Health* 2005; 82 (Suppl 2): ii3-ii12.
14. Belone L, Lucero JE, Duran B, et al. Community-Based Participatory Research Conceptual Model: Community Partner Consultation and Face Validity. *Qualitative Health Research* 2016; 26: 117-135. DOI: 10.1177/1049732314557084.
15. Collins SE, Clifasefi SL, Stanton J, et al. Community-Based Participatory Research (CBPR): Towards Equitable Involvement of Community in Psychology Research. *Am Psychol* 2018; 73: 884-898. DOI: 10.1037/amp0000167.
16. Hacker K, Chu J, Leung C, et al. The impact of Immigration and Customs Enforcement on immigrant health: Perceptions of immigrants in Everett, Massachusetts, USA. *Social Science & Medicine* 2011; 73: 586-594. DOI: 10.1016/j.socscimed.2011.06.007.
17. Horowitz CR, Robinson M and Seifer S. Community-Based Participatory Research From the Margin to the Mainstream Are Researchers Prepared? *Circulation* 2009; 119: 2633-2642. DOI: 10.1161/Circulationaha.107.729863.
18. Newman PA and Rubincam C. Advancing community stakeholder engagement in biomedical HIV prevention trials: principles, practices and evidence. *Expert Rev Vaccines* 2014; 13: 1553-1562. DOI: 10.1586/14760584.2014.953484.
19. Wallerstein N, Duran B, Oetzel JG, et al. *Community-based participatory research for health : advancing social and health equity*. Third edition. ed. San Francisco, CA: Jossey-Bass, A Wiley brand, 2018, p.xxxviii, 439 pages.
20. Campbell JA, Yan A and Egede LE. Community-Based Participatory Research Interventions to Improve Diabetes Outcomes: A Systematic Review. *Diabetes Educ* 2020; 46: 527-539.

21. Coughlin SS and SMith SA. Community-based Participatory Research to Promote Healthy Diet and Nutrition and Prevent and Control Obesity among African Americans: A Literature Review. *J Racial Ethn Health Disparities* 2017; 4: 259-268.
22. Coughlin SS and Smith SA. A review of community-based participatory research studies to promote physical activity among African Americans. *J GA Public Health Assoc* 2016; 5: 220-227.
23. Hacker K, Tendulkar SA, Rideout C, et al. Community Capacity Building and Sustainability: Outcomes of Community-Based Participatory Research. *Prog Comm Hlth Partn* 2012; 6: 349-360. DOI: DOI 10.1353/cpr.2012.0048.
24. Seifer SD. Community- Based Participatory Research for Health: Advancing Social and Health Equity, 3rd edition. *Prog Comm Hlth Partn* 2019; 13: 219-221. DOI: DOI 10.1353/cpr.2019.0022.
25. BeLue R, Carmack C, Myers KR, et al. Systems thinking tools as applied to community-based participatory research: a case study. *Health Education & Behavior* 2012; 39: 745-751.
26. Meadows DH and Wright D. *Thinking in systems : a primer*. White River Junction, Vt.: Chelsea Green Pub., 2008, p.xiii, 218 p.
27. Foster-Fishman PG, Nowell B and Yang H. Putting the system back into systems change: a framework for understanding and changing organizational and community systems. *American Journal of Community Psychology* 2007; 39: 197-215.
28. Trickett EJ, Beehler S, Deutsch C, et al. Advancing the science of community-level interventions. *American Journal of Public Health* 2011; 101: 1410-1419.

29. Frerichs L, Lich KH, Dave G, et al. Integrating systems science and community-based participatory research to achieve health equity. *American Journal of Public Health* 2016; 106: 215-222.

30. Carey G, Malbon E, Carey N, et al. Systems science and systems thinking for public health: a systematic review of the field. *BMJ Open* 2015; 5. DOI: 10.1136/bmjopen-2015-009002.

31. Hieronymi A. Understanding systems science: a visual and integrative approach. *Systems Research and Behavioral Science* 2013; 30: 580-595. DOI: 10.1002/sres.2215.

32. Craig G. Research Justice: Methodologies for social change. *J Soc Policy* 2017; 46: 411-413.

33. Perry HB and Rohde J. The Jamkhed Comprehensive Rural Health Project and the Alma-Ata Vision of Primary Health Care. *Am J Public Health* 2019; 109: 699-704. 2019/03/22. DOI: 10.2105/AJPH.2019.304968.

