Engaging the Houston Community in Research: An Early Case Study of a Community Engagement Core in the University of Houston's HEALTH Center for Addictions Research and Cancer Prevention

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Objective: The National Institute on Minority Health and Health Disparities-funded U54 Research Center at the University of Houston addresses disparate racial/ethnic health outcomes related to cancer and substance abuse. Of its 4 cores, the Community Engagement Core involves the impacted community in affiliated research. Strategies include implementing community advisory boards, assisting with study design and execution, maintaining a social media presence, and publishing health-related videos for the community. We examine the early effectiveness of these strategies. **Methods:** Data collection included surveying investigators and community advisory board members and monitoring traffic to videos and social media posts. **Results:** On a Likert scale survey of investigators (4 = "agree" and 5 = "strongly agree"), the mean rating for a prompt expressing satisfaction with services received was 4.67 (SD = 0.52; N = 6). On a Likert scale survey of community advisory board members, the mean rating for a prompt expressing belief that feedback was taken seriously was 5.00 (SD = 0.00; N = 9). **Conclusions:** The Community Engagement Core is building trusting relationships between researchers and community members. We discuss lessons learned that may inform both our growth and others' efforts to implement community-engaged research.

Key words: community engagement; community-based research; community advisory board; health disparities; cancer prevention; addiction
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Houston, Texas, is the fourth most populous city in the United States (US). It is also among the most racially and ethnically diverse, with 45.0% of the population self-identifying as Latinx, 24.4% as White, 22.6% as Black, and 6.8% as Asian, according to the 2020 US census.[1] The Commonwealth Fund has ranked Texas last among all states in terms of access to, and affordability of, healthcare.[2] Unfortunately, the Black and Latinx communities are disproportionately impacted by a lack of access to healthcare. Only 59.0% of Latinx adults in Harris County (of which Houston is the county seat) report having health insurance.[3] In contrast, 74.4% of all adults in Harris Country report the same.[3] Similarly, 30.4% of Latinx adults in Harris Country report being un-

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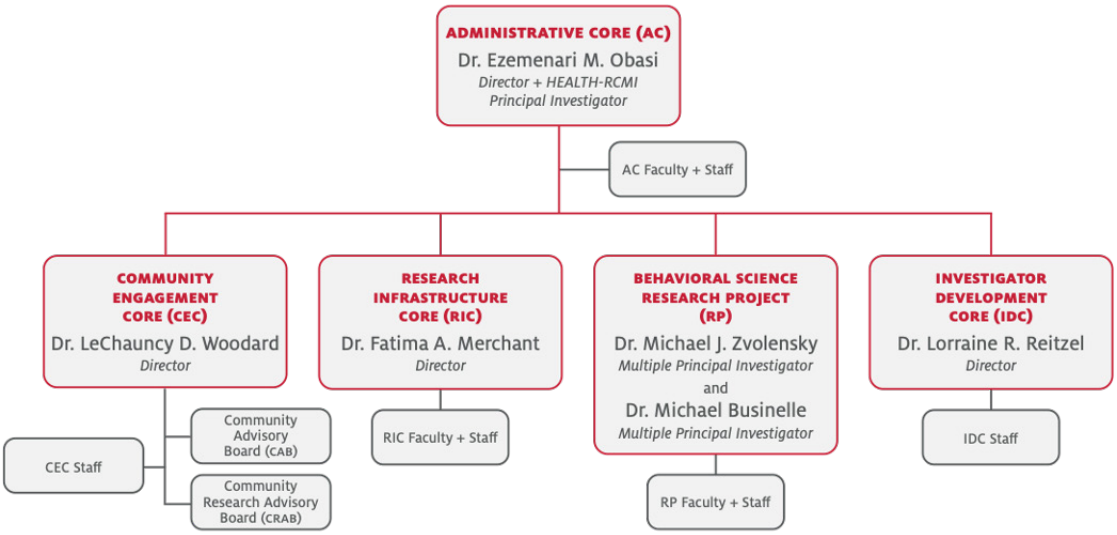
able to see a doctor at all due to cost.[3] Only 22.1% of all adults in Harris County report the same.[3]

This relative lack of access to healthcare by race and ethnicity contributes to disparate risks for, and rates of, chronic diseases, like cancers. Black persons in Harris County have a higher cancer incidence rate than the overall population.[4] Mammography and Pap smear screening play key roles in the early detection and treatment of breast and cervical cancer, respectively.[5,6] Latinx women in the Houston-The Woodlands-Sugar Land Metropolitan Statistical Area, however, are less likely than the overall population of women to have ever had a mammogram or to have ever undergone Pap smear screening.[7] Prostate-specific antigen (PSA) testing plays a crucial role in the early detection and treatment of prostate cancer.[8] Latinx men in the Houston-The Woodlands-Sugar Land Metropolitan Statistical Area, however, are less likely than the overall population of men to have ever had a PSA test.[7] In the Houston Metropolitan Service Area, Black adults report higher rates of asthma than the overall population.[4] Asthma is associated with a higher risk of lung cancer.[9] Among Black adults in Harris County, 78.6% are overweight or obese, whereas the same is true of 67.1% of the overall population.[7] Obesity has been linked to an increased risk of cancer of at least 13 different anatomical sites.[10] Black adults in Harris County also have higher incidence rates of diabetes compared to all adults in the population.[4] Diabetes is positively correlated with pancreatic, liver, colorectal, breast, bladder, and endometrial cancer.[11] Evidence suggests that these disparities may have been exacerbated by the disparate impact of Hurricane Harvey, Winter Storm Uri, and the COVID-19 pandemic on Black and Latinx communities.[12]

Substance abuse is a significant behavioral health problem in Houston, with the area having been designated as a High Intensity Drug Trafficking Area by the Office of National Drug Control Policy.[13] Similar to the racial and ethnic patterns of cancer risk, some groups bear a disproportionate burden of substance abuse and associated outcomes. For example, data indicate that 15.4% of Latinx adults in Harris County smoke, relative to 13.3% of adults overall.[14] Smoking is associated with 90% of lung cancer diagnoses,[9] a host of other cancers, and multiple other chronic diseases.[15] In Harris County, binge drinking rates for Black and Latinx adults were 26.9% (each) versus 22.6% among adults overall.[16] Alarmingly, the age-adjusted hospitalization rate due to alcohol use among Latinx adults was 1.9/10,000 versus 1.3 for all adults, with overall hospitalization rates rising between 2016-2018 and 2017-2019.[17] Likewise, the age-adjusted drug and opioid-involved overdose death rate in 2018-2020 was 19.8/100,000 for Black persons, versus 14.5/100,000 for the overall population.[18] In fact, drug-induced causes of death increased roughly 45% from 2009 to 2017 among Black persons in Harris County.[4]

