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Engaging the Asian American Community to Address Cancer Burden: Experiences and Lessons Learned

Kamisha H. Escoto, PhD[1*]; Cassandra S. Diep, PhD[2*]; Monalisa Chandra, PhD[3]; Beverly J. Gor[4], EdD, RD, LD; Tuong-Vi Ho, PhD[5,6]; Yunee Park[2]; Alyssa B. Cahoy[2]; Lynne Nguyen, MPH[7]; Maria Reynolds, BA[8]; Andrea Caracostis, MD[9]; Lorna H. McNeill, PhD, MPH[7]

[1]George R. Brown School of Engineering, Rice University; [2]Kinesiology Department, Rice University; [3]Indian American Cancer Network; [4]Asian American Health Coalition; [5]College of Nursing, Texas Woman's University; [6]Vietnamese American Nursing Association; [7]Department of Health Disparities Research, The University of Texas MD Anderson Cancer Center; [8]The University of Texas Southwestern Medical School; [9]HOPE Clinic

*At time of research both Drs. Kamisha Escoto and Cassandra Diep were part of the Department of Health Disparities Research, The University of Texas MD Anderson Cancer Center

Corresponding Author:
Kamisha H. Escoto, PhD
George R. Brown School of Engineering
Rice University
6100 Main St.
Houston, TX 77005-1827
E-mail: Ke25@rice.edu

Submitted 6 May 2022, revised 17 November 2022, accepted 5 February 2023.

Escoto, K.H., Diep, C.S., Chandra, M., Gor, B.J., Ho, T., Park, Y., Cahoy, A.B., Nguyen, L., Reynolds, M., Caracostis, A., McNeill L.H. (2022) Engaging the Asian American Community to Address Cancer Burden: Experiences and Lessons Learned. *Progress in Community Health Partnerships*. (Forthcoming)
27 February 2022.

ABSTRACT:

Background: Reducing cancer health disparities in Asian Americans requires orchestrated efforts and partnerships.

Objectives: To describe the approach used by the University of Texas MD Anderson Cancer Center, HOPE Clinic, and Asian American organizations to understand and engage Houston's Asian American communities in cancer research, as well as to share lessons learned.

Methods: The community-academic-medical partnership used community-based research principles to build the partnership, form the Community Advisory Board, conduct a community needs assessment, and offer cancer prevention engagement and education.

Results: Some lessons learned included balancing language needs with limited resources, incorporating more time and resources to conduct health research in an ethnically diverse community, and promoting awareness of research and its role in cancer prevention in Asian American communities.

Conclusions: Community-academic-medical partnerships are promising ways to engage the community, draw on combined expertise, and create research and programs that are scientifically strong and meaningful to the community.

KEYWORDS: Community health partnerships, Health disparities, Health promotion, Process issues, Community-Based Participatory Research, Public Health, Asian Americans, Cancer Prevention

Introduction

Asian Americans are the fastest-growing racial group in the U.S. and are projected to become the nation's largest immigrant group by 2055.[1,2] Of the 22 million Asian Americans in the U.S., around 1.7 million live in Texas.[3] Houston, whose Asian American population is growing faster than the national rate, has over one-third of the Asian American population in Texas. Compared to San Francisco, New York City, and other metropolitan areas with concentrated Asian American populations, Houston's population comprises more recent immigrants because of amendments in the 1965 Immigration and Nationality Act.[4] For example, Vietnamese immigrants - the second largest Asian ethnic group in Houston[3] - first came to Houston as refugees after the fall of Saigon in 1975.[5] The swift rise of Asian American populations makes finding ways to reduce their disease burden all the more urgent.

Asian Americans are the only racial/ethnic group in the U.S. with cancer as the leading cause of death for men and women. Cancer has been the leading cause of death for this group since 2000.[6] From 2014-2018, the greater Houston area held approximately 44% of Asian American cancer cases in Texas.[7] Unlike other racial/ethnic groups, cancers with infectious origins (e.g., liver, cervical, stomach) account for most Asian American cancer diagnoses.[6] Additionally, Asian Americans face an increased risk of developing "Western" cancers due to sedentary and dietary lifestyles predominant in American culture.[6] Specifically, colorectal and breast cancer incidence rates are significantly higher among Asian Americans who have resided in the U.S. for more than 10 years, versus those who immigrated more recently.