34. Perry HB, Rassekh BM, Gupta S, et al. Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal, neonatal and child health: 7. shared characteristics of projects with evidence of long-term mortality impact. *J Glob Health* 2017; 7: 010907. 2017/07/08. DOI: 10.7189/jogh.07.010907.

35. Dignity Health Marian Regional Medical Center. Community Health Needs Assessment. 2019.

36. Dignity Health & Marian Regional Medical Center. Community Needs Assessment, https://www.dignityhealth.org/-/media/cm/media/documents/CHNA/CHNA-Marian.ashx?la=en&hash=C5F3146E97890EF157167BB56B1071C209CF148E (2019).

37. Remington PL, Catlin BB and Gennuso KP. The County Health Rankings: rationale and methods. *Popul Health Metr* 2015; 13: 11. DOI: 10.1186/s12963-015-0044-2.

38. Maxwell AE, Young S, Crespi CM, et al. Social determinants of health in the Mixtec and Zapotec community in Ventura County, California. *Int J Equity Health* 2015; 14: 16. DOI: 10.1186/s12939-015-0148-0.

39. Little Village Foundation. Santa Maria: Reaching Across the Divide, http://littlevillagefoundation.com/santa-maria-sun-reaching-across-the-divide-the-mixteco/ (2020).

40. Maxwell AE, Young S, Crespi CM, et al. Social determinants of health in the Mixtec and Zapotec community in Ventura County, California. *Int J Equity Health* 2015; 14. DOI: ARTN 16

10.1186/s12939-015-0148-0.

41. Maxwell AE, Young S, Moe E, et al. Understanding Factors that Influence Health Care Utilization Among Mixtec and Zapotec Women in a Farmworker Community in California. *J Commun Health* 2018; 43: 356-365. DOI: 10.1007/s10900-017-0430-8.

42. Phelan S, Hagobian T, Brannen A, et al. Effect of an Internet-Based Program on Weight Loss for Low-Income Postpartum Women: A Randomized Clinical Trial. *JAMA* 2017; 317: 2381-2391. 2017/06/21. DOI: 10.1001/jama.2017.7119.

43. Phelan S, Wing RR, Brannen A, et al. Randomized controlled clinical trial of behavioral lifestyle intervention with partial meal replacement to reduce excessive gestational weight gain. *Am J Clin Nutr* 2018; 107: 183-194. DOI: 10.1093/ajcn/nqx043.

44. Aguilera-Galvan J. Santa Maria Community Resource Map, https://www.google.com/maps/d/edit?mid=1tAeKpbVKakJZV6MEZULHxUFNM0zlUWlk&usp=sharing (2020, accessed January 30, 2022).

45. Powell BJ, Waltz TJ, Chinman MJ, et al. A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project. *Implement Sci* 2015; 10: 21. DOI: 10.1186/s13012-015-0209-1.

46. Proctor EK, Powell BJ and McMillen JC. Implementation strategies: recommendations for specifying and reporting. *Implement Sci* 2013; 8: 139. DOI: 10.1186/1748-5908-8-139.

47. Minkler M and Wallerstein N. *Community-based participatory research for health : from process to outcomes*. 2nd ed. San Francisco, CA: Jossey-Bass, 2008, p.xxxv, 508 p.

48. Oetzel JG, Villegas M, Zenone H, et al. Enhancing stewardship of community-engaged research through governance. *Am J Public Health* 2015; 105: 1161-1167. DOI: 10.2105/AJPH.2014.302457.

49. Latham N. *A Practical Guide to Evaluating Systems Change in a Human Services System Context*. 2014. Center for Evaluation Innovation.

50. Hargreaves MB. *Evaluating System Change: A Planning Guide*. April 2010 2010. Princeton, NJ: Mathematica Policy Research, Inc.

51. Kreger M, Brindis CD, Manuel DM, et al. Lessons learned in systems change initiatives: benchmarks and indicators. *American Journal of Community Psychology* 2007; 39: 301-320.

52. Preskill H, Gopal S, Mack K, et al. *Evaluating Complexity: Propositions for Improving Practice*. 2014. FSG.

53. Thomas VG and Parsons AA. Culturally responsive evaluation meets systems-oriented evaluation. *American Journal of Evaluation* 2017; 38: 7-28.

