Stanford CARE Summer Research Symposium

Friday, August 18th 2023
8:00am – 4:00 pm PST
Welcome to the Symposium

On behalf of the Stanford Center for Asian Health Research and Education (CARE), we invite you to the Stanford CARE Summer Research Symposium 2023, as a showcase for innovative Asian health research from around the world. Stanford CARE’s mission is to improve the health of Asians everywhere, through excellence in precision research and education. The Symposium will feature keynotes by leaders in healthcare and Asian health. This year, we are proud to showcase the critical Asian health research conducted by Stanford CARE Scholars students in medicine and public health.

The CARE Scholars program’s goal is to train the next generation of Asian Health researchers, and to provide undergraduate and graduate students with high quality Asian Health research experiences leading to publication. This year, the CARE Scholars program took on 24 students from around the world, who worked on 2 sets of projects: a large database project and a special mentored research project with leading Stanford faculty. Their research will be presented here today.

Please join us, as we celebrate the importance of Asian health and the work of our rising researchers.

Malathi Srinivasan, MD  
Clinical Professor of Medicine  
Director, Stanford CARE Scholars/TSF

Latha Palaniappan, MD MS  
Professor of Medicine  
Co-Director, Stanford CARE

Bryant Lin, MD MEng  
Clinical Professor of Medicine  
Co-Director, Stanford CARE

Robert Huang, MD  
Associate Director, CARE Scholars  
Associate Director, Team Science Fellowship

Gloria Kim, MD  
Clinical Associate Professor of Medicine  
Director of Educational Programs

Adrian Bacong, PhD MPH  
Associate Director, CARE Scholars  
Associate Director, Team Science Fellowship
Table of Contents

1. Cover
2. Welcome from Stanford CARE Faculty
3. Table of Contents
4. Symposium Agenda
5. Keynote Speaker Biographies
   - Bryant Lin, MD MEng
   - Nirav R. Shah, MD MPH
7. Large Database Research Project Abstracts
15. Special Mentored Research Project Abstracts
23. Meet the 2023 CARE Scholars Faculty
   - Core Faculty
   - Program Administrators
   - Program Faculty
   - Innovation Series Faculty
27. Meet the 2023 Mentors, Scholars, and Team Science Fellows
   - Research Mentors
   - Scholars
   - Team Science Fellows
   - Team Science Fellowship Advisory Board
30. Meet the CARE Faculty
   - Executive Team
   - Advisory Board
   - Country Directors
   - Program Directors
   - Stanford Faculty
   - Global Faculty
35. Years in Highlight 2018-2023

The Online Poster Gallery Walk can be accessed here starting the day of the Symposium.

https://tinyurl.com/CARESummerResearchSymposium

Please use the following Zoom link for the Symposium proceedings:

https://tinyurl.com/stanfordcarescholars2023
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 am</td>
<td>Welcome by Stanford CARE Leadership</td>
<td></td>
</tr>
<tr>
<td>8:30 am</td>
<td>Bryant Lin, MD MEng</td>
<td></td>
</tr>
<tr>
<td>9:30 am</td>
<td>Large Database Research Project Presentations</td>
<td></td>
</tr>
<tr>
<td>9:30 am</td>
<td>Intentional Self-Harm Mortality Among 15-24 Year Olds in Asian American Subgroups, 2011-2020</td>
<td>Ellen Chang, Lester A. Uy, &amp; Sanya Desai</td>
</tr>
<tr>
<td>10:00 am</td>
<td>Factors Associated with HIV-Testing among White and Asian Americans in the National Health Interview Survey (2006-2018)</td>
<td>Mitchell Han, Jonathan Lung MPH, &amp; Bin He</td>
</tr>
<tr>
<td>10:15 am</td>
<td>Mortality of Glioma in Disaggregated Asian American Subgroups: SEER 2000-2018</td>
<td>Sukhman Parhar, Wendy Yangyiran Xie, &amp; Shreya Gunda</td>
</tr>
<tr>
<td>10:30 am</td>
<td>Disaggregation of Hepatobiliary Cancer Mortality in Asian Americans: Analysis of NVSS Mortality Dataset</td>
<td>Anna Park, Andrew Vodinh-Ho, &amp; Ivory Rok</td>
</tr>
<tr>
<td>10:45 am</td>
<td>Disaggregated colorectal cancer mortality among Asian-American subgroups: a national ecological study (2005-2020)</td>
<td>Zeel Thakkar, Yan Wu, &amp; Mohammed Khan</td>
</tr>
<tr>
<td>11:00 am</td>
<td>Far from Home: Impact of Geography on Opioid Overdose Mortality Trends by Racial Groups</td>
<td>Amogh Patankar, Rionna Octaviano, &amp; Navneeth Gurachar</td>
</tr>
<tr>
<td>11:15 am</td>
<td>Disaggregating Breast Cancer Mortality trends in Asian American Subgroups from 2005-2020</td>
<td>Mia Marcotte, Yashi Chauhan, &amp; Vedha Penmetcha</td>
</tr>
<tr>
<td>11:30 am</td>
<td>Lunch Break &amp; Online Poster Gallery Walk</td>
<td></td>
</tr>
<tr>
<td>12:00 pm</td>
<td>Nirav R. Shah, MD MPH</td>
<td></td>
</tr>
<tr>
<td>1:00 pm</td>
<td>Special Mentored Research Project Presentations</td>
<td></td>
</tr>
<tr>
<td>1:00 pm</td>
<td>Strength Training Effectiveness in Normal-Weight Type 2 Diabetics</td>
<td>Rionna Octaviano, Navneeth Gurachar, &amp; Amogh Patankar</td>
</tr>
<tr>
<td>1:15 pm</td>
<td>Quality Improvement: Evaluation of Stanford Mental Health for Asians Research and Treatment (SMHART) Clinic</td>
<td>Ivory Rok, Anna Park, &amp; Andrew Vodinh-Ho</td>
</tr>
<tr>
<td>1:30 pm</td>
<td>Comparing Asian, Hispanic, vs. non-Asian/Hispanic Transmasculine Experiences to Improve Healthcare Delivery</td>
<td>Sanya Desai, Lester A. Uy, &amp; Ellen Chang</td>
</tr>
<tr>
<td>1:45 pm</td>
<td>Are primary care providers conducting Advance Care Planning with high-risk patients: a pre-intervention study across racial/ethnic groups</td>
<td>Vedha Penmetcha, Mia Marcotte, &amp; Yashi Chauhan</td>
</tr>
<tr>
<td>2:00 pm</td>
<td>Effectiveness of an Integrative Behavioral Health Program for the Management of Depression in Adults</td>
<td>Jonathan Lung, Bin He, &amp; Mitchell Han</td>
</tr>
<tr>
<td>2:15 pm</td>
<td>Investigating the Association Between Insufficient Sleep Duration and Mental Health in Disaggregated Asian-American (AA) Subgroups using the National Health Interview Survey (2006 – 2018)</td>
<td>Wendy Yangyiran Xie, Shreya Gunda, &amp; Sukhman Parhar</td>
</tr>
<tr>
<td>2:30 pm</td>
<td>Comparisons of Prevalence Estimates of Hypertension, Diabetes, and Cardiovascular Diseases by Racial Group from NHIS, NHANES, and BRFSS in 2015-2021</td>
<td>Yan Wu, Zeel Thakkar, &amp; Mohammed A. Khan</td>
</tr>
<tr>
<td>2:45 pm</td>
<td>Enhanced Care Management Programs for Children with Asthma in the US</td>
<td>Lauren Fu, Suhana Singh, &amp; Jonathan Lung</td>
</tr>
<tr>
<td>3:00 pm</td>
<td>Closing Remarks and Appreciations</td>
<td></td>
</tr>
</tbody>
</table>
Bryant Lin, MD MEng