Many factors may contribute to the cancer burden among Asian Americans.[6,8] For example, the persistent stigma against the term "cancer" in many Asian American cultures discourages health-seeking behaviors.[8–10] Asian Americans participate least in screening, are less likely to seek medical help from a physician, and face barriers to accessing care, making it more difficult to implement preventative strategies or identify cancer during early stages. Other factors, such as smoking and exposure to carcinogens, can further contribute to development of cancers.[6,8]

Existing research on engaging Asian Americans to address cancer burden is scarce. The "model minority" myth (i.e., the generalization of Asian Americans as a monolithic, well-off group) has led to a lack of culturally-adapted programs.[6] The media portrayal of Asian Americans as the "model minority" discounts numerous subgroups, for which there are spectrums of educational levels, socioeconomic statuses, and health risks. Researchers must disaggregate data to better understand the unique needs of each subgroup and design effective interventions accordingly. With the growing number of cancer deaths among Asian Americans and the lack of research and awareness surrounding the unique cancer burden of this group, creating sustainable strategies is crucial for addressing Asian American cancer health disparities.

Reducing cancer health disparities for Asian Americans requires orchestrated efforts and partnerships, which build on the combined expertise of academics, community members, and medical professionals.[8,11] In 2017, the University of Texas MD Anderson Cancer Center (MDA) partnered with HOPE Clinic, a federally qualified health center in Houston that serves a large proportion of Asians. Additional partners included community organizations with vested interests in Asian American health. This community-academic-medical partnership was funded by a Pipeline to Proposal (P2P) Award from the Patient-Centered Outcomes Research Institute (PCORI) and sought to lay the groundwork to develop strategies for addressing cancer risk and prevention in the five largest Asian communities in Houston: Indians, Vietnamese, Chinese/Taiwanese, Filipinos, and Pakistanis. This paper describes the partnership-building approach used by MDA, HOPE Clinic, and multi-ethnic Asian American organizations to better understand community cancer prevention and to engage Houston's Asian American communities in cancer research. Lessons learned along the way are shared, which may benefit others interested in sustainable community-academic-medical partnerships to advance research in underserved populations.

Methods

Building the Partnership

The partnership between MDA and HOPE Clinic officially began in 2002, when HOPE Clinic was established by the Asian American Health Coalition (AAHC) to provide culturally and linguistically competent care for Houston's underserved Asian communities. The AAHC included members active in health disparities research at MDA, thus influencing HOPE Clinic's strong focus on research since its founding. Over the years, HOPE Clinic's clinical leadership and MDA faculty have collaboratively developed cancer prevention research grants and projects. MDA and HOPE Clinic partnered again in 2016 to prepare and submit a PCORI P2P proposal to bring together leaders from Houston's Asian American communities for cancer prevention.

In anticipation of funding, the research team from MDA and HOPE Clinic (henceforth "the research team") leveraged their networks to meet with representatives from the Indian American Cancer Network (IACAN), AAHC, Philippine Nurses Association of Metropolitan Houston (PHAMH), Light and Salt Association, Vietnamese American Nursing Association, and the Vietnamese American Medical Association of Greater Houston (VAMA). Here, the groups built rapport and initiated conversations on cancer disparities, community needs, and mutual interests. Community members highlighted the need to understand cancer prevalence and cancer prevention, clinical trial participation, and health literacy in the Asian American communities. Once the project was officially funded, the research team reconnected with these representatives to launch the project in 2017. From grant development to project implementation, the research team referenced principles of community-based research to build the partnership, including building on strengths and existing resources in the community, intentional collaboration throughout all phases of the project, and integrating knowledge and action through community outreach.[12]

Community Advisory Board Formation and Guidance

The core of the partnership was the Community Advisory Board (CAB). The CAB, representing the project's target Asian communities, was responsible for providing overall guidance and direction to the partnership, making strategic decisions, meeting regularly, and planning and participating in all partnership activities. The CAB also created the project's mission statement, shared vision, data management plan, and a Governance plan, which included member responsibilities and rules for decision-making to ensure project focus and smooth operations. Project decisions were made by vote, with final decisions based on support of at least 70% of CAB members present.