54. Parikh R, Antoniello P, Arole S, et al. The Jamkhed model: Income generation programs, health policies, and sustainability. *J Invest Med* 2008; 56: 125-125.

55. Clarke A and Crane A. Cross-sector partnerships for systemic change: systematized literature review and agenda for further research. *Journal of Business Ethics* 2018; 150: 303-313. DOI: 10.1007/s10551-018-3922-2.

56. Murray B, Falkenburger E and Saxena P. Data Walks: An Innovative Way to Share Data with Communities, https://www.urban.org/sites/default/files/publication/72906/2000510-data-walks-an-innovative-way-to-share-data-with-communities.pdf (2015).

57. Wallerstein N, Oetzel JG, Duran B, et al. Culture-centeredness in community-based participatory research: contributions to health education intervention research. *Health Educ Res* 2019; 34: 372-388. DOI: 10.1093/her/cyz021.

Table 1. Examples of indicators and benchmarks to evaluate system change

Timing	Examples of indicators and benchmarks	Data collection methods
Short-term (Operations)	• # partners/stakeholders/organizations represented in partnerships, work groups, and advisory board; demographic characteristics • Qualitative data to determine what factors contribute to participation, incomplete participation, and non-participation in partnerships. • # health needs prioritized for action; # work groups created • # and frequency of advisory board and work group meetings, # and diversity of participants • Qualitative data on factors influencing meeting procedures, participants, and frequency, and on reasons for changes to these • Qualitative data describing interactions among system parts (norms, resources, operations, regulations), partnership dynamics, and differences in partnership perspectives	• Surveys • Rapid feedback debriefs • Focus groups • Interviews • Digital storytelling • Environmental scans • Observations

Intermediate (Operations, Resources, Norms)	• # of community health and non-health partners and settings in which programs take place, and demographic characteristics of partners • Qualitative data on factors contributing to community organizations and hospital partners promoting mobile health unit and street medicine, measures to encourage more active promotion, barriers to adoption by potential partners, and reasons for incomplete adoption • Quantitative data on adherence to protocols • Qualitative data to identify factors influencing implementation at all levels, and to describe effects on outcome measures, and reasons for modification of procedures over time • Qualitative data describing changes in partnership dynamics and partnership perspectives, and identifying system parts more resistant to change • Quantitative data on participation in and satisfaction with training workshops and other peer learning opportunities	• Surveys • case studies • Focus groups • Interviews • Digital storytelling • Observations

Long-term (Operations, Resources, Norms, Regulations)	• # and characteristics of participants or patients served • Pre/post comparison of community-identified health outcome (e.g., weight, diet quality, activity, satisfaction with care), self-efficacy, empowerment • Pre/post measures of trust, engagement, partnership, cohesion among partners, overall satisfaction with project involvement and direction of the partnership, and whether partnership is providing necessary resources • Qualitative data to assess patients' experiences and satisfaction with program. • Qualitative data to identify factors affecting perceptions of self-efficacy, empowerment, and partnership characteristics, and measures to improve outcomes. • Qualitative data to determine what factors contribute to participation/non-participation. • Qualitative descriptions of types of systemic changes implemented, such as adoption of accountability measures and audit processes to monitor inequities; assessment of changes in local or organizational policies or practices (e.g., daycare/preschool settings, businesses cultural competence)	• Surveys • Case studies • Focus groups • Interviews • Digital storytelling • Observations • Document reviews

Table 2. Planned workshop objectives and teaching methods for peer learning.

Objectives	Teaching Methods
Provide a forum for the lived experiences of Latinx and Indigenous communities in Santa Maria and Guadalupe	• Listening sessions • Anecdotes
Review the history of colonization and racial and class power structures of Latinx and Indigenous communities in Santa Maria and Guadalupe	• Recitations, plays, poetry, storytelling, mourning
Observe, analyze, and create new narratives surrounding power and privilege dynamics among local organizations and stakeholders	• Review recordings of partnership and other meetings • Identifying and switching places of power game • Drawing dreams • Storytelling, artwork, dance • Vision and commitment word clouds
Create a culture of collaboration	• Games, music, social gatherings • Bonding with a multilingual partner/champion

