



Generating Research & Ideas for Change

PHI's experts work closely with partners and communities to advance research that uncovers the root causes of disease and disparities, evaluates impact, and finds new solutions for treatment and prevention. Experts from across the organization collaborate with partners and decision makers to translate sound research and evidence into policies that can better the health of millions.



Prescribing Healthy Foods to Impact Diabetes

In Stockton, California, where 60% of the population has diabetes or prediabetes, PHI's Center for Wellness and Nutrition brought together local organizations to help low-income individuals living with diabetes. The Healthy Food Rx project increases access to fresh, seasonal fruits and vegetables and other healthy foods by delivering free recipe-based food boxes to approximately 450 participants' homes and providing hands-on education about managing their diabetes through nutrition. PHI's Center for Wellness and Nutrition designed and implemented Healthy Food Rx with Stockton-based organizations, with funding support from the Abbott Fund.

Community Medical Centers, a local Federally Qualified Health Center in Stockton, helped to identify participants to receive food boxes from the Emergency Food Bank Stockton/San Joaquin that were delivered directly to their home every other week for a year. The boxes included healthy ingredients for a family meal, containing vegetables, fruits and staples such as beans, rice and nuts. The boxes also included recipe cards and links to an optional online cooking class with the Emergency Food Bank, who also provided additional guidance and diabetes education to participants.

“It has taught me how to cook things, like dandelion greens and kale, that I never knew existed. It has been very educational.”

— SHANE BAILEY, HEALTHY FOOD RX PARTICIPANT (CIVIL EATS)

The Center for Wellness and Nutrition’s evaluation of the project looked at dietary behaviors, hemoglobin A1C, food insecurity and self-reported diabetes self-management behavior. The Healthy Food Rx study found a clinically significant decrease in participants’ A1C levels—an average 0.8 percent decline within 12 months for participants with uncontrolled diabetes. A1C is used to measure glucose levels, and this average decrease for the group exceeds the widely accepted 0.5% benchmark that is considered a clinically significant change and is associated with improved health outcomes in people with diabetes.

Study participants reported that they were better able to self-manage their diabetes through improved overall diet, increased physical activity and talking with mentors and friends more about diabetes management and healthy living. They also reported greater food security.

Clinically significant
change in diabetes measures.

“... it’s so exciting to see the Healthy Food Rx program improving the health of our residents with diabetes...”

— KEVIN LINCOLN, MAYOR OF STOCKTON

By delivering healthy food directly to homes and providing easy-to-follow recipes that were culturally familiar to participants, the program addressed barriers to participation that other FoodRx initiatives faced, such as access to transportation. 85% of participants stayed in the program for the first six months, and 64% stayed for the entire 12 months, which is a higher retention rate than other prescription programs have seen.

“The future of Stockton depends on the health and well-being of the people who live here, and that’s why it’s so exciting to see the Healthy Food Rx program improving the health of our residents with diabetes,” said Kevin Lincoln, Mayor of Stockton. “Change happens through genuine partnership. I’d like to thank our partners for demonstrating the importance of listening, collaboration and building new solutions to tackle the challenges of diabetes.”





Uncovering Root Causes of Cancer

In 2023, PHI's Child Health and Development Studies (CHDS) research revealed that women with a history of cancer are at higher risk of having children with birth defects. Thanks to their findings, health providers are able to better inform women with cancer of potential risks and reproductive consequences at the time of diagnosis and beyond. Another 2023 CHDS study examined environmental chemical exposures during pregnancy and breast cancer risk later in life and found that exposure during pregnancy to certain chemicals commonly used as ingredients in cleaning agents, insecticides and more can contribute to later breast cancer development.

“We expect this research to lead to a better understanding of how breast cancer develops, to understand how pregnancy links to breast cancer and the role of the exposome in combination with a woman’s response to the exposome... **Knowing more about pathways to breast cancer will lead to discovery of ways to prevent it,**” said Dr. Barbara Cohn, CHDS director.

Dr. Cohn also joined “Team Pandora,” an interdisciplinary, collaborative effort from scientists around the world, to compete in the prestigious Cancer Grand Challenges. Team Pandora, which was shortlisted for their proposal, sought to use CHDS samples to determine why the incidence of early-onset cancers in adults is rising globally, with the aim of interrogating the exposome to reveal the mechanisms linking lifetime exposures to early-onset cancers.

“This opportunity creates a chance for the riskiest, and most creative, collaborative and international team science. It’s essential to address the reasons for increasing risk of cancer in young adults and for finding clues to prevent the pain and losses to young people and their families.”