Bryant Lin, MD, MEng is a primary care physician, educator, and researcher. His research and educational interests span (1) Developing and testing novel medical technologies, (2) Improving the health of Asian populations with Precision and Population Health, and (3) Increasing expression and interconnections in the Health Community with the Humanities and Arts. After receiving his undergraduate and master’s degrees in Electrical Engineering and Computer Science from MIT, he completed his MD and internal Medicine training at Tufts University School of Medicine and Tufts Medical Center. He came to Stanford to serve as a Research Fellow in Cardiac Electrophysiology. Since completing his post-graduate training, he has invented and researched new medical technologies addressing unmet human-centered needs and started the Consultative Medicine Clinic evaluating patients with medical mysteries. He co-founded and currently co-directs, with Dr. Latha Palaniappan, the Center for Asian Health Research and Education (CARE) which aims to improve the health of Asians everywhere.
Nirav R. Shah, MD MPH

Nirav R. Shah, MD, MPH, is Senior Scholar at Stanford University’s School of Medicine. He is a distinguished healthcare leader with experience as an operator, scientist, innovator, and regulator. His expertise spans public health, public and private health insurance, and clinical operations across the continuum of care. At Stanford, Dr. Shah conducts research on improving healthcare quality and safety while lowering cost, driving adoption of digital technologies, and quantitatively evaluating the resulting value for US and international health care systems. Dr. Shah is Board-certified in Internal Medicine and is a graduate of Harvard College and Yale School of Medicine. He is an Advisor to the CDC Director, Senior Fellow of the Institute for Healthcare Improvement (IHI), independent director of STERIS plc [NASDAQ:STE], and trustee of the John A. Hartford Foundation. Previously, he served as Chief Operating Officer of Kaiser Permanente in Southern California, and as Commissioner of the New York State Department of Health.
Intentional Self-Harm Mortality Among 15-24 Year Olds in Asian American Subgroups, 2011-2020

Ellen Chang, Lester A. Uy, Sanya Desai, Miguel Esteban Villarreal Rodriguez, George A. Hung, Nicholas Kikuta, Armaan Jamal, Malathi Srinivasan, Adrian M. Bacong, Robert J. Huang, Gloria S. Kim, Latha P. Palaniappan, Steven Sust

**Background**: Suicide is the primary cause of death among Asian American (AA) youth aged 15-24 between 2011 and 2020. However, lack of data disaggregation between AA subgroups hinders a comprehensive understanding of this statistic.

**Methods**: This cross-sectional study extracted U.S. death certificate data from the National Vital Statistics System for 15-24-year-olds from 2011-2020. 39861 suicides were extracted, retaining sex, age group, nativity status, location of death, and race, encompassing six Asian American subgroups and non-Hispanic White. Using the 2010 US standard population, age-standardized mortality rates (ASMR) were calculated, adjusting for age, sex, and disaggregated Asian subgroups. Proportional Mortality (PM), Proportional Mortality Ratios (PMR), and Joinpoint regression analyses were calculated for each AA subgroup using RStudio.


**Conclusions**: This study found that suicide rates for AA youth vary greatly when disaggregated by Asian subgroup. Notably, Japanese suicide deaths have increased nearly five-fold from 2018-2020. Our results call for targeted suicide prevention among the vulnerable population.

Suhana Singh*, Lauren Fu*, Alice Guan, George A. Hung, Nicholas Kikuta, Armaan Jamal, Malathi Srinivasan, Adrian M. Bacong, Robert J. Huang, Gloria S. Kim, Latha P. Palaniappan, Nancy Ewen Wang

Background: Pediatric deaths serve as a barometer of the health of a community or nation, highlighting vulnerabilities and necessitating focused interventions to bolster child well-being and overall public health. While there is extensive research on the leading causes of pediatric mortality, a significant gap remains in understanding leading causes of death within disaggregated Asian American and Pacific Islander (API) heritage groups in the United States.

Methods: We compared trends in pediatric leading causes of death between Asian American/Pacific Islanders (API) and non-Hispanic Whites (NHW) from 2005-2019 using data from the CDC Web-based Injury Statistics Query and Reporting System (WISQARS). Additionally, we used mortality data from the National Vital Statistics System (NVSS) pooled across 2005-2019 to identify pediatric leading causes of death for disaggregated API heritage groups (Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, and Pacific Islanders). Results were stratified by standard groupings of age based on development (under 1, 1-4, 5-9, 10-14, 15-19).

Results: We found differences in trends in leading causes of death between API and NHW individuals in that suicide is more prevalent in API populations. Furthermore, pooled analysis from 2005-2019 suggest that there are substantive differences in leading causes of death between API heritage groups, underscoring the importance of disaggregating data for this population.

Conclusions: The leading cause of death in children varies both by age and racial/ethnic group. These results demonstrate the importance of stratifying pediatric mortality by race to guide nuanced public health interventions for the growing Asian American community.
Factors Associated with HIV-Testing among White and Asian Americans in the National Health Interview Survey (2006-2018)

Mitchell Han, Jonathan Lung, MPH, Bin He, Miguel E.V. Rodriguez, George A. Hung, Nicholas Kikuta, Malathi Srinivasan, Adrian M. Bacong, Robert J. Huang, Gloria S. Kim, Latha P. Palaniappan, Armaan Jamal

Background: Asians have the highest rate of undiagnosed HIV in the United States (US) despite Centers for Disease Control and Prevention recommendations to get tested once per lifetime.