Adapt evidence-based strategies to align with traditional forms of health promotion; create programs that are most effective for minoritized communities	• Displays of traditional vs. western health approaches • Role playing
Implement health promotion strategies in Latinx and Indigenous populations	• Field experiences on mobile medical clinic, with promotoras, other community organizations
Participate in subversive acts in exclusive spaces in the community system	• Speaking out (e.g., city council meetings) • Acting out (e.g., marches) • Sharing actionable knowledge (e.g., enrolling people in MediCal)
Advocate for change and inclusion of Latinx and Indigenous populations in decision-making processes that affect community health	• Artwork, music, murals, other community performances • Public speaking • Neighborhood walk 'n' talks • Social media campaigns • Attending and speaking at city council meetings
Identify measures of progress using a systems-centered framework.	• Mix and match to find the outcome game

Evaluate and monitor progress	• Data collection at parks and door-to-door
Activate, strengthen, and reorient existing systems	• Illustrating a neighborhood resource map • Connect the resources activity • Public speaking activities

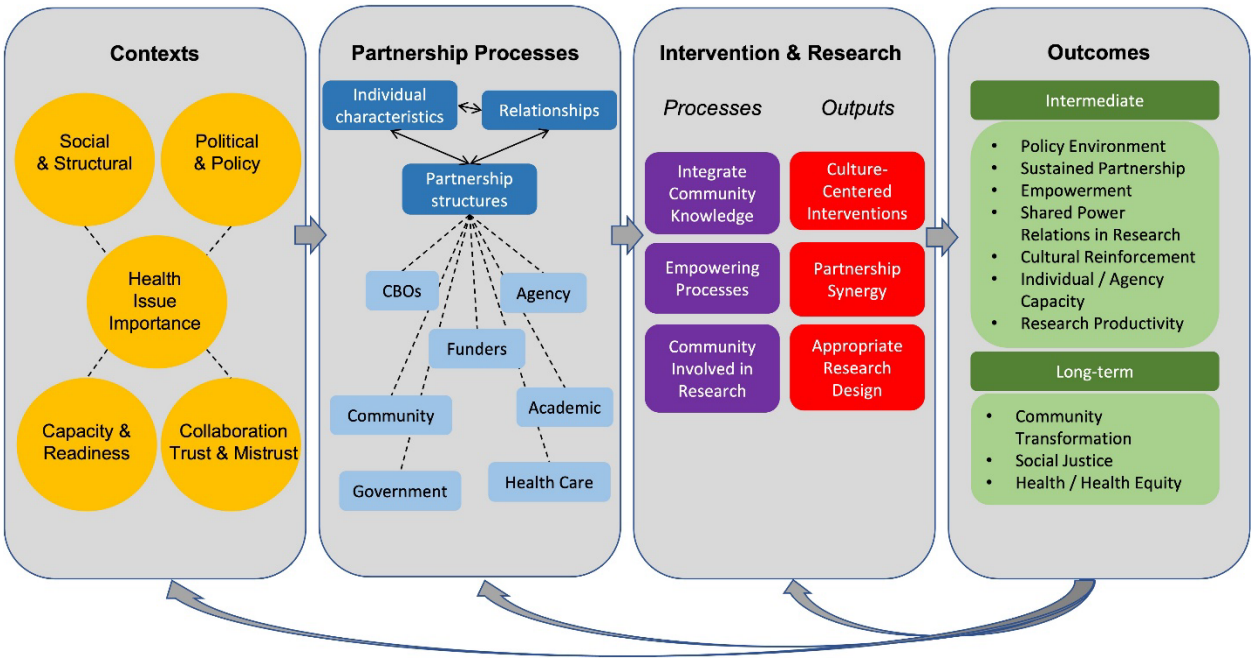

Figure 1. CBPR Conceptual Model includes four domains illustrating theoretical pathways that contribute to outcomes. In this model, *context* provides the historic grounding for *partnership processes*, which in turn impact the *intervention and research design*, ultimately contributing to research, capacity, and health outcomes. Adapted from Wallerstein et al.[57]