The research team established the CAB with representatives from IACAN, PNAMH, AAHC, VANA, VAMA; other community organizations were invited to join based on their recommendations. The CAB included 14 members led by two co-chairs: a community co-chair (the principal investigator from HOPE Clinic) and an academic co-chair (the principal investigator from MDA). While diverse, all CAB organizations provided health and social services to Asians in Houston and brought unique strengths for the partnership to build upon[12] (see Table 1). Five CAB members were caregivers for family members with cancer, and two were cancer survivors. Membership on the CAB evolved as the partnership matured, with members added as deemed necessary by current board members. Three CAB members transitioned out of their roles (largely due to time constraints) and were replaced by new members to ensure all communities remained represented. All CAB members received an honorarium for their participation.

Engagement Processes and Management

Consistent communication between the research team and the CAB ensured project progression and growth in trust and mutual respect. CAB meetings occurred monthly between October 2017 and September 2018, alternating between in-person (HOPE Clinic) and videoconferences. The research team and CAB members jointly determined the meeting schedule and logistics to reduce travel burden, while still enabling consistent connection. Additionally, a three-hour CAB retreat was held in January 2018. Meetings were agenda-driven, yet flexible. The research team provided general meeting facilitation, with open discussion and strong contribution from the CAB.[12] An overview of the CAB meetings, including topics discussed, are provided in Table 2.

An internal team of MDA and HOPE Clinic staff met weekly to support the project and partnership, follow up on action items, keep the lines of communication open, and complete detailed planning and implementation of the partnership's activities. Specifically, a project coordinator from MDA managed overall communications and CAB engagement – greatly supporting project operations, while cementing a solid relationship between the CAB and research team. Having this resource ensured genuine collaboration throughout the project.[12] The coordinator engaged the CAB using a combination of email and phone outreach for planning, communicating meeting/event reminders, and distributing community event information. CAB meeting minutes were recorded and distributed within one week of the meetings.

Between meetings, the CAB and research team maintained active communication, including sharing community events and making mutually beneficial connections. For example, the research team invited Asian Cancer Council members to join the Texas Cancer Coalition. As another example, the CAB network initiated a new collaboration focused on colon cancer advocacy with the American Cancer Society. Pre-existing relationships among CAB members strengthened, while new relationships also formed.

Community Needs Assessment

Early in the partnership, the CAB emphasized a need for data to understand cancer prevalence and prevention in the community. The CAB believed that research interventions in their communities should be driven by thoughtful and sound assessment of members' health, beliefs, attitudes, perceptions, and behaviors. This led the partnership to prioritize generating quantitative community-specific health data. The research team and the CAB decided to implement a health needs assessment survey in the five Asian American communities, and supplement with community interviews. The needs assessment aimed to identify key priorities and guide collaborative development of future research and funding proposals. Detailed planning – including desired population, methodology and survey topics, sample size, recruitment, compensation, and possibilities for language translation – occurred at the CAB retreat. The research team and CAB collaborated on survey development, and the CAB led participant recruitment.

Two generational cohorts were targeted: Millennials (ages 22-37) and Generation X'ers (ages 38-53). The CAB believed data from these cohorts would provide a broad overview of cancer prevention behaviors in the community, offer insights on how younger Asian Americans interpret health information from various sources (including the Internet), support future generations in making long-term behavior changes (e.g., cancer screening), and allow the partnership to learn from younger persons who have roles in educating and caring for the elderly. The target sample, determined by both the CAB and research team, was 250 community members (50 participants per Asian group). This sample was deemed practical for completion within the one-year timeframe and project resources available.

The needs assessment survey was self-administered and online, with a paper option available if needed. Originating from validated instruments,[13–19] questions covered a wide range of health and cancer prevention topics, including health care access, health behaviors/practices, tobacco use, diet and physical activity, cancer screening behaviors, cancer knowledge and beliefs, and caregiving. In addition, the CAB requested specific questions on caregiving, health beliefs, and health information-seeking behaviors due to limited existing data. Survey development and refinement was continual, with several CAB meetings devoted entirely to survey review. Both the research team and the CAB thoroughly discussed each content area of the survey and specific survey items. To further refine the survey, survey questions were tested for clarity and cultural relevance with community members, based on CAB recommendations and connections through MDA. Each CAB member also carefully reviewed and commented on clarity and cultural relevance. The final version took approximately 20 minutes to complete, with participants receiving a $10 gift card for compensation (approved by the research team and CAB).