— **BARBARA COHN, PHD, MPH, AB, DIRECTOR, CHILD HEALTH AND DEVELOPMENT STUDIES, PUBLIC HEALTH INSTITUTE**

 **LOOKING BACK**

Fostering Generations of Health through One-of-a-Kind Multi-Generational Research



For the past six decades, the Child Health and Development Studies (CHDS) at PHI has investigated how health and disease are passed on between generations—

not only genetically, but through social, personal, and environmental surroundings. The program, lauded as “a national treasure that keeps on giving” by experts at the National Institute of Environmental Health Sciences, is the only existing opportunity for research that spans three (and in some cases, four) generations, examining the impact of environmental chemicals during critical windows of pregnancy in the womb. Researchers have followed 15,000 families since 1954, revealing novel causes and contributors to cancers, preeclampsia and high blood pressure in pregnancy, SIDS, and more.

Their 54-year study on DDT exposures was the first to provide direct evidence that chemical exposures for pregnant women may have lifelong consequences for their daughters’ breast cancer risk: daughters exposed to **higher levels of DDT in utero were nearly four times more likely to be diagnosed with breast cancer** as adults than women who were exposed to lower levels before birth.

Other research showed that exposure to some pesticides during pregnancy could alter a son’s risk of testicular cancer. In a separate study, published in *Science* in November 2020, Dr. Cohn reviewed COVID-19 breakthrough infections among 780,225 veterans. She found that vaccine protection declined from 87.9% to 48.1% during the 2021 Delta surge in the U.S. The pre-print release of the research was influential in the FDA’s decision to recommend the first series of booster shots across the U.S.





Partnering with African American Men to Tackle Prostate Cancer

African American men are at higher risk of developing and dying from prostate cancer in their lifetime, compared to men of any other race. The relative contributions of social and genetic factors to this inequity remains unclear. The RESPOND Study (*Research on Prostate Cancer in Men of African Ancestry: Defining the Roles of Genetics, Tumor Markers and Social Stress*) is one of the largest studies ever to look at lifetime and underlying stress factors, such as systemic racism, genetic predisposition, access to healthcare and tumor characteristics that put African American men at higher risk for developing and dying from prostate cancer.

The study involves seven states and thirteen cancer registries, which cover regions representing approximately 40% of African American men in the U.S. with prostate cancer. RESPOND is more than 20 times the size of any single previous prostate cancer study involving African American men.

California's regional cancer registries, which include Greater California (led by PHI), Los Angeles and the Greater Bay Area, represent three of the thirteen national research partners supporting the study. Researchers from these registries serve as critical partners in identifying African American men in California who have been diagnosed with prostate cancer and collecting surveys and specimen data to analyze

different factors that put African American men at greater risk of this disease. The regional

cancer registries serve as the only data repository in the state for all reportable cancer occurrences among Californians, and their data are used to support thousands of research studies and publications on various types of cancers.

10k+
African American men enrolled in the RESPOND study over the span of 5 years



“The California Cancer Registry leaves no one out — whatever their age, race/ethnicity, gender, income, education or other characteristics, every patient’s cancer journey is recorded. They have been described as ‘the eyes with which we see the cancer problem.’ Without it, we would be blind to how a major cause of illness and death has affected the people of California and the nation across the past 50 years.”

— ALLISON KURIAN, M.D

Godfrey Wilson serves as a Community Liaison and is a member of St. Columba Catholic Church, one of the largest African American catholic churches in Oakland, CA. Wilson lost his brother to prostate cancer and dedicates his time to making sure that other men understand prostate cancer, that they’re connected to quality health resources and are supported during their treatment journey.

He helps recruit African American men who have been diagnosed with prostate cancer into the study, and serves as a support system to them. He works alongside the University of California, San Francisco, which is a partner on the study, and works closely with the faith-based community, Brother-to-Brother, Knights of Peter Claver and other communities.

Researchers hope that the information they gather from the RESPOND study will lead to more effective interventions for preventing the disease, earlier diagnosis, and advancements in treatment options for African American men.



Researching Tobacco-Free Policies at Community Colleges



In California, only 76 of the 116 community college campuses (about 66% of campuses) were 100% smoke-free or tobacco-free in 2023. This is a stark contrast to California's four-year public colleges which are all tobacco-free. In response to this disparity, a research team at PHI's Alcohol Research Group conducted a mixed-method study that examined both campus and community influences on what makes a community college 100% tobacco-free.

Study findings pointed to factors used to facilitate the adoption of tobacco-free policy at California community colleges. Campus-community partnerships, external funding like the Truth Initiative, policy framing specific to each college and student interests, and strong student champions to coordinate and advance policy efforts, were all critical to adoption, while factors such as staff and student turnover posed barriers. Results are being used to help the remaining 40 community college campuses overcome institutional and other barriers to tobacco-free policy adoption and to deliver more effective environmental strategies to reduce tobacco-related disparities.