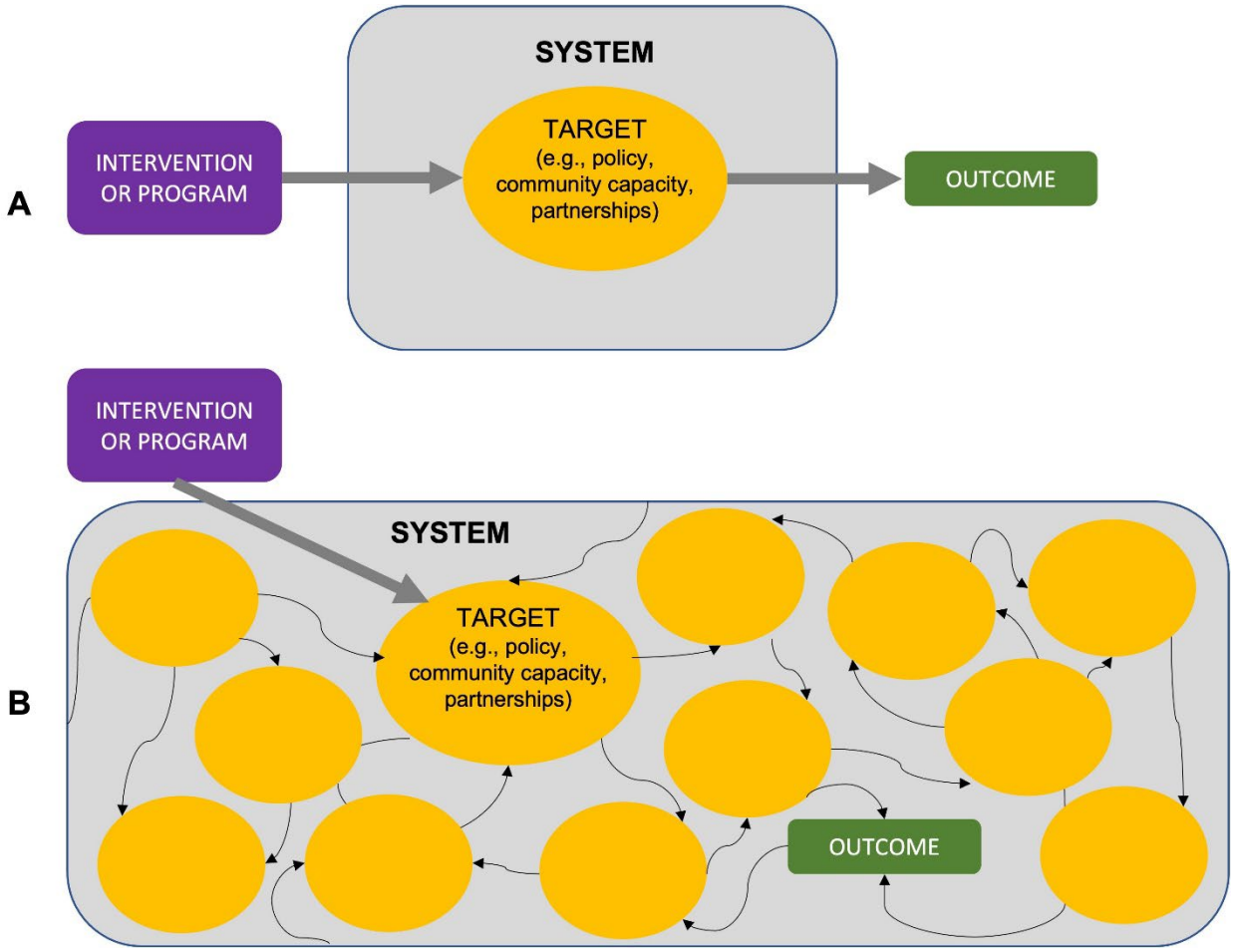

Figure 2. Conceptual gap between common systems change models that restrict number of factors that shape a system and the current understanding of actual system function. Figure A illustrates common understanding of enacting change in a system – targeting one specific part of the system such as a policy, characteristic, or resource, with the expectation that this will produce the desired outcome. Figure B illustrates current understanding of systems as complex webs, such that targeting change in one part of the system will produced the desired outcome only through ripples through other interrelated parts of the system. Adapted from Foster-Fishman et al.[27]