The CAB led participant recruitment. Each CAB member(s), responsible for recruiting 50 participants, created a recruitment plan specific to their own community. For example, the Philippine American community relied on their strong ties with young professional organizations, while the Indian American community recruited from temples and student groups. To help with the process, the research team and CAB jointly developed participant recruitment flyers for each ethnic group. Recruitment occurred over two months and yielded 232 complete surveys (36 Chinese, 68 Filipino, 67 Indian, 8 Pakistani, 53 Vietnamese). Table 3 presents demographic characteristics of survey respondents, along with selected cancer prevention behaviors and beliefs.

In-depth interviews were conducted with community leaders from each group to complement the quantitative data. These data were collected to provide a more well-rounded picture of cancer risk and prevention in the Asian American community, including priority prevention areas and interest/awareness in research. Based on both recommendations from the CAB and snowball sampling, the research team interviewed 18 individuals who lived in the Houston area (3 Chinese, 4 Indian, 3 Vietnamese, 3 Pakistani, 3 Filipino, and 2 multiracial/multiethnic). The CAB reviewed and approved interview questions covering health concerns, cancer prevention attitudes and behaviors, barriers to research participation, and ideas for increasing the Asian community's understanding and interest in participating in research. Each participant received a $20 gift card for interview completion.

All study procedures were approved by MDA's Institutional Review Board. The project coordinator obtained written consent for eligible and interested participants; specifically, the coordinator provided a detailed description of the study, answered participants' questions, and subsequently obtained written consent. Data management adhered to principles set forth by

MDA's Institutional Review Board, with data saved and stored on the MDA server and kept in password-secured computer files with limited access. The CAB and research team work in partnership with the data for analyses and presentations.

Community Engagement and Education

The research team and CAB worked closely to ensure co-learning and to integrate knowledge and action by offering cancer prevention education to the community.[12] This included technical assistance to support community-academic partnerships (part of PCORI resources) and community education events. First, the research team shared and discussed technical assistance webinars on various topics (e.g., research vs. program funding, practice research/advocacy) with the CAB. Next, the research team and CAB planned and implemented several community education events - including interactive meetings with MDA faculty members and opportunities for lay-based health education training. The partnership leveraged existing AAHC meetings to introduce the PCORI project and present clinical research information in an engaging, community-friendly manner. Faculty members from General Oncology and Medical Ethics led discussions on the importance of Asian participation in clinical trials and the informed consent process in research. Finally, the MDA team hosted a community "train-the-trainer" event on Clinical Trials Bingo, an engaging educational tool designed to raise awareness of clinical trials and available information resources. The goal was to provide interested community members tangible tools and resources for delivering cancer prevention education in their own community.

Lessons Learned

This community-academic-medical partnership had a promising scope; working with five different Asian American communities provided the opportunity to better understand relevant cancer needs. However, there were multiple challenges and lessons learned.

Limited Resources to Meet Language Needs

One lesson learned was balancing diverse language needs with the practicalities of the project. This is critical to consider in data collection given the many languages and dialects spoken by Asian American groups. The CAB strongly advocated for survey translation to accommodate each Asian community, which was indeed the original intent. Given our target population was composed of five distinct Asian groups, translation would be time-consuming and costly - exceeding the project's resources. After much discussion, the research team and CAB ultimately decided against survey translation. The age range provided confidence that most of the target population would likely be proficient in English, additionally CAB members dedicated time to make cultural and plain language adaptations to the survey. Nonetheless, both the research team and CAB acknowledged that the sample would not be fully representative of the Asian American population in Houston. Community-based research principles, including transparency and honest dialogue, helped the partnership navigate these difficult discussions, and should be used in future partnerships to work out changes together.

More Time and Consideration Needed for Recruitment

Another lesson learned was the time it takes to conduct health research in an ethnically diverse community like Asian Americans. From developing community relationships to recruiting participants for the needs assessment, each step was time-consuming and required patience and flexibility. The partnership goals were ambitious for a one-year project, and the timeline was not conducive to fully execute all components. For example, limited time compromised gathering an adequate number of voices to represent the range of Asian ethnicities present across Houston – particularly for the survey (e.g., eight responses from the Pakistani community compared to 68 from the Filipino). In the future, similar partnerships should incorporate more time to recruit study participants to ensure ample representation.