Methods: We used National Health Interview Survey data (2006-2018) to examine the predictors of HIV testing in Asian Americans compared to White Americans. Our sample consisted of 213,471 individuals including 197,855 White and 15,616 Asian individuals. We used log binomial to calculate prevalence ratios (PR) and 95% confidence intervals to estimate the association between HIV testing and demographic, socioeconomic and health-related factors in both White and Asian populations.

Results: In our sample, approximately 36% of both White and Asian individuals received HIV testing. Among Asians, being 27-64 years old, having a high school degree or higher, having 1+ health professional visits, earning $35000+, working in healthcare, and living in the Western or Southern US were positively associated with HIV testing (PR range: 1.11-1.65). Whites had similar positive predictors of HIV testing with the addition of immigrating to the US and living in the Northeastern US (PR range: 1.05-1.46). However, among Asians, being older than 65, being male, having private insurance or living in the US for more than 10 years were negatively associated with HIV testing (PR range: 0.54-0.93). Except living in the US for more than 10 years and being married, whites had similar negative predictors of HIV testing (PR range: 0.57-0.97).

Conclusions: Understanding factors that influence HIV testing in Asian populations can aid reducing rates of undiagnosed HIV.
Mortality of Glioma in Disaggregated Asian American Subgroups: SEER 2000-2018

Sukhman Parhar, Wendy Xie, Shreya Gunda, Xinran Qi, George A. Hung, Nicholas Kikuta, Armaan Jamal, Malathi Srinivasan, Adrian M. Bacong, Robert J. Huang, Gloria S. Kim, Latha P. Palaniappan, Kekoa Taparra, Reena Thomas

**Background:** Glioma is a prominent form of brain tumor and has different prognosis across different racial groups. However, there is a lack of glioma prevalence and mortality data among Asian subgroups.

**Methods:** We conducted a retrospective cohort study employing the Surveillance, Epidemiology, and End Results (SEER) cancer registration data from 2000-2020. We compared Asian American (AA) patients with the Non-Hispanic White (NHW) group. We further disaggregated the AA group geographically: East Asian (EA; encompassing Chinese, Japanese, Korean), South Asian (SA; comprising Indian, Pakistani), and Southeast Asian (SEA; including Filipino, Vietnamese, Laotian, Hmong, Cambodian). Our analysis employed Logistic and Competitive Risk regressions, yielding adjusted Odds Ratios (aORs) and adjusted Hazards Ratios (aHR) with corresponding 95% confidence intervals (95%CI). We considered patient characteristics (age, sex, race/ethnicity, rurality, income, and survival months), and cancer attributes (grade, stage, metastases, and diagnosis year).

**Results:** The results revealed that SA (p = 0.009) and SEA (p = 0.028) backgrounds are significantly associated with higher glioma grading in our multivariate logistic regression model. When adjusted for age and sex, the survival likelihood of various AA subgroups with glioma exhibited significant temporal variations. The survival probability at 100 months of follow-up ranged from around 50% for the Other Asian subgroup to less than 25% for East, South, and Southwest Asians.

**Conclusions:** This study highlights the intricate interplay among the varying prevalence, severity, and prognosis of glioma across different AA subgroups. This emphasizes the critical need for tailored interventions and targeted research efforts.
Disaggregation of Hepatobiliary Cancer Mortality in Asian Americans: Analysis of NVSS Mortality Dataset

Anna Park, Andrew Vodinh-Ho, Ivory Rok, Xinran Qi, George A. Hung, Nicholas Kikuta, Armaan Jamal, Malathi Srinivasan, Adrian M. Bacong, Gloria S. Kim, Latha P. Palaniappan, Robert J. Huang

Background: Asian Americans (AA) are a diverse population and aggregation of AA health data in national reports could conceal significant trends or differences between AA subgroups. Hepatobiliary cancer rates are increasing globally, and a greater understanding of hepatobiliary mortality among AA subgroups could motivate precise intervention and screening programs.

Methods: We report age-adjusted mortality rates, standardized mortality ratios, and annual percent change for hepatocellular carcinoma (HCC), non-specified liver cancer, intrahepatic cholangiocarcinoma (ICC), extrahepatic cholangiocarcinoma (ECC), and gallbladder cancer (GBC) using national mortality data from 2005 to 2020 for the six largest AA subgroups (Chinese, Asian Indian, Filipino, Japanese, Korean, and Vietnamese) with non-Hispanic Whites (NHWs) as the reference population.

Results: All AA subgroups (except Asian Indians) had significantly higher hepatobiliary cancer mortality than NHWs. Vietnamese demonstrated the highest mortality from HCC (7.65 per 100,000) and non-specified liver cancer (5.57 per 100,000), while Koreans had the highest mortality from the biliary tract cancers: ICC (3.10 per 100,000), GBC (0.72 per 100,000), and ECC (0.97 per 100,000). Notably, Vietnamese mortality from liver cancer and Korean mortality from biliary tract cancers increased significantly over the study period. Across all racial subgroups, males had significantly higher hepatobiliary cancer mortality than females, with this effect being largest for HCC and non-specified liver cancer.

Conclusions: Differences in mortality across specific hepatobiliary cancers and among AA subgroups demonstrate the importance of analyzing them separately and inform the need for ethnically targeted screening and prevention strategies.

Zeel Thakkar, Yan Wu, Mohammed Khan, Xinran Qi, George A. Hung, Nicholas Kikuta, Armaan Jamal, Malathi Srinivasan, Adrian M. Bacong, Karina Kim, Gloria S. Kim, Latha P. Palaniappan, Robert J. Huang

Background: Colorectal cancer (CRC) is the second-highest cause of cancer death among Americans. Insight into CRC mortality by disaggregated Asian-American (AA) subgroups is critical to inform personalized care and bridge healthcare disparities.

Methods: Using 2005-2020 US national mortality records and American Community Survey 1-year population estimates, we report age-standardized mortality rates (ASMR), standardized mortality ratios (SMR), and annual percent change trends (AAPC) for the six largest AA subgroups (Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese). Non-Hispanic Whites (NHW) are the reference group. We stratified on sex, nativity, and CRC subtype (colon vs. rectal).