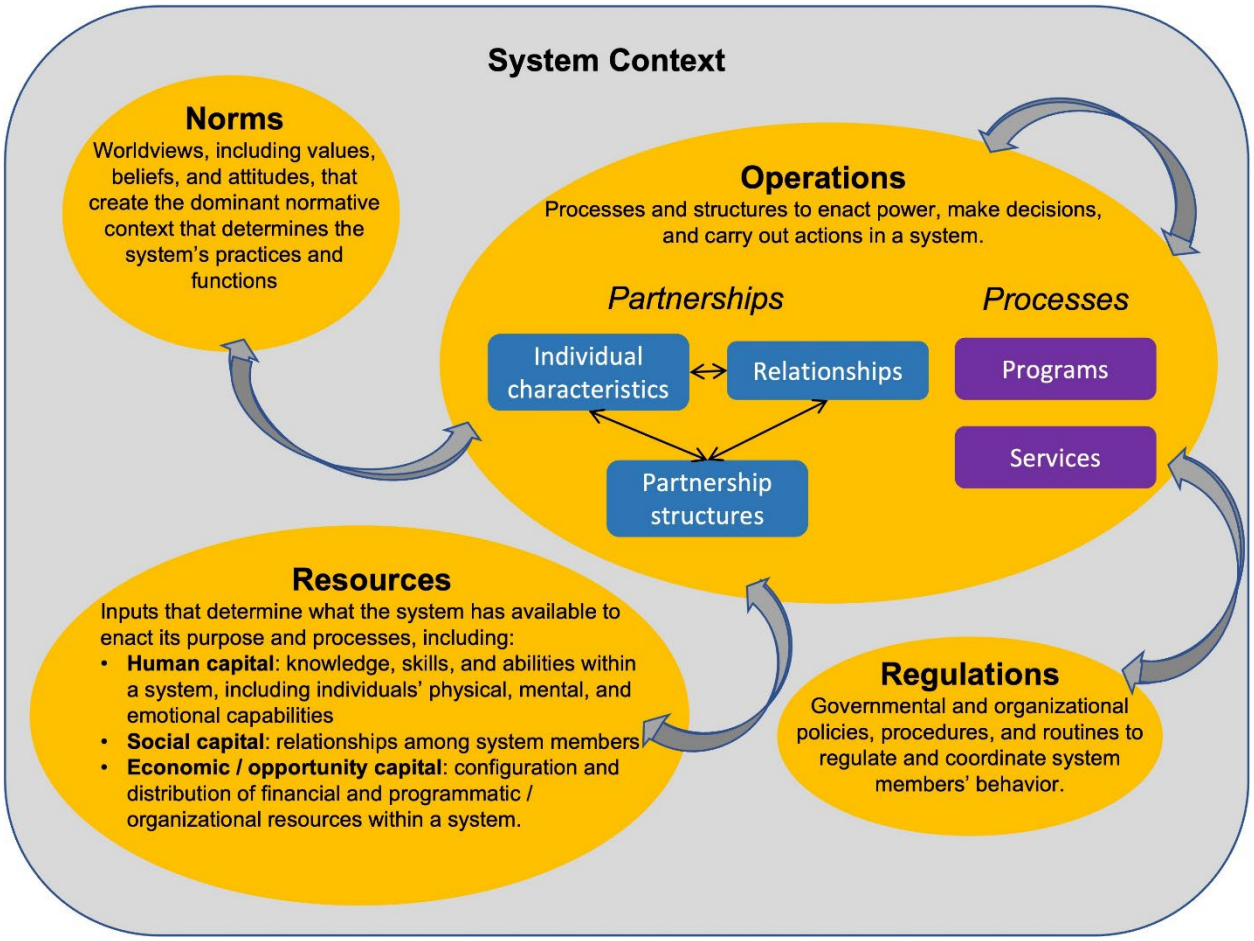

Figure 3. Proposed System-Oriented Community Ownership model includes Foster-Fishman et al.'s four major dimensions representing fundamental parts of a system that are also the core levers for system change. In this model, the program (i.e., intervention) is one operations process among many already occurring within the system. Outcomes of the system are seen within the system itself, as effects on system *norms*, *resources*, *regulations*, and/or *operations*.