Additionally, future studies should incorporate time and resources to purposefully sample across age, income, nativity, gender, and other demographics. For example, among South Asian communities, having breast cancer can reduce marital prospects for single women,[20] which may underscore marital status as a key demographic variable. Further, colorectal cancer screening knowledge and/or attitudes may differ by education, income, and English-speaking proficiency among Chinese and Korean Americans.[21] Thus, a lesson learned was to consider income, nativity, marital status, acculturation, and gender – not just ethnic – distribution of Asian American participants.

Another recruitment-related lesson learned was related to recruiting community leaders for the qualitative interviews. At most, five leaders from each Asian American group participated in the qualitative interviews. Although this allowed for some consensus from the community, the leaders' views may not adequately represent those of the individual community members. For example, cancer is stigmatized among Asian Americans, so those impacted by cancer rarely discuss their health openly, especially beyond their family.[9,10] The lack of open conversations may impact whether community leaders are aware of the existing cancer health needs in their communities. Future efforts should recruit not just community leaders but individual community members, as well.

Lastly, related to recruitment, one Asian ethnic group in this partnership had great challenges in recruiting participants. The research team and CAB chose at least one person from each community to lead the effort; however, it may have been more fruitful to broaden this approach (e.g., intentionally adding members to the recruitment team with differing spheres of influence) to ensure each group could meet or exceed the recruitment target. Thus, a lesson learned is to cast a wide net when considering and reaching out to potential community leaders, given their importance in community-engaged research.

Importance of Raising Awareness about Research and Prevention

The last major challenge and lesson learned related to the difficulty in generating interest and participation in the needs assessment survey, despite CAB involvement and survey compensation. During discussions, CAB members shared that community members generally lacked interest in participation and lacked awareness of the need for research and preventative measures in the community. Community members did not understand that without health needs research, good preventative measures could not be developed. Additional concerns included fear of data mishandling, lack of trust of government and other institutions, and lack of knowledge on the relevance of health research, which corroborate existing literature.[22] These concerns may impact community members' desire to participate in scientific research.

Further, the $10 gift card did not seem to impact participation. It was unclear if the amount was insufficient to entice response or if participation was such a low priority that the amount was irrelevant. In future research, it is important to interview participants to ask their motivation for participation, to gain greater insight into the role of incentives in Asian American populations.

Ultimately, it is critical to promote awareness of research and its role in cancer prevention in the Asian American community, in order to ensure that research can be conducted successfully. This shared goal has sustained collaboration between the research team and the CAB. With this partnership as a foundation, there are numerous opportunities for community outreach. The CAB and research team continue to discuss ideas, such as hosting programs at religious services covering misinformation, fear, and mistrust in the community regarding health research. Community presentations have continued, including additional sessions of Clinical Trials Bingo (Chinese) and presentations to improve care delivery in Asian populations (e.g., Plain Language for Health Professionals).

In addition, findings from this project were presented at the Asian Health Summit in Houston (Fall 2020), with additional avenues planned for the future, including an upcoming presentation to IACAN. CAB members are still discussing ideas for how the data can shape community outreach and services, based largely on organizational capacity. For example, both IACAN and the Light and Salt Association are interested in using the data to support grant writing, while the PHAMH and Filipino Cancer Network of America (FCNA) are most interested in accessing data for program development. Finally, MDA and HOPE Clinic have been actively collaborating on a liver cancer prevention research study, which has a committed advisory board of Asian community stakeholders. In sum, raising awareness about research and prevention will require continual engagement between the research team, CAB, and other community and academic organizations.

Conclusions

Community-academic-medical partnerships are promising ways to engage Asian American communities in cancer research. This paper describes such a partnership between MDA, HOPE Clinic, and various Asian American community organizations. The partnership was successful in many ways, including establishing the partnership and its feasibility, conducting a community needs assessment with 232 surveys and 18 interviews, and offering cancer prevention engagement and education in the community. Some lessons learned included balancing language needs with limited resources, incorporating more time and resources to conduct health research in an ethnically diverse community, and promoting awareness of research and its role in cancer prevention in Asian American communities. By engaging the community and drawing on the combined expertise of academics, community members, and medical professionals, community-academic-medical partnerships can create research and programs that are scientifically strong and meaningful to the community.