Results: Overall, ASMR was lower for AAs than NHW and lower for native groups vs. foreign-born. However, native Japanese males had higher CRC mortality (ASMR=18/100,000; 95% CI 17.1-19.9) than native NHW males (ASMR=17; CI 16.9-17.0) and foreign-born Japanese males (ASMR=15; CI 13.0-17.1). Vietnamese native females experienced the lowest CRC mortality (ASMR=1; CI 0.8-1.7). While Vietnamese and Koreans experienced the 1st and 3rd lowest ASMRs, they were the only two subgroups whose APC increased over the study period (3.4% and 1.4%, respectively). Overall, males experienced higher mortality than females and mortality from colon cancer was higher than rectal cancer.

Conclusion: AA subgroups demonstrate significant heterogeneity in CRC mortality, emphasizing the necessity of disaggregation in cancer research. Increasing mortality in Korean and Vietnamese subgroups, which experienced lower overall ASMR, indicate areas for increased screening and preventative measures.
Far from Home: Impact of Geography on Opioid Overdose Mortality Trends by Racial Groups

Amogh Patankar, Rionna Octaviano, Navneeth Gurachar, Alice Guan, Annabel Chen, George A. Hung, Nicholas Kikuta, Armaal Jamal, Malathi Srinivasan, Adrian M. Bacon, Robert J. Huang, Gloria S. Kim, Latha P. Palaniappan, Eric R. Gross

**Background:** There is limited research using geographic approaches to analyze opioid-related deaths, aiding in the comprehension of patterns and potential interventions. We aim to compare the distance traveled of decedents by race, opioid overdose intention, and urbanicity when the counties of residence and occurrence differ for opioid-related deaths.

**Methods:** Our study uses the National Vital Statistics System Mortality Data from 2016-2020, a census of all cause mortalities in the United States. To identify opioid overdose as an underlying cause, we used the following International Statistical Classification of Diseases and Related Health Problems, Tenth Revision codes: X40-X44 (accidental), X60-X64 (intentional self-harm), X85 (assault), Y10-Y14 (undetermined intent), and T400-T406 (opiates). Opioid overdose deaths were analyzed by calculating distance traveled in miles, using county centroids. Suicide rates were calculated by dividing suicide counts by total opioid overdose counts. Chi-squared tests determined significance regarding urban and rural opioid overdose deaths.

**Results:** Asian and Pacific Islanders (API) traveled 296 mi on average outside their counties. This contrasts with average distances of 185 mi, 210 mi, 158 mi, 178 mi for American Indian, Hispanic, Non-Hispanic Black, and Non-Hispanic White, respectively. APIs exhibited the highest average suicide overdose rate of 13.93% as compared to all other groups.

**Conclusions:** APIs had the furthest average distance traveled and experienced the highest percentage of suicide-related opioid deaths amongst other racial groups. This highlights the need for targeted outreach and interventions to address the unique challenges they face in opioid overdose prevention.
Disaggregating Breast Cancer Mortality trends in Asian American Subgroups from 2005-2020

Mia Marcotte, Yashi Chauhan, Vedha Penmetcha, Xinran Qi, George A. Hung, Nicholas Kikuta, Armaan Jamal, Malathi Srinivasan, Adrian M. Bacong, Robert J. Huang, Gloria S. Kim, Latha P. Palaniappan, Caroline A. Thompson, Candice Thompson

**Background:** Breast cancer (BC) is the second leading cause of death among women and has disproportionately higher rates of mortality in certain racial groups, including Asian Americans (AA). While differences in BC mortality between AA and other racial subgroups have been identified, few studies have disaggregated nationwide AA mortality data.

**Methods:** Using National Vital Statistics System mortality data, BC-related deaths were analyzed for AA groups (Asian Indian, Chinese, Filipina, Japanese, Korean, Vietnamese), Native Hawaiian and Pacific Islanders (NHPIs), and non-Hispanic Whites (NHWs) from 2005-2020. We calculated cancer proportional mortality ratios (PMRs), age-adjusted mortality rates (AAMRs), standard mortality ratios, and used JoinPoint regression for average annual percentage change (AAPC).

**Results:** Among 13677 AA, 522 NHPI, 501282 NHW decedents, PMRs increased for all racial groups except Filipina. AAMRs significantly decreased in NHWs (AAPC -1.61; CI -1.70 to -1.48) while significantly increasing for aggregate AAs (AAPC 0.45; CI 0.08 to 0.94). Among AAs, Filipinas had the highest AAMR. AAMRs significantly increased for Asian Indians (AAPC 2.05; CI 1.20 to 3.46), Filipinas (AAPC 0.61; CI 0.15 to 1.46), Koreans (AAPC 2.72; CI 1.57 to 4.65) and Vietnamese women (AAPC 3.63; CI 2.26 to 6.20), but significantly decreased for Japanese (AAPC -1.41; CI -2.22 to -0.53).

**Conclusions:** We observed heterogenous and converging BC mortality trends across AA groups. Understanding disaggregated trends can inform screening practices, culturally tailored interventions and treatments to reduce BC deaths.
**Strength Training Effectiveness in Normal-Weight Type 2 Diabetics**

Rionna Octaviano*, Navneeth Gurachar*, Amogh Patankar, Alice Guan, George A. Hung, Nicholas Kikuta, Armaan Jamal, Malathi Srinivasan, Adrian M. Bacong, Robert J. Huang, Gloria S. Kim, Latha P. Palaniappan, Jin Long

**Introduction:** Normal Weight Type-2 diabetes (NWD) is associated with sarcopenia, with higher prevalence among Asian Americans (AA). The optimal exercise regimen is unknown and may differ across disaggregated AA sub-groups.

**Methods:** We performed Intention-to-treat (ITT) analyses on East Asians (EA) and South Asians (SA) from a randomized controlled trial for NWD individuals. Participants were randomly assigned to strength training (ST) alone, aerobic training (AER) alone, or a combination of both (COMB) for nine months. The primary outcome was mean change in HbA1c.

**Results:** Among 64 EA participants (20 in ST, 21 in AER, 23 in COMB), median age is 62.5 years, with mean (SD) baseline HbA1c 7.46 (1.11) mmol/mol. 70 SAs (26 in ST, 20 in AER, 24 in COMB) had median age 54 years, and mean baseline HbA1c 7.45(1.03) mmol/mol. For EAs, ITT analyses revealed significant decrease in HbA1c for ST and AER groups, demonstrating mean (95% CIs) reduction of -4.63 [-8.11, -1.16], and -6.53 [-10.05, -3.02], respectively. There was no significant change in COMB -1.42 [-4.72, 1.87]. SAs didn’t show significant changes in HbA1c in all three groups.