The *Helping Everyone Achieve a LifeTime of Health (HEALTH) Center for Addictions Research and Cancer Prevention* (HEALTH-RCMI) at the University of Houston was founded in 2020 to address disparate health outcomes, with a heavy emphasis on racial and ethnic health disparities related to substance abuse and cancer. Given the statistics discussed above, we expect Houston's Black and Latinx populations to be the predominant populations comprising the community on which the HEALTH-RCMI focuses. However, the HEALTH-RCMI's work is not limited to Black and Latinx populations or to substance use and cancer. The National Institute on Minority Health and Health Disparities (NIMHD), an institute of the National Institutes of Health (NIH) which funds the HEALTH-RCMI, defines a health disparity as a health difference that adversely affects disadvantaged populations based on one or more of the following categories of health outcomes: higher incidence/prevalence; premature and/or excessive mortality in diseases where populations differ; burden of disease measured by disability-adjusted life years; poorer health-related quality of life and/or daily functioning using standardized self-report measures.[19] This definition is irrespective of race, ethnicity, or illness. Accordingly, the HEALTH-RCMI can support research into any health difference that adversely affects any disadvantaged population. For example, the HEALTH-RCMI's Pilot Grant Program (discussed in the succeeding paragraph) funded research investigating the disparate health outcomes faced by individuals with behavioral health disorders who smoke. Additionally, all faculty at the University of Houston conducting research on health disparities may apply to become affiliates of the HEALTH-RCMI. Affiliate status affords them access to most of the same HEALTH-RCMI resources as pilot grant re-

Figure 1
HEALTH-RCMI Organizational Chart



Note.
The present structure of the Helping Everyone Achieve a LifeTime of Health (HEALTH) Center for Addictions Research and Cancer Prevention at the University of Houston (U54MD015946)

cipients, except pilot research funding. Therefore, the HEALTH-RCMI's concept of "the community" likely will expand over time as it supports new pilot grant recipients and affiliates. Studies estimate an average time lag of 17 years between scientific discovery and clinical benefit to patients.[20,21] Those are 17 years of missed opportunities to translate scientific breakthroughs into interventions that improve patient and community health and mitigate the disproportionate burden of disease amongst minoritized groups. Accordingly, a key goal of the HEALTH-RCMI is to accelerate the translation of research results into policy and/or practice in the local community and beyond. The HEALTH-RCMI is funded by a 5-year, $11,848,265 grant from the NIMHD. The HEALTH-RCMI is one of 21 active Research Centers in Minority Institutions (RCMIs) currently funded by the NIMHD. The RCMI program advances NIMHD's mission to "lead scientific research to improve minority health and reduce health disparities."[22] Half of the RCMIs support basic, clinical, and behavioral research projects, with 33% supporting only basic and behavioral research projects, and 11% supporting only basic and clinical research projects.[23] To date, the HEALTH-RCMI has a behavioral research project, with plans of leveraging its pilot grant program to expand into basic biomedical and clinical sciences. The HEALTH-RCMI is housed in the HEALTH Research Institute,[24] a university-level research institute created in 2016 by Dr. Ezemenari M. Obasi and Dr. Lorraine R. Reitzel who led the grant application that funded the HEALTH-RCMI. Dr. Obasi, a Professor in the Department of Psychological, Health, and Learning Sciences of the College of Education at the University of Houston, is the principal investigator of the HEALTH-RCMI.

Since its inception in 2020, the HEALTH-RCMI has included an Administrative Core, a Research Infrastructure Core, an Investigator Development Core, its behavioral science research project, and a Community Engagement Core, as per the Request for Applications.[19] The cores and the behavioral science research project function collaboratively to achieve the HEALTH-RCMI's overall mission (Figure 1). The Investigator Development Core administers a pilot grant program that funds innovative studies led by Early-Stage Investigators

(postdoctoral fellows and faculty with budgeted research time) and ensures the resource economy, administrative compliance, and fiscal integrity of the funded studies by facilitating investigators' access to the HEALTH-RCMI's resources, including other investigators and cores. Pilot grant applications are reviewed by a scientific review group and the HEALTH-RCMI's Community Advisory Board (discussed below) and are awarded competitively following NIMHD review and approval in 2 cycles per year. The HEALTH-RCMI hosts quarterly innovative research talks at which pilot grant recipients present their research to audiences including, but not limited to, members of the CAB and CRAB, as discussed below.

Community Engagement Core

The heart of the HEALTH-RCMI is its Community Engagement Core (CEC), the subject of this paper. The CEC borrows many important principles from community-based participatory research (CBPR). CBPR is research in which researchers "listen to, learn from, solicit and respect the contributions of, and share power, information and credit for accomplishments with the groups they are trying [to] learn about and help."[25] Most studies do not involve any form of community engagement, much less a true partnership with the community as espoused by CBPR.[26] This traditional, non-participatory research has a long history of being problematic for the communities it is meant to help. Community members can feel detached from or left out of a process in which academics pontificate about them without their input. However, researchers and community members are likely to approach a single problem from different perspectives, each of which has validity. Researchers may focus on advancing science and publishing their work, whereas those in the community may be primarily concerned with achieving local improvements efficiently, even if incrementally.[27] Moreover, at times, researchers have carried out injustices against members of minority and marginalized communities, eroding trust between the 2 groups.[28,29] CBPR seeks to overcome these and other challenges by building meaningful, mutually beneficial partnerships between researchers and the communities they investigate. Community members can provide input on which topics should be studied, how to effectively design and implement studies in the community, and how to disseminate findings most efficiently and effectively (eg, at town halls and/or local newsletters rather than solely at scientific conferences and/or in peer-reviewed journals).[25] Evidence suggests that CBPR develops a trusting relationship between communities and researchers, sparking novel ideas and approaches, disseminating findings, and improving health outcomes.[27,30-32] Whereas researchers ideally would become part of the community, and community members part of the research team, CBPR in practice employs varying degrees of community-engaged partnerships as projects progress from conceptualization to dissemination.[27] The continuum model of community engagement in research considers various health equity indicators and contextual factors to describe research on a continuum ranging from "no community involvement" to " community driven/community led."[33] The type of community engagement supported by the HEALTH-RCMI is near the middle of the continuum. It is called "community participation"[33] because our community partners actively participate in all aspects of the research process but do not initiate, share equal responsibility for, or lead our research.

As previously noted, RCMIs are required to include a CEC. These are the community-based research arms of RCMIs, working to ensure that the community has a voice in research. Akintobi et al[23] surveyed representatives from the CECs of 18 of the 25 currently or formerly funded RCMIs (not including the HEALTH-RCMI). Only 18% had established their CEC 5 or more years ago, and 59% had done so within the prior 2 years,[23] at least partially reflective of changing NIMHD U54 core requirements. In addition to their unique histories, each RCMI has its own unique organizational structure, goals, and activities. The CEC of the HEALTH-RCMI initially was led by the current Investigative Development Core Director (in such capacity, the "Inaugural CEC Director"). The current CEC Director (hereafter, the "CEC Director") is a Professor at the University of Houston College of Medicine at the University of Houston. CEC staff currently include community liaisons, a part-time program coordinator, a part-time qualitative scientist, and, importantly, community health workers (CHWs). CHWs traditionally leverage their strong ties to the community to bridge gaps between the community and healthcare systems.[34] There is evidence that

the involvement of CHWs in community-based research confers a number of benefits, including increased awareness by investigators of the broader community context, increased community acceptance of proposed interventions, consideration of community perspectives and voices in the research process, enhanced participant recruitment and retention, and increased potential for the translation of proposed interventions to practice.[35] The CEC's CHWs, chosen based on their prior experience and their ability to represent the predominant populations comprising the community in which the HEALTH-RCMI works, are involved in designing and implementing all CEC programming. They spend more time coordinating and attending community events than other CEC staff so that they can maintain close, direct ties to the community and ensure that community perspectives are considered even in internal discussions among CEC staff members. Such community events have been limited by the ongoing COVID-19 pandemic, however, so the CHWs' roles have largely mirrored that of other CEC staff thus far, with some exceptions noted herein. In addition to working with community partners, the CEC staff works closely with the HEALTH-RCMI's biostatistician and graphic designer, and the other cores of the HEALTH-RCMI, to achieve the CEC's specific aims.