Acknowledgements

This partnership was funded by a Pipeline to Proposal Award from the Patient-Centered Outcomes Research Institute (Project Number 7716966). This work also received support from the Duncan Family Institute through the Center for Community-Engaged Translational Research at MD Anderson. This project would not have been possible without the dedication of community partners, including the Community Advisory Board and community leaders and members who completed the needs assessment. Thank you for your guidance and participation. The authors would also like to thank research team members who contributed to project operations and implementation: Crystal Roberson, Alba Calzada, Georgina Avalos, Susy Nichols, and Belen Villanueva.

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Table 1. Community Advisory Board Members and Descriptions

Community Collaborators	Description	Strengths Brought to Partnership
Research Team		
Asian Cancer Council	A volunteer-led collaborative of 18 Asian community organizations in Houston whose mission is to reduce the cancer burden for Asian Americans	Deep reach into the Asian American community, long history of collaboration with MD Anderson, highly motivated volunteers, with strong emphasis on survivorship care and support.
Asian American Health Coalition	A volunteer-led collaborative of community organization that seek to increase access to care for Asian Americans throughout the Greater Houston area. The group promotes health access, knowledge, and disease prevention	More than 30 years in the Houston community, with long-serving members, representing many race/ethnic groups and organization types.
HOPE Clinic	Not-for-profit federally-qualified clinic that provides culturally and linguistically competent care for all, regardless of income or insurance status. HOPE's 4 clinics provided care for 26,000 people during 170,000 office visits during 2021. bout 21% of patients are of Asian descent, 24% are Black/African American, 13% White, and 38% Hispanic.	Deep reach into Asian and other immigrant communities in Houston, expertise in service delivery and cancer prevention programming targeted at Asian/Asian American populations, experience with community-academic research partnerships, long history of collaboration with MD Anderson
University of Texas MD Anderson Cancer Center (MDA)	Organization with a mission to eliminate cancer in Texas, the nation, and the world through programs centered on patient care, research and prevention, and training of students, trainees, professionals, and employees	Expertise in health disparities research and cancer prevention, vast experience with community-academic partnerships, resources to lead partnership, expertise in community engagement and outreach, history of work with Asian/Asian American populations
Vietnamese		
Vietnamese American Medical Association of Greater Houston (VAMA)	Non-profit professional organization representing Vietnamese physicians in the Greater Houston Area. The group promotes health prevention and healthy lifestyle for Vietnamese Americans	Strong ties in the Vietnamese community, well-respected, committed to health activism and outreach
Vietnamese American Nurses' Association (VANA)	Non-profit professional organization uniting Vietnamese American nurses in Houston, Texas and across the United States to promote the health of Vietnamese communities as well as of others around the nation through community outreach, research, education, and disease prevention.	Deep reach into the Vietnamese community, hosts and staffs health fairs, supports health projects, very collaborative, and dedicated in service to the community.
Indian		

Indian American Cancer Network (IACAN)	Non-profit organization with a mission to help reduce the cancer burden experienced by people of South-Asian descent and provide services to patients and caregivers through a network of liaisons	Strong ties to the Indian-American Community, Interest and expertise in research, survivorship, cancer prevention, clinical trials. IACAN's cancer education forums throughout the year are well-attended.
Chinese		
Light and Salt Association	Non-profit charitable organization that provides care and services to the needy and vulnerable and aims to promote healthy living and build a sense of community responsibilities among various populations	Grass-roots organization dedicated to survivorship care and support for Asian cancer survivors and their families. L&S are supportive of research collaborations and are long-standing partners with MD Anderson.
Filipino		
Philippine Nurses Association of Metropolitan Houston (PHAMH)	Organization that strives to promote unity among Filipino-American nurses in Metropolitan Houston, develop educational programs via partnership with other professional organizations and agencies, actively participate in community services aiming to promote health and prevent diseases, and embrace cultural diversity	Deep reach into the Filipino community, strong interest in learning about community cancer needs, and service to the community
People Caring for the Community (PCCI)	Non-profit organization that represents the Filipino community and seeks to promote Filipino-American culture and provide health, social, and educational services to all individuals	
Filipino Cancer Network of America (FCNA)	Non-profit organization with a mission to promote the welfare of individuals in the Filipino community with cancer by increasing their awareness of cancer and preventative behaviors and by providing education	
Pakistani		
Culture of Health - Advancing Together (CHAT)	Organization that represents the Pakistani community and provides education, healthcare, and social services aiming to help immigrants and refugees adapt to American culture	Deep reach into the Pakistani immigrant and refugee population