**Conclusions:** For EAs, ST and AER were superior to COMB, consistent with the reported trial results. No significant improvements were observed for SAs for all exercise groups. Varying impacts of training styles based on AA sub-groups highlight the significance of personalized fitness strategies for lowering HbA1c in NWD.
Quality Improvement: Evaluation of Stanford Mental Health for Asians Research and Treatment (SMHART) Clinic

Ivory Rok, Anna Park, Andrew Vodinh-Ho, Xinyi Tina Cheng, Xinran Qi, George A. Hung, Nicholas Kikuta, Armaan Jamal, Malathi Srinivasan, Adrian M. Bacong, Robert J. Huang, Gloria S. Kim, Latha P. Palaniappan, Rona Hu, Huiqiong Deng

Background: Asian Americans are a diverse and rapidly growing population that faces unique mental health challenges that call for cultural appropriate care. This study identifies and evaluates factors that contribute to the effectiveness of culturally congruent care provided by the Stanford Mental Health for Asians Research and Treatment (SMHART) clinic in improving mental health outcomes for Asian American (AA) patients.

Methods: The study followed the Model of Improvement developed by the Institute for Healthcare Improvement. Ten mental health providers who work at the SMHART clinic were recruited to participate in a survey that explores their experiences working with AA patients at SMHART. Additionally, we have developed a referring provider survey, and planned semi-structured qualitative interviews with SMHART physicians, referring providers, and SMHART patients with the quarter.

Results: Five leading barriers that influence patient outcomes were identified from the analysis: (i) Access to mental health services, (ii) Gaps in mental health literacy, (iii) Language non-concordant care, (iv) Stigma around mental health conditions, and (v) Preferences for non-medicinal based treatment. Additionally, AA patients at the SMHART clinic most commonly face culturally-specific barriers to care and treatment such as perception that having a mental health condition is a sign of weakness/poor character, perception that having a mental health condition is shameful or shameful to the family, and internal conflicts between family dynamics and societal expectations.

Conclusions: The SMHART clinic demonstrates efficacy of culturally congruent care that is both innovative and contextual, requiring a comprehensive approach to address systemic and culture-specific barriers to improve mental health outcomes for Asian Americans.
Comparing Asian, Hispanic, vs. non-Asian/Hispanic Transmasculine Experiences to Improve Healthcare Delivery

Sanya Desai, Lester A. Uy, Ellen Chang, Miguel Esteban Villarreal, George A. Hung, Nicholas Kikuta, Armaan Jamal, Malathi Srinivasan, Adrian M. Bacong, Robert J. Huang, Gloria S. Kim, Latha P. Palaniappan, Benjamin Laniakea

**Background:** This analysis focuses on the experiences of transmasculine people of color at the Stanford LGBTQ+ Program, highlighting the unique challenges they face, such as accessing gender-affirming care to assess and identify areas of program improvement. It adopts a transformative lens to confront social oppression and aims to identify barriers to care from the perspective of trans individuals seeking primary healthcare.

**Methods:** This paper used mixed methods, comprising a web-based survey and semi-structured interviews, to examine the experiences of current transmasculine patients at the Stanford LGBTQ+ Health Program Clinic. The survey collected quantitative data on social support, clinic experiences, and barriers to healthcare through various question types, while interviews with Asian, Hispanic, and Non-Hispanic White transmasculine patients explored access to care, treatment quality, and cultural differences, employing thematic analysis for interpretation.

**Results:** The survey is in its final stages of development, is currently being validated, and is awaiting imminent deployment. Interview structure and areas of exploration have been created and reviewed by community touchstones. Results will be both qualitative and quantitative. Demographic data will be collected through the survey. Selected quotes from interviews will be highlighted. All data will remain anonymous.

**Conclusion:** We will identify areas that can readily be implemented to enhance efficiency and improve the quality of care at the Stanford LGBTQ+ Program. By incorporating the identified improvements and best practices into existing program protocols, other organizations, from hospital systems to medical schools, can leverage this QIP as a model to foster a culture of continuous improvement and ensure the delivery of high-quality care and cultural humility to their patients.
Are primary care providers conducting Advance Care Planning with high-risk patients: a pre-intervention study across racial/ethnic groups

Vedha Penmetcha, Mia Marcotte, Yashi Chauhan, Adrian M. Bacon, George A. Hung, Nicholas Kikuta, Armaan Jamal, Malathi Srinivasan, Robert J. Huang, Gloria S. Kim, Latha P. Palaniappan, Amelia Sattler

**Background:** Advance care planning (ACP) helps improve quality of life for patients nearing the end of life. Stanford Medicine implemented the Serious Illness Conversation Program (SICP) to help primary care providers (PCPs) initiate ACP conversations with patients. Although PCPs are alerted to have conversations, they still struggle identifying which patients to engage with and gather documentation from. This pre-intervention study aims to quantify trends across patient race and ethnicity and qualitatively understand perceived cultural barriers to ACP.

**Methods:** We utilized a mixed-methods approach, analyzing data from seven Stanford primary care clinics. Information about ACP conversations and documentation, end-of-life index scores, and comorbidities were stratified by race and ethnicity. PCPs will complete web-based surveys inquiring about barriers to having ACP conversations and acquiring documentation.

**Results:** Among 274 non-Hispanic white (NHW), 7 Hispanic white, 127 Asian and 14 Black high-risk patients 65+, Asians had significantly less ACP documentation compared to NHWs (p=0.018). Asians with ACP conversations had significantly less documentation compared to NHWs (p<0.05). Among providers seeing high-risk patients, there are significant differences in documentation and conversations across patient race and ethnicity (p<0.001). We expect barriers to ACP to include SICP training, timing, language, family input and patients' cultural views on death.