Specific aims of the HEALTH-RCMI CEC. The specific aims of the HEALTH-RCMI CEC include:

- Facilitate equitable, collaborative, and sustainable relationships between researchers and community members/other stakeholders to enable a bi-directional "exchange of information" that augments the potential impact of research findings for achieving health equity.
- Build and nurture trust within communities of interest to enable the recruitment and retention of underrepresented groups in research.
- Enhance the translation of research into practice through the timely and tailored dissemination of research findings to key stakeholders, including community partners, healthcare organizations, policymakers, and the scientific community.

The CEC seeks to achieve these specific aims by strategically implementing 2 community advisory boards, providing many helpful services directly to investigators, engaging the community across several social media platforms, preparing informative videos addressing timely health issues relevant to the community for dissemination to the public, and by deploying cohorts of student and community volunteers to both assist researchers and engage the community through health screenings and health promotion at community events. To ensure that research findings and health information are disseminated in a manner responsive to community needs, and in hopes of accelerating the translation of research into practice, the HEALTH-RCMI enables investigators to elicit the input of community members on how to disseminate such information.

Community Advisory Board and Community Research Advisory Board. Most RCMIs have realized the benefits of community-based research in the form of community advisory boards. Of the RCMIs represented in the Akintobi et al[23] paper, 88% report having formed an advisory committee. The HEALTH-RCMI's Community Advisory Board (CAB) was created by strategically expanding the community advisory board of the HEALTH Research Institute at the University of Houston to serve the HEALTH-RCMI's projects and priorities. The CAB consists of prominent leaders across various sectors in the greater Houston area. The CAB currently has 11 members, but this number can fluctuate as members leave the CAB or additional members are recruited. This group includes the Senior Research and Innovation Officer of the Episcopal Health Foundation, a faith-based health foundation, the Interim Executive Director of Center for Civic & Public Policy Improvement, a nonprofit organization dedicated to advancing policies that promote human, civic, social and economic justice, the President and Chief Executive Officer of Avenue 360 Health and Wellness, a Federally Qualified Health Center with 7 clinics in the Houston region providing primary, behavioral health, and dental care to medically underserved communities, a 31-year member of the Texas House of Representatives from a district located within Harris County, the Deputy Secretary for Public Affairs and Equity for the Washington State Department of Health, a manager on the Community Relations and Education team at MD Anderson Cancer Center and Co-chair of the African American Health Coalition, a non-profit organization dedicated to

promoting healthy lifestyles and advocating for healthy communities for people of African descent, a Director in the Center for Community-Engaged Translational Research at MD Anderson Cancer Center and Founder/Board Member of the Asian American Health Coalition, a non-profit organization dedicated to providing quality healthcare in a culturally and linguistically competent manner, the Senior Director and Chief Executive Officer of Change Happens, a non-profit organization providing a variety of programs focused on educating and enriching our youth, promoting pro-active healthcare measures and housing displaced families, a Co-leader of the Third Ward Complete Communities Health and Wellness workgroup, an initiative of the Mayor's Office focused on addressing unmet mental health needs and food insecurity in Houston's Third Ward, the Director of the Houston Health Department, and the Chief Executive Officer and Co-founder of The Rose, a non-profit organization that reduces deaths from breast cancer by providing access to screening, diagnostics, and treatment services to any woman regardless of her ability to pay. Further details about the CAB and its members are available on the HEALTH-RCMI website.[36]

The responsibilities of the CAB are to engage in strategic planning with the HEALTH-RCMI as a whole to identify community health needs, barriers, and solutions; to collaborate with the HEALTH-RCMI to establish a broad network of community partners; to ensure that the activities of each core of the HEALTH-RCMI, including the research supported by the Pilot Grant Program, are aligned with the needs of the community; and to have final approval authority over partnership, implementation, and dissemination activities that affect the community. The CAB convenes for 4 regularly scheduled quarterly meetings. Each CAB member is also expected to attend 2 Innovative Research Talks per year. Recognizing advisory board members' contributions through some form of compensation is believed to promote continued engagement in the partnership,[37] so each CAB member is provided with a modest annual honorarium in recognition of their effort.

Compared to the CAB, the HEALTH-RCMI's Community Research Advisory Board (CRAB), first convened in March 2021, comprises more frontline community leaders and laypersons and was assembled *de novo* to work collaboratively with the HEALTH-RCMI and its affiliated investigators. CRAB members were recruited based on their personal and professional connections to the HEALTH-RCMI's mission – their backgrounds are described below – and their ability to reflect the communities impacted by the racial/ethnic health disparities on which the HEALTH-RCMI is largely focused. The CRAB currently has 10 members, but this number can fluctuate as members leave the CRAB or additional members are recruited. Each CRAB member agrees to a one-year renewable term on the CRAB. This group includes: a Program Specialist in the accessibility services office at a local historically Black university and long-time local business owner, the Executive Director of the Texas Division of the American Liver Foundation, who has raised over $22 million in funds for the medical community over the past 30 years, the Director of the Center for Co-occurring Disorders at The Council on Recovery, whose career is devoted to advancing mental health and reducing substance use in the Latinx population, the Director of Project ECHO at the American Cancer Society, a cancer survivor with 15 years of experience designing, implementing, and evaluating public health programs and initiatives to address cancer awareness and disparities among the medically underserved, a generalist at the Texas Health & Human Services Commission, who has over 10 years of experience working with state and national tobacco prevention campaigns to curb youth tobacco and nicotine addiction, the Clinical Coordinator at the Billy T. Cattan Recovery Outreach Center, who provides day-to-day oversight to an adult outpatient substance use treatment program and its counselors, the Senior Pastor at Trinity East United Methodist Church, who holds several leadership roles in community organizations devoted to economic development in Houston, the Senior Pastor at Boynton United Methodist Church, who holds several leadership roles in community organizations dedicated to economic development in Houston, the Executive Director of the Billy T. Cattan Recovery Outreach Center, who has over 23 years of leadership experience in substance use prevention and substance use disorder treatment, and a Director at Legacy Community Health, who has more than 15 years of experience helping Houston non-profits organizations raise money for new clinics and programs. Further details about the CRAB and its

members are available on the HEALTH-RCMI website.[38]

The responsibilities of the CRAB are to advise individual investigators affiliated with the HEALTH-RCMI throughout all stages of the research process (eg, proposal, design, implementation, dissemination) on how to reach, retain, and impact their target communities through their work. The CRAB advises such investigators on how potential projects can be designed to reach the relevant community and address its identified needs, reviews project materials for lay-friendliness and clarity, provides feedback on research progress that is intended to enhance community participation and impact, facilitates investigators' ability to present their research to lay audiences with maximal clarity and impact, and provides feedback on dissemination materials that will be promoted to the community. To our knowledge, it is rare for institutions employing community-based research to grant faculty direct access to community advisory boards for assistance with their individual research projects. The Akintobi et al[23] paper notes that one undisclosed RCMI of the 18 surveyed supports a community-based research group that provides feedback to instructors, researchers, and students with respect to their research. Given that this is the lone such suggestion in the Akintobi et al[23] paper, and that no such practice is mentioned in other recent publications examining best practices at RCMIs,[39,40] we believe this approach – granting faculty individual access to the CRAB – to be rare even among RCMIs. The CRAB only meets when convened by investigators or CEC staff, so its exact role in addressing disparate racial and ethnic health outcomes will be determined by the requests that future pilot grant recipients and affiliates make of them. CEC staff and other HEALTH-RCMI staff will encourage investigators to involve the CRAB in all stages of their research projects.