The tobacco-free campus policy study led to strong relationships with California community colleges and additional research opportunities for ARG and its partners. These relationships have also led to further collaborations around other public health issues of high priority for students at community colleges, including reproductive health services, mental health services, student health services, and basic needs.

66%

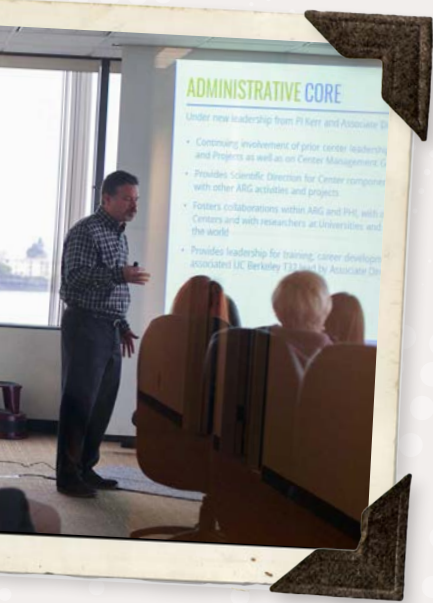
of community college campuses were 100% smoke-free compared to 100% of four-year colleges

The research project grew out of seed funding that the Alcohol Research Group received from PHI's Development Assistance Fund. The fund provides micro-grants, typically under \$10k, to PHI programs to help them expand innovative ideas into competitive grant awards. In 2024, the effort will expand under an \$800,000 award.



 **LOOKING BACK**

Changing Our Understanding of the Impacts of Substance Use



Since 1959, PHI's Alcohol Research Group (ARG) research has explored how alcohol and drug use changes over time, its impact on health and society, the best ways to support the needs of people with substance use disorders, and the environmental and social structures that drive alcohol- and drug-related health inequities. Researchers at ARG have presented at over 1,500 national and international conferences and meetings and authored over 2,000 publications and book chapters. Their significant body of research has informed policies and practices related to substance use at the local, state, federal and global levels.

For over 53 years and in collaboration with the University of California, Berkeley, ARG's training program has mentored and supported 280 scholars in their journey to become researchers, scientists, professors, authors, and public health practitioners. Since 1977, ARG has been home to the National Alcohol Research

Center, one of 18 centers funded by the National Institute on Alcohol Abuse and Alcoholism (NIAAA), and the only center to specialize in alcohol-related disparities and inequities.





Respiratory Symptoms Found in School Children Who Live Near Salton Sea

As a result of water transfers and conservation efforts, the Salton Sea, located in California's Imperial Valley, is rapidly drying up and revealing a large shoreline of playa contaminated by pesticides and other agricultural toxins. The Imperial Valley ranks among the worst nationwide in ozone and particulate matter, contributing to poor air quality and the Salton Sea's dry lakebed is poised to contribute substantial amounts of wind-blown particulate matter, leading to declining regional air quality. For decades the air quality in Imperial County has also exceeded state and federal safety standards, and as a result, the county has one of the highest rates of asthma-related hospitalizations and emergency room visits for children in the state.

Community concerns regarding the potential impact of the drying sea and children's respiratory health led to the initiation of the Children's Assessing Imperial Valley Respiratory Health and the Environment (AIRE) study, a community-academic partnership to assess the health effects of childhood exposures to wind-blown particulate matter and inform public health action in the Imperial Valley. PHI's Tracking California collaborated with the University of Southern California and long-standing community partner, Comite Civico del Valle, for the study. Community members from this predominantly Latino community identified two priorities for the study, which were to understand the possible health effects of the shrinking Salton Sea and to track asthma and respiratory health among local children. 750 school children in Imperial and Riverside counties were surveyed.

Researchers found a high prevalence of respiratory symptoms among this cohort, including allergies, bronchitis symptoms, wheezing, and asthma diagnosis, which exceeds both CA state and US national prevalence estimates for children. Findings will help inform ongoing public health action in the Imperial Valley.



 **LOOKING BACK**

18 Years of Connecting Environmental Threats to Health

Tracking California joined PHI in 2006, when it was known as the California Environmental Health Tracking program, whose aim was to deliver data and science-based analyses on the trends, distributions and relationships between diseases and environmental threats. Its sophisticated, hyper-local data and tools have uncovered findings that have changed health policies and interventions. They have identified new California communities with elevated breast cancer rates; found that states were not testing adequately for lead exposure, missing more than half of their lead-poisoned children; and, revealed the amounts of pesticides applied near public schools and health disparities among children attending schools near the most pesticide use.

In 2010, the Public Health Institute established the **Center for Climate Change and Health** to reduce the negative impacts of climate change on human health, and to promote opportunities to improve health through strategies to address climate change. At the time it was launched, there were few working on the intersections between climate and health. The Center for Climate Change & Health went on to pass some of the strongest climate policy bills in the country.