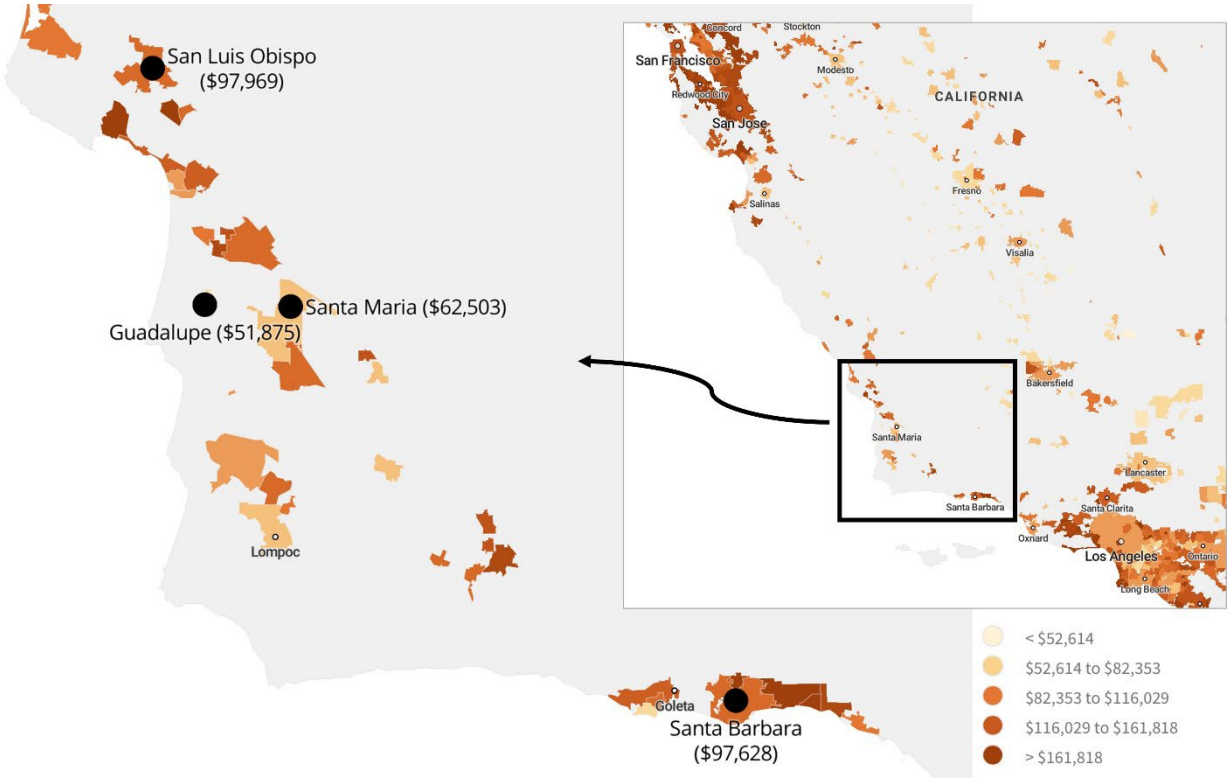

Figure 4. Median family income by Census Place [Map]. In SocialExplorer.com. ACS 2019 (5-Year Estimates) Retrieved January 30, 2022 from https://www.socialexplorer.com/a9676d974c/explore.

Community Health Concerns

In which city do you currently reside?

- ◯ Santa Maria
- ◯ Guadalupe
- ◯ Other city

Please list the city:

_____

If you are employed, is your employer located in Santa Maria?

- ◯ No
- ◯ Yes
- ◯ N/A (not employed)

In this section, we would like to ask you about a variety of health issues and your opinion about how satisfied you are with your community's efforts to deal with them. Select the option that shows how satisfied you are with community's efforts to address the issue.

	0 - Not satisfied	1	2	3	4 - Very satisfied
1. Children and youth have access to basic medical services.	◯	◯	◯	◯	◯
2. Laws against selling or providing cigarettes and smokeless tobacco to minors are strictly enforced.	◯	◯	◯	◯	◯
3. Victims of rape and sexual assault get the help they need.	◯	◯	◯	◯	◯
4. A wide variety of recreational opportunities are available and affordable for people of all ages and levels of physical mobility.	◯	◯	◯	◯	◯

	0 - Not satisfied	1	2	3	4 - Very satisfied
5. There are resources to help people identify and manage COVID-19.	◯	◯	◯	◯	◯
6. Mental health problems are recognized and treated in our community.	◯	◯	◯	◯	◯
7. Our community has an adequate number of health professionals who understand our language and culture.	◯	◯	◯	◯	◯
8. Jobs are available in the community.	◯	◯	◯	◯	◯
9. Healthy foods are available and affordable for all.	◯	◯	◯	◯	◯