Upon joining the CRAB, each member signs an agreement to keep confidential any information to which they become privy in their capacity as a member of the CRAB. Before the first CRAB meeting, we felt it important to ensure the effectiveness of the CRAB by making sure that each member felt empowered to fulfill their responsibilities. To this end, the Inaugural CEC Director and the HEALTH-RCMI's PI provided the CRAB members with an asynchronous, online training session that discussed the HEALTH-RCMI's mission and provided a broad overview of the HEALTH-RCMI and each of its cores. The training provided further detail about the CRAB, its purpose, and how it works with investigators. Details included discussion of CBPR, the research process, different types of research, the process of writing and procuring grants, and research ethics. This 7-module, 4.7-hour asynchronous, online training session was followed by live, online Q&A sessions during which each CRAB member had the opportunity to ask any remaining questions.

Rotating community advisory board meeting sites is believed to foster a sense of equity.[41] As all CRAB meetings to date have been conducted via online videoconferencing platforms due to the COVID-19 pandemic, we have attempted to foster that sense of equity by working with the CRAB members to schedule meeting times that would be best for the group. All CRAB members were polled for their availability, after which we established 2 different hour-long monthly meeting times. All CRAB members are invited to each meeting and provided with the relevant materials to prepare for each meeting, but, to respect the limited availability of these busy professionals, each CRAB member is only expected to attend one meeting per month. The CEC's CHWs serve as liaisons between investigators and the CRAB members, ensuring that CRAB members are aware of upcoming meetings and have access to all materials needed to prepare for each meeting. Meetings begin with investigators describing their work and asking the CRAB members the specific questions with which they would like assistance. For example, one investigator asked the CRAB for input on the readability and appeal of their recruitment flyers. Discussion is then moderated by CEC staff, as necessary. In response to the inquiry about recruitment flyers, one CRAB member commented that the flyers read more like dense public service announcements than recruitment materials. Another CRAB member shared a link at which the investigator could find royalty-free images to enhance the flyers' visual appeal. Yet another member pointed out that the flyers were recruiting an age range different than what had been approved in the grant. Within 24-48 hours of the conclusion of each CRAB meeting, CEC staff prepares and delivers to the relevant investigator a written summary of the discussion that occurred

during that meeting. This summary is also provided directly to the Investigative Development Core Director, who meets with pilot grant recipients to discuss, among other things, the implementation of feedback from the CRAB. Each CRAB member is provided a modest annual honorarium in recognition of their effort. The CEC's CHWs serve as contact persons to whom CRAB members can voice any immediate or ongoing concerns.

CEC services. In addition to access to the CRAB, the CEC offers many helpful services to investigators affiliated with the HEALTH-RCMI. Those services are grouped into 4 categories: (1) project design, (2) project execution, (3) dissemination, and (4) community outreach. Project design services include advice on designing research to address equity topics and reach diverse populations, generalized planning guidance, sharing of specialized knowledge about best practices for community-based studies, and sharing of qualitative expertise in identifying problems. Project execution services include sharing expertise on satisfying compliance guidelines, assistance with recruitment and retention of diverse community research participants, recommendations to enhance the impact of the research project, access to students trained to assist with the relevant research, and assistance in building community partnerships for data collection. Dissemination services include assistance with creating dissemination materials intended for diverse audiences and policy/ethics consultations for research results intended to be translated into policy recommendations. Community outreach services include hosting formal presentations to disseminate research results, newsletters highlighting research supported by the HEALTH-RCMI, and assistance in obtaining community letters of support. The CEC's CHWs have assisted with community outreach in numerous ways, including identifying healthcare providers willing to complete questionnaires and convening and/or conducting focus groups on behalf of investigators. Investigators interested in any of the services mentioned above submit formal requests to the HEALTH-RCMI, after which CEC staff will contact them as necessary to improve understanding of their request. Under the supervision of the CEC Director, CEC staff then works with the investigator and others to fulfill the service request. The CEC is intended to be flexible, and the full extent of its services is determined by the future pilot grant recipients and affiliates and the needs of their respective projects.

The CEC also offers services to community members affiliated with the HEALTH-RCMI. These services include the provision of meeting space, sharing of grant writing expertise, ethics consultations, staffing for community events, and access to various academic resources.

Social media. The CEC utilizes several social media platforms – Facebook, Instagram, Twitter, and LinkedIn – to engage the community. Social media, if used properly, can be effective outlets for disseminating health information.[42] Our presence on social media can play a role in minimizing the spread of misinformation that is prevalent on those platforms by increasing awareness of accurate health information.[43]

The CEC's social media posts address a broad range of health-related topics in hopes of establishing the HEALTH-RCMI as a trusted source of accurate and responsive health information. Posts are generally made to each platform at least once weekly but are made much more often if relevant, timely topics arise. Topics covered by our social media posts include, among other things, recruiting participants to studies affiliated with the HEALTH-RCMI, promoting accomplishments of our affiliated investigators and community partners, sharing webisodes (discussed below), sharing resources for food assistance and mental health, sharing information about upcoming COVID-19 testing or vaccination events, spreading awareness about different types of cancer and the related screening protocols, and discussion of opioid misuse to date. The CEC's Community Health Workers ensure that each of the HEALTH-RCMI's social media posts is relevant to the community and presented in an accessible format. Before any post is uploaded to any of the various platforms, its content is drafted by CEC staff, and its design is finalized with the assistance of the HEALTH-RCMI's graphic designer.

HEALTH-RCMI webisodes. The CEC began releasing a series of short YouTube videos, called webisodes, in November 2021. The webisode series (https://youtube.com/channel/UCiswxcyGUCY-2bAZrarMuXAQ/videos) was born out of conversations with the CRAB about how to best reach the community in light of the ongoing COVID-19 pandemic. Fearful that typical webinars may be

too long to keep laypeople engaged, we decided on 4-to-7-minute webisodes that would each be narrowly focused on a single topic of importance to the community. Webisodes, like social media posts, are opportunities to establish the HEALTH-RCMI as a trusted source of accurate and responsive health information for the community. Our goal is to use the platform to respond to changing community concerns with timely, high-quality, and easily digested video content accompanied by lists of relevant community resources. Presenters are recruited from the HEALTH-RCMI's network of academic and community experts. The CEC's Community Health Workers ensure that each webisode covers a topic relevant to the community and is presented in an accessible manner. The HEALTH-RCMI sends each webisode presenter a ring light and microphone so that they may record the highest quality video possible. CEC staff then work with the HEALTH-RCMI's graphic designer to produce the final product. Thus far, webisode topics have included holiday nutrition tips (presented by a nutrition specialist from a local supplemental nutrition assistance program), coping with the "holiday blues" (presented by a clinical associate professor in the Department of Behavioral and Social Sciences at the University of Houston College of Medicine), holiday cooking demonstration (presented by a chef from a local culinary institute focused on health), COVID-19 and alcohol use (presented by the HEALTH-RCMI principal investigator), and an explanation of the COVID-19 vaccines (presented by an assistant director from the local municipal health department).