Table 2. Overview of Community Advisory Board (CAB) Meetings

Meeting	Topics Discussed
Meeting 1	• Group introductions • Proposal overview • Advisory Board Membership review • Discussion of organizations and topics of interest • Brainstorm community outreach ideas
Meeting 2	• General timeline of project • Establish Advisory Board status and discussion of monthly meetings • Build relationships and complete outreach plan • Partner with organizations and leaders in faith communities • Develop a Community Needs Assessment Template for each Asian community
Meeting 3	• Identify objectives for community assessment • Discuss potential qualitative strategies for community assessment • Discuss target recruitment number for surveys • Receive survey feedback from Advisory Board member • Analyze PCORI P2P budget
Meeting 4	• Discuss population, methodology, sample size, compensation, translation, question topics • Send surveys to population of interest • Finalize decision to conduct qualitative interviews and send self-administered online surveys; finalized participant compensation • Final sample size: 50 per group, 250 total
Meeting 5	• Status update on Asian Health Assessment survey • Discuss survey recruitment plan for each Asian community of interest • Discuss survey translation needs • Research training via PCORI webinars
Meeting 6	• Review survey questions and sample of recruitment flyer • Plan for town halls • Discuss effectiveness of PCORI webinars
Meeting 7	• Review recruitment plans for each Asian community • Discuss additions to the mission statement • Review funding opportunities • Overview of NIH Application Process • Overview of Research Project Grants
Meeting 8	• Survey revision for IRB approval • Form stakeholders group • Create mission statement
Meeting 9	• Update on IRB approval • Train survey administrators • Recruitment plans for community events, etc.
Meeting 10	• Survey updates on test and roll over, process flow, recruitment opportunities • Update on Asian American Health Coalition
Meeting 11	• Updates on survey and budget • Town hall to discuss ways to increase participation and brainstorm for informed consent sample • Board members satisfaction survey
Meeting 12	• Review PCORI project goals, activities, and accomplishments • Share selected data results of community needs assessments • Review CAB comments and questions • Discussion of population groups with lower participation • Discussion of potential opportunities to recruit more community leaders for interviews

Table 3. Participant Characteristics and Selected Health Behaviors/Beliefs, Community Needs Assessment Survey (n=232)

Characteristics	**M (SD)**
Age	36.7 (10.0)

Characteristics	**%**
Gender	
Male	25.0
Female	75.0
Born in the United States	
Yes	32.3
No	67.7
Ethnicity	
Chinese	15.5
Filipino	29.3
Indian	28.9
Pakistani	3.4
Vietnamese	22.8
Marital Status	
Divorced/Widowed/Separated/Never	41.5
Married/Living with Partner	58.5
Education	
High School or Less	3.9
Some College/Associate’s Degree	11.3
Bachelor’s Degree	48.9
Master’s or Higher Degree	35.9
Annual Household Income	
<$50,000	28.9
$50,000-100,000	32.8
>$100,000	38.2
Employment Status	
Not Working/Other	18.5
Currently Working	81.5
Language Most Often Spoken at Home	
English	52.0
Some Other Language	48.0

Cancer Prevention Behaviors and Beliefs	**%**
Received HPV Vaccination	
Yes	22.2
No	45.4
I'm Older than 27 (Too Old for Vaccine)	32.5
Time Since Last Pap Test (Women)	
Within the Past 3 Years	74.7
Between 3 and 5 Years Ago	5.7
5 or More Years Ago	1.9
Never Had a Pap Test	17.7
It Seems Like Everything Causes Cancer.	
Strongly Agree/Somewhat Agree	60.2
Somewhat Disagree/Strongly Disagree	39.8
How Often Do You Worry About Getting Cancer?	
Never/Rarely/Sometimes	93.0
Often/All the Time	7.0
If Invited to Join a Research Study for Behaviors or Treatments to Reduce Cancer Risk, Would You Agree?	
Definitely Yes/Probably Yes	56.9
Unsure	30.1
Probably No/Definitely No	13.0