	0 - Not satisfied	1	2	3	4 - Very satisfied

10. People of all ages and abilities have available transportation.	○	○	○	○	○
11. Children, youth, and adults maintain healthy weights and active lifestyles.	○	○	○	○	○
12. Police serve the interest of people in this neighborhood.	○	○	○	○	○
13. People of color are not discriminated against.	○	○	○	○	○
14. My family members and I are treated with respect by other people in the community.	○	○	○	○	○
15. Dental care and preventative screenings are available for all.	○	○	○	○	○
16. Children and youth are up to date on their immunizations.	○	○	○	○	○
	0 - Not satisfied	1	2	3	4 - Very satisfied
17. People in the neighborhood work together to solve local problems.	○	○	○	○	○
18. Pregnant women access early prenatal care.	○	○	○	○	○
19. Safe and affordable housing is available.	○	○	○	○	○

Inquietudes acerca de la salud de la comunidad

¿En qué ciudad reside usted actualmente?	◯ Santa Maria ◯ Guadalupe ◯ Otra ciudad
Por favor indique la ciudad:	_____
Si usted tiene empleo, ¿su empleador está localizado en Santa María?	◯ No ◯ Sí ◯ No corresponde (no tengo empleo)

En esta encuesta nos gustaría hacerle preguntas acerca de una variedad de asuntos relacionados con la salud y sus opiniones acerca de cuán satisfecha o satisfecho está usted con los esfuerzos de su comunidad por lidiar con los mismos. Elija la opción que muestre cuán satisfecha o satisfecho esté usted con los esfuerzos de su communidad por resolver el asunto.

	0 - Ninguna satisfacción	1	2	3	4 - Mucha satisfacción
4. Los niños y los jóvenes tienen acceso a servicios médicos básicos.	◯	◯	◯	◯	◯
6. Las leyes contra la venta o la entrega de cigarrillos y de tabaco sin humo a los menores de edad se hacen cumplir estrictamente.	◯	◯	◯	◯	◯
8. Las víctimas de violaciones y asalto sexual consiguen la ayuda que necesitan.	◯	◯	◯	◯	◯
10. Hay una amplia variedad de oportunidades recreativas disponibles y a buen precio para personas de todas las edades y niveles de movilidad física.	◯	◯	◯	◯	◯

	0 - Ninguna satisfacción	1	2	3	4 - Mucha satisfacción
11. Hay recursos para ayudar a las personas a identificar y lidiar con el COVID-19.	◯	◯	◯	◯	◯
12. Los problemas de salud mental se reconocen y se tratan en nuestra comunidad.	◯	◯	◯	◯	◯

13. Nuestra comunidad tiene un número adecuado de profesionales de la salud que entienden nuestro idioma y nuestra cultura.	○	○	○	○	○
18. Hay puestos de trabajo disponibles en nuestra comunidad.	○	○	○	○	○
20. Hay alimentos saludables disponibles y a buen precio para todos.	○	○	○	○	○

	0 - Ninguna satisfacción	1	2	3	4 - Mucha satisfacción
21. Las personas de todas las edades y capacidades tienen acceso al transporte.	○	○	○	○	○
23. Los niños, jóvenes y adultos mantienen pesos saludables y estilos de vida activos.	○	○	○	○	○
24. La policía sirve los intereses de las personas del barrio.	○	○	○	○	○
26. No hay discriminación contra las personas de color.	○	○	○	○	○
27. A mí y a los miembros de mi familia nos tratan con respeto las otras personas de la comunidad.	○	○	○	○	○
29. Todos tienen acceso a atención y evaluaciones preventivas dentales.	○	○	○	○	○
30. Los niños y jóvenes están al día con sus vacunas.	○	○	○	○	○

	0 - Ninguna satisfacción	1	2	3	4 - Mucha satisfacción
32. Las personas de la vecindad colaboran por resolver problemas locales.	○	○	○	○	○
34. Las mujeres embarazadas consiguen atención prenatal.	○	○	○	○	○
37. Hay vivienda segura y económicamente accesible.	○	○	○	○	○

Presione el botón abajo que dice "SUBMIT" para continuar a la siguiente página.

Asset Survey for Organizations

Please answer the following questions regarding the organization in which you hold a leadership role.

1. What is the name of your organization?

_____

2. What is your role in this organization?

_____

3. If you'd like, please share your name:

_____

4. How would you describe the current status of the organization?

_____

5. What are you doing well?

_____

6. What are areas in your organization that need improvement?

_____

7. What issues or challenges does the organizations face?

_____

8. What are key unmet needs or issues of your participants?

_____