Community and student cadres. A number of the CEC services mentioned above can involve providing trained students or community members to assist with research or community events. To that end, the CEC plans to implement community and student cadres. These cadres will be avenues through which University of Houston students and additional community members can become involved directly with the HEALTH-RCMI and its projects. The community cadre will be made up of volunteer community members who wish to participate in health-related community events (eg, health fairs). The student cadre will be made up of undergraduate students from the University of Houston who wish to get involved in either research or health-related community events. The University of Houston is designated as a Hispanic-Serving Institution and an Asian American Native American Pacific Islander-Serving Institution by the US Department of Education, has a significant representation of international students, and is one of the most racially/ethnically diverse public universities in the nation, providing a large and diverse pool of students interested in community-engaged work. All students working community events will do so on a volunteer basis, while those assisting with research will have the choice of doing so either on a volunteer basis or in exchange for academic credit. Participants in the community cadre or student cadre will receive training in which they are introduced to the purpose and structure of the HEALTH-RCMI, the functions of the CEC, and policies related to their service at the HEALTH-RCMI (eg, dress code, logging hours, etc). We have drafted applications to join both cadres, orientation/training materials, operating procedures, hours logs, and evaluation forms. The CEC's CHWs will be involved in recruiting and managing both cadres. However, due to the ongoing COVID-19 pandemic, neither cadre has yet been implemented.

The Present Paper

The Akintobi et al[23] paper described the goals of CECs at RCMIs across the US and broadly discussed the approaches they utilized to build trust within their respective communities. The HEALTH-RCMI had not yet completed its first year of operation when that paper was published and was not included in that paper. The purpose of this paper is to present a detailed account of the unique aims and engagement strategies of the CEC during the first 2 reporting years of the HEALTH-RCMI. Our results are discussed in relation to our specific aims, as described above. We offer suggestions on how researchers and policymakers can use this information to achieve World Health Organization and Healthy People 2030 priorities. We hope that this case study will prove helpful to others seeking to implement or improve community-engaged research initiatives to further community health.

METHODS

Evaluating the CAB

Most Qualtrics-delivered surveys of the CAB members have been in furtherance of their duties (ie, identifying community needs and HEALTH-

Table 1
CAB Kickoff Meeting Evaluation

CAB Kickoff Meeting	Mean (SD)/% [N]
After the Community Advisory Board (CAB) meeting held on 1/26/2021, I fully understand my roles and responsibilities as a CAB member.[a]	1.2 (0.4)
Overall, I am comfortable serving as a CAB member.[a]	1.2 (0.4)
I felt comfortable asking questions any time during the meeting. (Yes)	100.0 [6]
By the end of the meeting, I felt any questions I had were answered completely. (Yes)	100.0 [6]
We discussed the CAB's involvement in the Pilot Grant Program (PGP) review process. How would you rate your comfortability level with the purpose of your role in the PGP review process from the discussion?[b]	1.7 (1.2)
After the meeting, I felt I would have access to the appropriate HEALTH-RCMI personnel when questions or concerns arise about my CAB member responsibilities. (Yes)	100.0 [6]

Note.
[a]A scale of 1 (Strongly Disagree) to 5 (Strongly Agree); [b]A scale of 1 (Extremely comfortable) to 5 (Extremely Uncomfortable); SD: Standard Deviation, %: percentage; N: frequency

RCMI funding priorities and ranking pilot grant applications) rather than part of an effort to evaluate the effectiveness of the CAB in achieving the CEC's specific aims. However, each of the 11 CAB members was asked to complete a 6-item survey following the CAB's training session, referred to as the kickoff meeting. Each CAB member was asked whether they understood their roles and responsibilities as a CAB member, whether they were comfortable serving as a CAB member, whether they felt comfortable asking questions any time during the kickoff meeting, whether they felt any questions they had were answered completely by the end of the meeting, and whether they felt they would have access to the appropriate HEALTH-RCMI personnel when questions or concerns arose about their CAB member responsibilities. The survey also asked each CAB member to rank their comfort level with the purpose of their role in the Pilot Grant Program review process based on the discussion during the kickoff meeting. Lastly, the survey asked each CAB member to provide input as to how we might improve the CAB training and/or describe any unaddressed needs.

Evaluating the CRAB

Whereas other organizations utilizing community advisory boards may choose to focus on the expansions of those boards as a relevant metric,[39] we have chosen instead to focus on assessing the effectiveness of the CRAB vis a series of electronically administered Qualtrics surveys. We evaluated the CRAB's effectiveness by surveying both the relevant investigator and the CRAB members after each CRAB meeting. Surveys of a community advisory board serve as a standardized measure that enables re-evaluation of partnership processes over time.[37] Investigators responded to a 6-item Likert scale survey, wherein higher scores were more favorable than lower scores, about their experience with the CRAB. The items asked whether the CRAB seemed knowledgeable about the investigator's request for assistance, whether the investigator received the assistance they were expecting from the CRAB, whether the assistance received was helpful for their project, whether the service provided by the CRAB was valuable to them and/or their project, whether they were satisfied with the services received from the CRAB overall, and whether they would recommend the CRAB to colleagues. Cronbach's alpha for these 6 items in this sample was 0.89. We also tracked the time between investigators requesting a CRAB meeting and the conducting of such meeting.

CRAB members responded to a 5-item Likert scale survey, wherein higher scores were more fa-

Table 2
CRAB-related Evaluations

Item Descriptions	Mean (SD)
CRAB Service Evaluation by Investigators	
The CRAB seemed knowledgeable about my request for assistance.	4.7 (0.5)
At a minimum, I received the assistance I was expecting from the CRAB.	4.5 (1.2)
The assistance I received from the CRAB was helpful for my project.	4.2 (1.2)
The service provided by the CRAB was valuable to me/my project.	4.5 (0.6)
Overall, I was satisfied with services received from the CRAB.	4.7 (0.5)
I would recommend the CRAB to my colleague(s).	4.7 (0.5)
Service completion time (days)	14.0 (5.2)
CRAB Meeting Feedback by CRAB Members	
I felt the meeting time was used effectively.	5.0 (0.0)
The materials provided to me in advance of the meeting were helpful.	5.0 (0.0)
During the meeting, I felt comfortable engaging and providing feedback.	5.0 (0.0)
I felt the feedback I provided was taken seriously.	5.0 (0.0)
By the end of the meeting, I felt any questions/concerns I had about the project were addressed.	4.9 (0.3)
CRAB Member Training Feedback	
CRAB Training Score (possible range: 0-20)	16.4 (2.2)
The training and Q&A session adequately prepared me to provide research feedback as a member of the CRAB.	4.0 (0.9)
I am confident in my ability to provide research feedback.	4.3 (0.5)
I possess the competence to provide research feedback.	4.4 (0.5)
I can provide useful and effective research feedback.	4.4 (0.5)

Note.
A scale of 1 (Strongly Disagree) to 5 (Strongly Agree); SD: Standard Deviation

vorable than lower scores, about their perception of the meeting. The items included whether they felt the meeting time was used effectively, whether any materials provided to them in advance of the meeting were helpful, whether they felt comfortable engaging and providing feedback during the meeting, whether they felt the feedback they provided was taken seriously, and whether they felt any questions and/or concerns they had about the project were addressed by the end of the meeting. These survey results were reviewed by the CEC Director and staff following each meeting so that any immediate concerns could be addressed, and they are also regularly reviewed cumulatively to assess the continued overall effectiveness of the CRAB.