**Conclusions:** ACP documentation and conversation rates among providers differ based on their patients' race and ethnicity. Asian patients are least likely to have documentation. Identification of provider barriers will inform the implementation of the AI-assisted system in an ambulatory setting to reduce these disparities.
Effectiveness of an Integrative Behavioral Health Program for the Management of Depression in Adults

Jonathan Lung, Bin He, Mitchell Han, Miguel E.V. Rodriguez, George A. Hung, Nicholas Kikuta, Armaan Jamal, Adrian M. Bacong, Robert J. Huang, Gloria S. Kim, Latha P. Palaniappan, Amelia Sattler, Malathi Srinivasan

**Background:** According to the Centers of Disease Control and Prevention, as of early 2021, 41.5% of US adults reported recent symptoms of anxiety or depression and nearly 12% reported having unmet mental health care needs. Integrative Behavioral Health (IBH) programs assist in the screening and management of patients experiencing mild to moderate behavioral health symptoms in primary care clinics. Identifying and treating depressive symptoms early may lead to improved outcomes. We aim to examine the impact of Stanford’s IBH program on improvement of Patient Health Questionnaire (PHQ) scores among racial/ethnic groups in relation to social determinants of health (SDoH).

**Methods:** We are conducting a prospective cohort study on all patients referred to the IBH program and are studying the difference between those who engaged with the program’s intervention compared to those who did not engage. We plan to measure the trends of PHQ scores over time, based on demographic, socioeconomic, and health-related factors.

**Results:** We anticipate that patients who engage with the program will see a significant decrease in PHQ scores as compared to the patients who are referred but do not engage. Demographic, socioeconomic and health-related factors might also play a role in PHQ trends over time.

**Conclusions:** Understanding the factors influencing the efficacy of our IBH program will provide opportunities for future program improvement by allowing us to develop precise, effective clinical interventions while ensuring equitable care for all patients regardless of race, ethnicity or other SDoH.
Investigating the Association Between Insufficient Sleep Duration and Mental Health in Disaggregated Asian-American (AA) Subgroups using the National Health Interview Survey (2006 - 2018)

Wendy Yangyiran Xie*, Shreya Gunda*, Sukhman Parhar, Miguel Esteban Villarreal Rodriguez, Armaan Jamal, George A. Hung, Nicholas Kikuta, Malathi Srinivasan, Adrian M. Bacon, Robert J. Huang, Gloria S. Kim, Latha P. Palaniappan, Lauren Eggert

**Background:** Asian Americans (AAs) exhibit higher rates of insufficient sleep (IS; <7 hours/night), compared to non-Hispanic Whites (NHW). We aim to explore how IS correlates with psychological distress.

**Methods:** Using the National Health Interview Survey data from 2006-2018, we analyzed self-reported sleep duration and Kessler Psychological Distress Scale (K6) scores among AA subgroups including Chinese, Filipino, Asian Indian, and Other Asians. Severe psychological distress (SPD) is defined as K6 >13. We conducted a multivariate logistic regression between IS and SPD, adjusting for demographics, education, income, occupation, insurance, smoking and alcohol, BMI, and physical health. Subsetted multivariate logistic regression was used to analyze IS and SPD for AA subgroups.

**Results:** The overall IS prevalence was 33.1%, (highest: Filipinos [57.8%]; lowest: Asian Indians [24.6%]. The overall prevalence of SPD was 4% (highest: NHW [4%]; Lowest: Chinese and Asian Indians [1.3%]. IS correlated with SPD at an adjusted odds ratio (aOR) of 2.53 (confidence interval 2.40-2.67) in the fully adjusted model. The stratified analysis revealed varying aORs for IS and SPD across Asian subgroups: NHW 2.34 (2.20 - 2.51) Chinese 1.86 (0.97-3.59), Filipino 3.13 (1.78-5.51), Asian Indian 2.75 (1.29-5.86), Other Asians 4.37 (2.69-7.10).

**Conclusion:** IS correlates with SPD and such correlation varies amongst AA subgroups. Our findings underscore the significance of considering the AA population's heterogeneity when evaluating psychological distress and sleep patterns.
Comparisons of Prevalence Estimates of Hypertension, Diabetes, and Cardiovascular Diseases by Racial Group from NHIS, NHANES, and BRFSS in 2015-2021

Yan Wu, Zeel Thakkar, Mohammed A. Khan, Xinran Qi, George A. Hung, Nicholas Kikuta, Armaan Jamal, Malathi Srinivasan, Robert J. Huang, Gloria S. Kim, Latha P. Palaniappan, Adrian M. Bacon

Introduction: The United States uses three nationally representative surveys, the National Health Interview Survey (NHIS), Behavioral Risk Factor Surveillance System (BRFSS), and National Health and Nutrition Examination Survey (NHANES), to monitor disease trends and inform clinical care/prevention research. Previous studies have noted similar national estimates between the surveys, yet whether the magnitude and direction of health disparities by race are similar across each dataset has been less examined. In this study, we compare prevalence estimates and disparities of chronic diseases across racial groups.

Methods: We examined hypertension, diabetes, and cardiovascular disease (CVD) risks in respondents aged 30 or older. CVD included self-reported physician diagnosis of heart attack, stroke, and coronary heart disease. We employed a logistic regression technique to measure odds ratios among race, with respect to Non-Hispanic Whites (NHW). Covariates included sex, marital status, age, employment, health insurance status, poverty, smoking status, and BMI.

Results: Non-Hispanic Blacks (NHB) had the highest hypertension prevalence in both NHIS (48.2%) and NHANES (48.6%). In NHANES, Asians had the lowest hypertension prevalence (29.9%), while Hispanics had the lowest in NHIS (29.2%). Asians also had the lowest CVD across all three datasets. NHBs also had the highest diabetes prevalence in all 3 datasets. Other and multi-racial respondents showed the highest CVD prevalence in all three datasets.

Conclusions: Despite their methodological differences, the three surveys report consistent prevalence for chronic diseases. This study confirms the validity of national datasets and is suggestive of their ability to highlight potential health disparities.
Enhanced Care Management Programs for Children with Asthma in the US

Lauren Fu*, Suhana Singh*, Jonathan Lung, Alice Guan, George A. Hung, Nicholas Kikuta, Armaan Jamal, Malathi Srinivasan, Adrian M. Bacon, Robert J. Huang, Gloria S. Kim, Latha P. Palaniappan, Sara Singer, Rebecca Staiger, Chris Stave, Lee Sanders

**Background:** Over 10% of all children have medically complex conditions (MCC). These children have disproportionately high rates of hospitalizations, poor health outcomes, and higher cost of care. Enhanced Care Management programs, funded by state Medicaid programs, focus on affordable access to care and care coordination. These programs may benefit low income children with MCC, as they are at a higher risk for adverse outcomes. We conducted a systematic review of enhanced care management programs outcomes for children with MCC, initially focusing on patients with asthma.