Each of the 10 CRAB members was also asked to complete a 26-item survey regarding the initial training provided to them by the Inaugural CEC Director and the principal investigator of the HEALTH-RCMI in January 2021. Most of the items were questions intended to assess whether they left the training with a basic understanding of the material presented. Questions of this nature asked them, for example, to identify which HEALTH-RCMI core houses the CRAB, how often the CRAB convenes, and key considerations in reviewing research projects and in disseminating the results of such projects. This assessment consisted of 20 items, and respondents received one point for each question answered correctly. Another por-

Table 3
CEC Services Satisfaction Evaluation

CEC Service Evaluation	Mean (SD)			
	All (N = 10)	Outreach (N = 3)	Execution (N = 4)	Dissemination (N = 3)
The CEC seemed knowledgeable about my request for assistance. [a]	4.8 (0.4)	5.0 (0.0)	4.5 (0.6)	5.0 (0.0)
At a minimum, I received the assistance I was expecting from the CEC. [a]	4.9 (0.3)	5.0 (0.0)	4.8 (0.5)	5.0 (0.0)
The assistance I received from the CEC was helpful for my project. [a]	4.8 (0.4)	5.0 (0.0)	4.50(0.6)	5.0 (0.0)
The service provided by the CEC was valuable to me/ my project. [a]	4.8 (0.4)	5.0 (0.0)	4.5 (0.6)	5.0 (0.0)
Overall, I was satisfied with the services received from the CEC. [a]	4.8 (0.4)	5.0 (0.0)	4.5 (0.6)	5.0 (0.0)
I would recommend the CEC to my colleague(s).[a]	4.9 (0.3)	5.0 (0.0)	4.8 (0.5)	5.0 (0.0)
Service completion time (days)	15.9 (14.4)	14.3 (5.9)	26.3 (17.4)	3.7 (3.1)

Note.
[a]A scale of 1 (Strongly Disagree) to 5 (Strongly Agree); SD: Standard Deviation

tion of the survey gauged how each CRAB member felt about the training provided. This took the form of a 4-item Likert scale survey asking whether the training and subsequent Q&A session adequately prepared them to provide research feedback as members of the CRAB, whether they were confident in their ability to provide research feedback, whether they possessed the competence to provide research feedback, and whether they could provide useful and effective research feedback. Cronbach's alpha for these 4 items in this sample was 0.86.

Investigator Evaluation of CEC Services

The effectiveness of CEC services is evaluated similarly to that of the CRAB. Following the receipt of CEC services, investigators respond to a 6-item Likert scale survey about their experience. The items ask whether the CEC seemed knowledgeable about the investigator's request for assistance, whether the investigator received the assistance they were expecting from the CEC, whether the assistance received was helpful for their project, whether the service provided by the CEC was valuable to them and/or their project, whether they were satisfied with the services received from the CEC overall, and whether they would recommend the CEC to colleagues. We also tracked the time to complete each CEC service request.

Evaluating Social Media

The effectiveness of the CEC's social media presence is evaluated in terms of the engagement observed on each platform. On each of Facebook, Instagram, and LinkedIn, this was accomplished by tracking the number of new followers or connections each month and by tallying the total number of followers or connections at a given time. Similarly, Twitter engagement was evaluated by tracking the number of new followers each month and by calculating the total number of followers at a given time. Twitter engagement is also assessed by counting the number of monthly and cumulatively impressions. A Twitter impression is any time that a tweet is seen. Impressions include any time that a particular tweet appears in a follower's timeline, any time said tweet appears in any user's search results, and any time that any user likes said tweet.

Evaluating Webisodes

Webisodes were evaluated by tracking the number of times that they were viewed. The total number of

Table 4
Number of Webisode Views from Date of Publication through March 15, 2022

Webisode Title	Health & the Holidays	Holiday Blues with Maureen Grisson	Holiday Cooking with Chef Joe	COVID Dr. Faith
Published Date	11/24/2021	12/21/2021	12/23/2021	2/25/2022
YouTube	103	27	18	19
Instagram	29	9	5	23
Twitter	N/A	137	53	8
Facebook	147	6	6	10

views includes views on YouTube and views on other social media platforms to which the YouTube videos are shared (ie, Facebook, Instagram, and Twitter).

Data Analysis

Data evaluating the CEC were reported in the form of descriptive statistics, including means, standard deviations, percentages, and frequencies, given the use of face-valid single items, not validated scales. All analyses were conducted using SAS 9.4 (SAS Institute, Cary, NC). Table notes indicate the scale anchors for each item administered.

RESULTS

Community Advisory Board

Table 1 presents the means and standard deviations, or percentages and frequencies, of each of the 6 CAB kickoff meeting evaluation survey items. The mean ratings in response to the prompts were 1.17 (SD = 0.41) to 1.67 (SD = 1.21) (N = 6) (1 = strongly agree/extremely comfortable), and all respondents (100%) endorsed "yes" to 3 binary questions, including "I felt comfortable asking questions any time during the meeting;" "By the end of the meeting, I felt any questions I had were answered completely;" and "After the meeting, I felt I would have access to the appropriate HEALTH-RCMI personnel when questions or concerns arise about my CAB member responsibilities."

Community Research Advisory Board

Table 2 summarizes the feedback received from investigators evaluating CRAB services, CRAB members evaluating CRAB meetings, and CRAB members evaluating the initial CRAB training and completing knowledge assessments related to the same. Of the 6-item Likert scale survey through which investigators evaluated the services offered by the CRAB, the mean rating for each item was above 4 (ie, agree), with those means ranging from 4.17 (SD = 1.17) to 4.67 (SD = 0.52) (N = 6), indicating satisfaction with CRAB service provision as reported by investigators. The mean number of days to complete CRAB service requests was 14 (SD = 5.15; N = 6). With respect to the CRAB members' evaluation of CRAB meetings, the mean rating for each of the 5 positively worded items was between "agree" and "strongly agree" (N = 9), indicating satisfaction with CRAB meetings as reported by CRAB members in attendance. The mean score of the knowledge assessment administered following the initial CRAB training was 16.38 (SD = 2.20, maximum possible score: 20; N = 8). In addition, the training provided by the HEALTH-RCMI was rated highly by the CRAB members, with the means for each item ranging from 4.00 (SD = 0.93) to 4.38 (SD = 0.52) (N = 8).