**Methods:** We conducted a preliminary literature review to identify interventions, policies, and programs at the community, state, and federal level regarding enhanced care management programs for children with asthma. Working with a medical librarian, we identified search strings to inform our systematic review, anchored by several key articles. Our systematic review will include articles from PubMed, Google Scholar, and Web of Science. We will use the CDC 10 Essential Public Health Services Framework as a analytic design to anchor outcomes. Search strings that include terms such as "medicaid", "community intervention programs", "enhanced care", and "asthma" among others to populate relevant articles. Using exclusion and inclusion criteria, we will narrow these down to the most relevant articles to then identify and analyze enhanced care management programs for children with asthma.

**Results:** Utilizing the specified search parameters, we identified 843 studies of interest. We anticipate many programs to heavily focus on reducing adverse outcomes (i.e. emergency department visits and hospitalizations). We also expect to see that successful programs and interventions will have components that allow individuals to have affordable access to a full range of services and specifically target underserved communities.

**Conclusions:** Enhanced care management programs are essential for improving health related outcomes in pediatric patients with asthma. Future work entails narrowing of the forementioned articles followed both qualitative and quantitative analysis.
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Librarian – Lane Medical
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Lui Hac Minh
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<th>Speaker Name</th>
<th>Institution</th>
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<td>Karen Eggleston, MA PhD</td>
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<td>Kendall Ho, MD FRCPC</td>
<td>University of British Columbia</td>
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<td>Lawrence Hoffman, MD</td>
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<td>Ngan Fong Huang, PhD</td>
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<td>Neil Hunt, PhD</td>
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<td>Fumiaki Ikeno, MD PhD</td>
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<td>Sarita Khemani, MD</td>
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2023 Innovation Series Speakers Continued

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Stanford

Tara Kirk-Sell, PhD MA  
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S.V. Mahadevan, MD  
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Stanford

Reena Thomas, MD  
Stanford

Candice Thompson, MD  
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Joe Wu, MD PhD  
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# 2023 Research Mentors

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<td>Lauren Eggert, MD</td>
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<td>Robert Huang, MD</td>
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<td>Caroline Thompson, PhD MPH</td>
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<td>Armaan Jamal</td>
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<td>Latha Palaniappan, MD MS</td>
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<td>Sara Singer, PhD MBA</td>
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<td>Lee Sanders, MD MPH</td>
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<td>Steven Sust, MD</td>
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  DOM Team Science Initiative

- Joe Wu, MD PhD
  Director
  Stanford Cardiovascular Institute
On behalf of the Stanford CARE Executive Team and all Stanford CARE faculty, we extend a warm welcome to all our speakers, students, friends, and family, who are joining us in the fight for equity in Asian health.

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<td>Jin Ling, PhD, Senior</td>
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<td>Walter Park, MD</td>
<td>Assistant Professor of Medicine (GI)</td>
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<tr>
<td>Jochen Profit, MD</td>
<td>Associate Professor of Pediatrics</td>
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<tr>
<td>Yuen So, MD PhD</td>
<td>Professor of Neurology</td>
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<tr>
<td>Sandra Tsai, MD MPH</td>
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<td>Nancy E. Wang, MD</td>
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CARE Founded
October 2018
CARE was founded by Dr. Latha Palaniappan and Dr. Bryant Lin to provide a common place for research, education, and clinical care support allowing disparate faculty, staff, community members, and trainees to share ideas, common resources, and implementation capabilities for Asian health.

2019 CARE Summer Research Immersion Program
Summer 2019
Our inaugural CARE Summer Research Intensive Program (CARE-SRI) began with 8 students from a diverse array of places convening to study pressing issues in Asian Health. Since then, we have expanded our program 3-fold, with 24 students from 4 countries.

4 Asian Health Courses
Fall 2019 – Spring 2020
Through the courageous efforts of our CARE Faculty – including Dr. Latha Palaniappan, Dr. Bryant Lin, Dr. Malathi Srinivasan, and Alan Louie – we established several undergraduate and medical school courses on the topics of “Surveying Asian Health Issues,” “Tackling Cross-Cultural Boundaries in Asian Health,” “How to Change the World (for the Better),” and “Asian Culture and Medicine.”

Gastric Cancer Summit
March 2020
This multidisciplinary Summit brought together over 50 global physicians, researchers, policy makers, patients, and advocacy groups to share discoveries in gastric cancer research, to create a national roadmap to address healthcare disparities in gastric cancer.
2020 Seed Grant Applications
April 2020
CARE awarded $5,000 seed grants to five outstanding researchers in the field of Asian health and disease disparities. Our awardees – Dr. Ying Lu, Dr. Ranak Trivedi, Professor Freeborn Rwere, Dr. Uchechukwu Megwalu, and Dr. Karen Eggleston – will be investigating topics ranging from thyroid cancer in Filipinos to social support networks among Indian women with breast cancer. To the left is a Word Cloud of the most common research topics presented in our awardees' work.

International Covid-19 Conference
May 2020
In the wake of the COVID-19 pandemic, leading experts have come together across disciplinary and national borders to address urgent public health needs, share vital data and research, and provide critical medical care. At the International COVID-19 Conference, over 50 global speakers from across 14 time zones to share COVID research, discoveries, and stories. Garnering an audience of over 2,000 international attendees, this conference was the first of its kind to bring together policy makers, providers, patients, and advocates to look beyond American border to inform our domestic response to COVID-19.

Covid-19 Discrimination Study
Racialized language around COVID-19 has unjustly affected East Asians everywhere, resulting in a public health crisis that has turned a racial identity into a basis for discriminatory behavior. Thousands of instances of violence or emotional abuse have been reported since the beginning of the pandemic. In response, researchers at CARE, Stanford College, and the Stanford University School of Medicine have banded together to assess the mental health effects of COVID-related Anti-Asian discrimination. By raising awareness of racial injustice as a public health crisis, we hope to combat this discrimination both in our communities and beyond.
The Evidence-Based Traditional Asian Medicine Conference
March 2021
The Stanford Center for Asian Health Research and Education hosted the inaugural Evidence-based Traditional Asian Medicine (ETAM) Conference to answer key questions about traditional Asian medicine. The conference first introduced the evidence-based applications of traditional Chinese medicine (TCM) and traditional Indian medicine (Ayurveda) in the realms of diet and nutrition, pain management, and mental health. It then highlighted the crucial need for common and rigorous guidelines by which to evaluate and compare ETAM practices from around the world. Finally, the conference called for building upon Western precision medicine through ETAM methods and integrating practices from each to build a more robust, global, and individually tailored approach to health and health care.