CEC Services

Table 3 presents descriptive statistics of the CEC service provision evaluations, overall and by service type. The mean rating for each item was above 4 (ie, agree), with those means ranging from 4.78 (SD = 0.44) to 4.89 (SD = 0.33) overall (N = 10). Outreach: 5.00 (SD = 0.00; N = 3), Execution: 4.50 (SD = 0.58) to 4.75 (SD = 0.50) (N = 4), and Dissemination 5.00 (SD = 0.00; N = 3). The mean

number of days to complete CEC service requests was between 3.67 (SD = 3.06; N = 3) and 26.25 (SD = 17.35; N = 4) by different service request categories and 15.90 (SD = 14.43; N = 10) overall.

Social Media

From February 2021 through March 2022, the HEALTH-RCMI accumulated 15 Facebook followers, 108 Twitter followers, 44,293 Twitter impressions, 120 Instagram followers, and 88 LinkedIn connections.

Webisodes

Four webisodes were published between November 24, 2021, and March 15, 2022, and the ranges of views differed for each social media platform and in relation to the length of time since publication on each such social media platform (YouTube: 18-103; Instagram: 5-29; Twitter: 53-137; Facebook: 6-147) (Table 4).

DISCUSSION

This paper describes the early activities of the CEC of the HEALTH-RCMI, a NIMHD-funded RCMI established at the University of Houston in 2020 to address, among other things, disparate racial and ethnic health outcomes among those impacted by substance abuse and cancer. The CEC is the community-based research arm of the HEALTH-RCMI, working to ensure that the community has a voice in the research done at the HEALTH-RCMI. Strategies employed to accomplish this include implementing 2 community advisory boards (the CAB and CRAB), providing numerous CEC services to investigators affiliated with the HEALTH-RCMI, maintaining an active social media presence, and publishing timely and topical webisodes. Many of these strategies are consistent with the best practices of other RCMIs[39] or of organizations focused on disseminating health information.[42] This paper presents the outcomes of our CEC activities so far relative to the 3 specific aims of the CEC and information that may be helpful to institutions or organizations seeking to implement community-based research.

Achieving the CEC's Specific Aims

The first specific aim of the CEC is to facilitate equitable, collaborative, and sustainable relationships between researchers and community members/other stakeholders to enable a bi-directional "exchange of information" that augments the potential impact of research findings for achieving health equity. The CEC facilitates relationships between researchers and community members/other stakeholders through its CAB and CRAB and its provision of CEC services. The CAB consists of prominent leaders across various sectors in the greater Houston area. In addition to other duties, each CAB member is expected to attend 2 Innovative Research Talks per year, at which they may interact directly with researchers. The CRAB consists of frontline community leaders and laypersons. CRAB meetings are held twice monthly and allow investigators and CRAB members to ask questions about the research presented and how to maximize its impact in achieving health equity. CEC services are broad and have included identifying and liaising with community organizations with expertise relevant to affiliated investigators' research. Of investigators surveyed following CRAB meetings, the mean ratings in response to items indicating satisfaction with the services received from the CRAB and whether the investigator would recommend the CRAB to colleagues both fell between "agree" and "strongly agree." Additionally, all HEALTH-RCMI affiliates surveyed following their use of the CEC's outreach services "strongly agree[d]" with items indicating satisfaction with the services received from the CEC and whether the investigator would recommend CEC services to colleagues. However, the sample size for such outreach service surveys is small (N = 3). To date, the CEC has used such surveys to track satisfaction with its services. The CEC has not yet established other metrics to track its proficiency in providing services. For example, the CEC asks investigators if they are satisfied with recruitment and retention efforts but does not assess those efforts by evaluating number of people contacted, number of participant withdrawals, etc. This is partially because the CEC to date has focused on the trust and relational aspects of community engagement and partially because the HEALTH-RCMI's pilot grant recipients and Affiliates are in the early stages of their research. Recruitment and retention efforts have been minimal thus far. As the existing projects proceed and the HEALTH-RCMI recruits additional investiga-

tors, it will be important to evaluate CEC services more thoroughly to assess and articulate their value to both investigators and the community. All CRAB members surveyed following CRAB meetings "strongly agree[d]" that they felt their feedback was taken seriously. The mean rating in response to the item indicating whether any questions/concerns they had about the project were addressed by the end of the meeting fell between "agree" and "strongly agree." Overall, responses from both investigators and CRAB members suggest the development of equitable, collaborative, and sustainable relationships between researchers and community members. Tailoring the surveys to ask more directly whether respondents felt the CEC had facilitated an equitable, collaborative, and sustainable relationship between the investigator and community members would likely provide more probative data concerning the CEC's first specific aim in the future; data collection will be adjusted in this regard.

The second specific aim of the CEC is to build and nurture trust within communities of interest to enable the recruitment and retention of underrepresented groups in research. The CEC builds and nurtures trust within the community through its CAB and CRAB, as well as through its maintenance of a social media presence and publication of webisodes. Whereas CAB and CRAB input is helpful to investigators in designing, implementing, and disseminating their research, the inclusion of community members in the process fosters trust in research within the community.[27,30] Our social media posts and webisodes promote community health and are feasible during a global pandemic when in-person activities like health screenings and health fairs may be risky. Our social media posts also share research done by HEALTH-RCMI-affiliated investigators, celebrate the HEALTH-RCMI's and its affiliates' accomplishments, and inform followers of health-related events and resources (particularly in response to topical events that can affect health and health behaviors, such as the winter holidays). In so doing, we seek to establish ourselves as trusted champions of the community and as a highly visible source of accurate health information. We have reached 66-198 viewers through each of our webisodes (which were only recently posted), and we reach 15-120 followers through each of our social media posts (which have existed since the formation of the HEALTH-RCMI). In both cases, there is room for improvement in our reach. To that end, it may be helpful to determine what content is most appreciated by existing followers, directly communicate with the community to inform future content, and investigate additional efforts to best market such content to attract new followers. Houston has a large Spanish-speaking population so we occasionally post social media content in Spanish. Posting more, if not all, content in both English and Spanish may increase viewership. Another suggestion is to post to LinkedIn as frequently as we post to the other platforms or to explore other opportunities better use LinkedIn to bolster our overall social media presence. Survey responses by CRAB members suggest the development of trust within the community, but we are drawing inferences from their responses to survey prompts about whether they feel their feedback was taken seriously and whether all of their questions/concerns about the project were addressed. Notably, both the HEALTH-RCMI and individual investigators have indeed taken the CRAB's feedback seriously. With respect to the HEALTH-RCMI, this is evidenced by the CEC sharing the CRAB's feedback with the Investigator Development Core Director so that she may discuss the implementation of such feedback with pilot grant recipients. With respect to individual investigators, this has been evidenced by their implementation of the CRAB's recommendations and their subsequent return to the CRAB to discuss the process and results of such implementation, steps that we believe complement our efforts to build trust within the community. Tailoring the post-CRAB meeting survey sent to CRAB members to ask more directly whether respondents felt that they could trust researchers likely would provide more probative data with respect to the CEC's second specific aim in the future. Additionally, involving the CRAB in selecting webisode topics and directly soliciting their feedback on the final product may be helpful for future webisodes. Likewise, moving beyond objective metrics of views, impressions, and others to encourage formal and informal feedback from the community about the webisodes may help enhance understanding of their impact. Additionally, other media can be used in the future (eg, Facebook Live) to host events where the public can interact with the experts featured within them in real-time, potentially enhancing engagement and impact.

The third specific aim of the CEC is to enhance the translation of research into practice through the timely and tailored dissemination of research findings to key stakeholders, including community partners, healthcare organizations, policymakers, and the scientific community. The CEC enhances the translation of research into practice through its CAB and CRAB, as well as through its provision of CEC services and its maintenance of a social media presence. The CAB collaborates with the HEALTH-RCMI to establish a network of community partners. Furthermore, the CAB ensures that the activities of the HEALTH-RCMI are aligned with the community's needs and has final approval authority over partnership, implementation, and dissemination activities that affect the community. CAB members will be present at Innovative Research Talks and may discuss with investigators how to best disseminate their research. The CRAB also will review dissemination materials and advise on the most effective way to disseminate research results, although the extant pilot and the behavioral health project are not yet ready for this step. Many available CEC services relate to disseminating research, including assisting with the dissemination of materials from affiliated investigators. All of the HEALTH-RCMI affiliates using the CEC's dissemination services "strongly agree[d]" with each of the 6 positively worded items in the post-service survey, including those indicating whether the service received from the CEC was valuable to their project and whether the affiliate would recommend CEC services to colleagues. The sample size for such dissemination service surveys, however, is small (N = 3). Social media posts represent one of potentially several ways to disseminate research results to a large audience of interested community members. It will be important to pursue both passive and active dissemination strategies. Although we have laid the foundation for efficient translation of research into practice, the HEALTH-RCMI is still fairly new. We have had limited opportunities to disseminate research results or evaluate how efficiently or effectively we do so.

The CEC's 3 specific aims are facilitating relationships between researchers and community members, building and nurturing trust within the community, and enhancing the translation of research into practice. None of these aims are static targets. Rather, they are operating philosophies that guide the CEC's activities. For example, we will never be done building trust within the community; that trust must be earned and renewed continuously. Whereas we have made strides in achieving each of the 3 specific aims, lessons were learned that could enhance future efforts to implement community-based research and research-to-community dissemination. The HEALTH-RCMI is relatively new, and its entire existence has coincided with the COVID-19 pandemic. Our data are collected from a relatively small sample, primarily due to the HEALTH-RCMI's youth and partly due to the pandemic hindering some CEC activities (eg, the ability to host or attend community events). All of the data presented herein will be continually evaluated as the HEALTH-RCMI grows. In assessing the achievement of our specific aims, we have not directly measured relationship-building or trust. Instead, we draw many inferences from survey responses that suggest the development of relationships and the establishment of trust. Tailoring future surveys to explicitly ask respondents about their perception of the CEC's facilitation of relationships and establishment of trust (eg, "I feel that my community can trust this researcher" or "I am now more inclined to trust researchers affiliated with the HEALTH-RCMI") would allow more direct assessment of our progress toward these aims. The effectiveness of our social media presence would likely be bolstered by leveraging LinkedIn and posting more Spanish-language content across all platforms.

Conclusions

Early results of the CEC's activities may inform other efforts to implement community-based research that facilitates relationships between researchers and community members, builds and nurtures trust within the relevant community, and/or enhances the translation of research into practice. The CEC has begun facilitating relationships and establishing trust and has laid the groundwork for efficient translation of research. Such efforts include granting faculty access to the CRAB for assistance with the proposal, design, implementation, and dissemination of their individual research projects, a potentially fairly unique service offered within extant RCMIs.[23] The CEC may serve as an evidence-based early model for nascent organizations with similar goals.

IMPLICATIONS FOR HEALTH BEHAVIOR OR POLICY

Our work addresses priority health topics identified by both Healthy People 2030 (HP 2030) and the World Health Organization (WHO). HP 2030 notes disparate cancer outcomes across racial/ethnic groups and sets the reduction of new cases of cancer as one of its goals.[44] HP 2030 also sets a goal of reducing drug and alcohol addiction.[45] The program identifies prevention strategies at the school, family, and community levels as keys to accomplishing the latter.[45]

The WHO has identified alcohol, drug, or tobacco use as a risk factor in morbidity and/or mortality.[46-48] The WHO also has identified the aforementioned as contributing to a host of other health and societal harms.[46-48] In addition, the WHO has identified cancer prevention as "the most cost-effective long-term strategy for the control of cancer."[49] At the 58th World Health Assembly in 2005, the WHO passed resolutions urging its member states to, among other things, give priority to research on cancer prevention.[50] At the 70th World Health Assembly in 2017, the WHO passed resolutions urging its member states to, among other things, "promote cancer research to improve the evidence base for cancer prevention and control, including research on health outcomes, quality of life and cost-effectiveness."[51]

In furtherance of the WHO and HP 2030 priorities identified above, we recommend that researchers and policymakers take the following actions:

- Researchers doing work that purports to address health disparities or otherwise impact groups historically underrepresented in research should convene a community advisory board and solicit input at all stages of the research process (ie, design through dissemination).
- Researchers who regularly do the type of work described in item 1 above should strive to build trusting, supportive relationships with the community partners that make up their advisory board. Efforts to do so should begin with asking those partners which issues are important to them and the communities they represent.
- Building trust should be viewed as a continuous process, and researchers should develop tools that regularly and directly ask community partners about their level of trust.
- Community advisory board members should be provided training on the research process and their expected role.
- Researchers should ensure that community partners understand their contributions are valued. This could involve nominal monetary compensation for their efforts.
- Researchers should endeavor to minimize any burden or inconvenience to community advisory board members. This could involve enlisting their input to establish convenient meeting times, alternating meeting times and locations, meeting virtually, and/or providing succinct and helpful materials for members' review in advance of meetings.
- Social media and their reach into the community should be leveraged by any researchers regularly investigating health disparities or historically underrepresented groups. Not only may this keep researchers abreast of topical issues in the community, but a record of accomplishment of regard for the community may help establish trust with community partners.
- In addition to requiring RCMIs to include CECs, NIMHD should mandate that all such CECs employ community advisory boards.
- The NIH should extend the community advisory board requirement referenced in item 8 above to all grants funding research that purports to address health disparities or otherwise impact groups historically underrepresented in research.
- Other national and state agencies funding research that purports to address health disparities or otherwise impact groups historically underrepresented in research should mandate that recipients employ community advisory boards.
- Colleges and universities located in or near communities historically underrepresented in research should encourage faculty to engage in community-based research whenever possible.
- Offices of research at colleges and universities

should consider forming community advisory boards and making them available to faculty for the purposes described in item 11 above.

- Colleges and universities should facilitate mentoring relationships between early-career investigators and those more experienced with community-based research.

Some racial and ethnic groups perpetually experience disparate health outcomes, including those related to substance abuse and cancer diagnoses. Researchers investigating these disparities can more effectively address them by involving members of the impacted communities in the research process, and policymakers can assist their communities by implementing policies that encourage or require researchers to do so.

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Human Subjects Approval Statement

The University of Houston Research Integrity and Oversight Office, which houses the IRB office, reviewed the grant underlying this work at the time of funding and determined that data gathered specifically for internal program evaluation did not meet the definition of research under 45 CFR 46.102. as such, no IRB review or approval was required for the data presented herein.

Conflicts of Interest Disclosure Statement

Ezemenari M. Obasi is the founder and sole owner of HEALTH Equity Empowerment, LLC.; the authors have no additional conflict to report. The funders had no role in the collection, analyses, or interpretation of data, in the writing of the manuscript, or in the decision to publish the results.

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