Journal of Asian Health
CARE has partnered with the Stanford Online Journal System to establish the Journal of Asian Health. The Journal will promote high quality research and knowledge of Asian and Asian American health; educate patients and providers on Asian health needs; and improve culturally sensitive, evidence-based healthcare delivery to Asians everywhere. As an international, indexed, open-access journal, the Journal of Asian Health has succeeded in obtaining support from leading researchers and physicians in the field, including Dr. Gloria Wu, Dr. Paul J Wang, and Dr. JoAnn E. Manson. We look forward to expanding our efforts in 2021 to publish our first issue through Stanford University.

2020 CARE-Summer Research Immersion Program
Summer 2020
This multidisciplinary summer research immersion program brought together 19 passionate undergraduates and graduate students from across the world to tackle critical issues in Asian Health. Students worked on two research projects—a large database project focused on precision medicine, and a specific mentored research project with faculty—with the end goal of publishing their findings in academic journals over the next several months. Aside from the research aspect of the program, students learned about core principles of career development, Asian health, and health care.
The Nourish Project
The Nourish Project’s mission is to develop and share resources to manage and prevent diabetes through tasteful modifications to traditional Asian cuisine. The Nourish Project strives to promote healthier eating in Asian communities by putting the spotlight on classic dishes that are both healthy and delicious. The goal is to empower Asians by equipping them with the knowledge to make healthier choices in the kitchen and beyond. Through a joint effort by the API team and a registered dietitian at Stanford CARE, the Nourish project strives to develop effective and culturally relevant ways to provide Asians with healthy ideas to enjoy traditional Filipino, Indian, Chinese, Korean, and Japanese dishes.

The International COVID Conference: Lessons Learned
May 2021
In May 2021, the Stanford Center for Asian Health research and Education hosted the inaugural International COVID Conference as a follow up from the conference held in 2020. The multi-disciplinary conference brought together public health officials, researchers, and physicians to share lessons learned from COVID-19. The participants of the conference endeavored to increase knowledge, empower education, and positively impact the response to the pandemic. In funding innovative research, educating promising scholars, and community outreach, the conference sought to improve healthcare both locally and globally.

2021 CARE Scholars Program
Summer 2021
Rebranded as the Stanford CARE Scholars Program, we expanded our cohort to 22 passionate undergraduate and graduate students from across the world. Aside from research in Asian and global health, extra emphasis was placed on topics in innovation and career development. To date, the cohort has had 6 abstract publications, 2 manuscripts under review, and 2 published manuscripts. Additionally, with the generous donation of $55,000 from the Chi-Li Pao foundation, our scholars have presented regionally and nationally at 19 conference meetings.
Asian American, Native Hawaiian and Pacific Islander (AANHPI) Birth Equity Conference
May 2022
The Stanford University research team for the NIH-funded project: Disparities in Processes and Outcomes of Care Across Asian-American, Native Hawaiian and Pacific Islander (AANHPI) Populations at Childbirth convened families, caregivers and stakeholders to enhance awareness of, exchange knowledge about, and develop the groundwork for a collaborative learning network to optimize care and quality in AANHPI childbirth outcomes. This conference provided a platform for the team to engage with AANHPI families, their caregivers, and key stakeholders in maternal and neonatal quality to identify key drivers of inequitable care and outcomes and provide directions for improvement.

2022 CARE Scholars Program
Summer 2022
This year we expanded our cohort to 24 passionate undergraduate and graduate students from across four countries and hired four outstanding implementation science fellows. This year extra focus was placed on expanding our datasets including the national birth record data as well as cohort collected data including MESA. We also received 6 scholarships from various private donors and PCPH pathway to equity scholarship.

2022 Gastric Cancer Summit
November 2022
The second Gastric Cancer Summit, held at Stanford University in November 2022, was attended by over 80 physicians, researchers, policy makers, patients, and advocacy groups from around the world who shared experiences and discoveries in gastric cancer research, with the goal of creating a roadmap to address health care disparities in gastric cancer. We look forward to reporting the outcome of the second Gastric Cancer Summit in CARE’s 2022–23 Annual Report.
**Community Health Talks**

Started in 2022, through the support of the Vincent V.C. Woo Memorial Foundation, Stanford CARE launched its monthly community health talks to provide an exciting opportunity for anyone to learn about cutting edge medical technology, social disparities in health, precision medicine, and much more. This year, CARE has also initiated its in-language community health talk to bridge language barriers and healthcare access.

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**Community Events**

To further expand our community outreach, CARE hosts high-impact community events that provide basic health screening services and educate thousands of community members on pertinent issues and findings in Asian health. Included events this past year were: Lunar New Year Dumpling Making Event, Nikkei Matsuri Festival, CARE Asian Health Symposium in collaboration with Capital Group, Health Matters 2022, CARE Asian Health Symposium at the Palo Alto Hills Golf and Country Club, and YMCA Palo Alto Community Health Fair.

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**Universal Hepatitis B Screening Federal Guideline Change**

Samuel So, CARE Associate Director and Founder of the Asian Liver Center at Stanford University, and Prevention Policy Modeling Lab have collaborated with the Centers for Disease Control and Prevention to recommend hepatitis B screening for all U.S. adults. Chronic hepatitis B infection is the leading cause of liver cancer and cirrhosis and is a “silent killer” with no symptoms in many cases. The researchers estimate that a one-time hepatitis B screening would prevent additional cases of liver cancer, cirrhosis, and HBV-related deaths for every 100,000 adults compared to current screening and treatment rates.
No Alcohol Day
May 2023
May 9th, is the 5th Annual “No Alcohol Day” in Taiwan. Stanford Center for Asian Health Research and Education, in partnership with Taiwan Alcohol Intolerance Education Society, Taiwan Alcohol Prevention Association, the Health Promotion Administration, and the Division of Mental Health & Ministry of Health and Welfare in Taiwan, is airing this public health campaign in Taiwan educating the public on alcohol intolerance and harmful alcohol consumption especially in East Asian Communities. Korean and Japanese subtitled versions are available now on our YouTube. #ALDH2 #SayNoToAlcoholGlow

2023 Team Science Fellowship
This year we rebranded our Implementation Science Fellowship into our Team Science Fellowship, adding 5 diverse and talented fellows to our 2023 team. We also brought on Adrian Bacong, PhD MPH as the Associate Director and an advisory board of 9 stellar professionals with their abundance of wisdom.

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Thank you for attending the CARE Scholars Summer Research Symposium

To learn more about our mission, please visit: http://med.stanford.edu.html

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