

DIABETES AND OBESITY IN ASIAN AMERICANS, NATIVE HAWAII'ANS, AND PACIFIC ISLANDERS

RESEARCH

ADVOCACY

POLICY

2016 AANHPI DIABETES
COALITION CONFERENCE



The Asian American Native Hawaiian & Pacific Islander (AANHPI) Diabetes Coalition was founded in 2011 with the mission of preventing and improving the care of diabetes in Asian Americans, Native Hawaiians, and Pacific Islanders through advocacy and education about research and policies, and building awareness at the community, professional, and political levels.¹ Together with its members and other partners, the AANHPI Diabetes Coalition has achieved several notable accomplishments, including the oversampling of Asian Americans in the National Health and Nutrition Examination Study (NHANES) that demonstrated a high prevalence of diabetes in Asian Americans,² the additional sampling of Native Hawaiians and Pacific Islanders in the 2014 National Health Interview Survey,³ and a change in the guidelines of the American Diabetes Association (ADA) that calls for screening of Asian Americans for diabetes at a body mass index (BMI) >23.⁴ The National Council of Asian Pacific Islander Physicians (NCAPIP) and AANHPI Diabetes Coalition have created a campaign, Screen at 23, to raise awareness of the need to screen Asian Americans using this ADA guideline.⁵

With these accomplishments, members of the AANHPI Diabetes Coalition believe that it is important to further the knowledge of diabetes and obesity in our communities and identify where new research, advocacy, and policies are needed to reduce diabetes disparities that are present for nearly all subgroups of our Asian American, Native Hawaiian, and Pacific Islander populations. It is imperative that we move forward to identify policies and programs that have been effective in reducing these disparities, highlight opportunities to fill gaps, and bring together stakeholders who can make changes happen.



1 National Council of Asian Pacific Islanders and Asian American Native Hawaiian & Pacific Islander Diabetes Coalition, State of the Science Conference: Diabetes in Asian Americans, Native Hawaiians & Pacific Islanders (2011), at: http://s3.amazonaws.com/NCAPIPportalDocfiles/compendium_Summary_high5.pdf

2 https://www.cdc.gov/nchs/nhanes/nhanes2011-2012/overview_g.html

3 <http://www.cdc.gov/nchs/nhis/nhpi.html>

4 American Diabetes Association. Standards of medical care in diabetes – 2015: summary of revisions. Diabetes Care. 2015;38(Supp 1):S8-S16

5 <http://screenat23.org>

WELCOME

Ho Luong Tran, M.D., M.P.H.

President and CEO, National Council of Asian Pacific Islander Physicians

Welcome and thank you for your time, and for your heart, in participating in the work of the AANHPI Diabetes Coalition. We have been raising awareness about diabetes in our Asian American, Native Hawaiian, and Pacific Islander communities. Now is the time to focus on the work of reducing disparities through research, advocacy, and policy.

OPENING REMARKS

Edward A. Chow, M.D.

Co-Chair, AANHPI Diabetes Coalition

We have come a long way since our first meeting five years ago in Honolulu, HI. At that first meeting, we reviewed the known literature and highlighted the need for more disaggregated data. Since, more researches and data have shown that screening should begin at BMI ≥ 23 , as had been done in Asia. We successfully advocated for the ADA to change its screening guidelines in 2015, and launched our *Screen at 23* Campaign. More recent data shows that half of Asian Americans with pre-diabetes are unaware of their risk, and screening would save thousands of lives. We continue to need to better understand how diabetes affects our Native Hawaiian and Pacific Islander populations.

George King, M.D.

Chief Scientific Officer, Joslin Diabetes Center

Professor of Medicine, Harvard Medical School

I also would emphasize how much we have accomplished in five years, and how important this meeting is for the next five years. Dr. Will Fujimoto first sounded the alarm about the increase in diabetes in Japanese Americans in the late 1970's, when diabetes prevalence was only 1-2% in Asia. Today, there are an estimated 100 million individuals with diabetes in China, and another 100 million in India.

We now know that there are differences in diabetes among Asian Americans, Native Hawaiians, and Pacific Islanders, even at the pathophysiological level.⁶ More disaggregated data is critical to understanding these differences. That is why oversampling of AANHPIs in studies such as NHANES is so important. We are glad for the support of the ADA in our work, including the change in the screening guidelines.

By just telling people to eat better and exercise does not always work. It is difficult to get overweight individuals to lose weight, and it is even more challenging to get individuals with BMI ≥ 23 to lose weight. We need more effective interventions for our AANHPI populations.

⁶ Hsu WC, Boyko EJ, Fujimoto WY, Kanaya A, Karmally W, Karter A, King GL, Look M, Maskarinec G, Misra R, Tavake-Pasi F, Arakaki R. Pathophysiologic differences among Asians, Native Hawaiians, and other Pacific Islanders and treatment implications. *Diabetes Care.* (2012);35(5):1189-1198

KEYNOTE ADDRESSES

J. Nadine Gracia, M.D., M.S.C.E. [by video]

Deputy Assistant Secretary for Minority Health

Director, Office of Minority Health, U.S. Department of Health and Human Services

My own story begins in a different country and in a different language, but I know the importance of culture and language in our lives, and appreciate the diversity of communities that we serve at the Office of Minority Health. We know that there are barriers to accessing care, and cultural and linguistic barriers when receiving care. A key gap is the lack of availability of data and that Asian Americans are the fastest growing racial group in the U.S. We have to enhance the availability of disaggregated data so interventions can be tailored to these diverse populations. Once we have the data, we know that the research has impacted policy and practice in the screening, diagnosis, and treatment of diabetes for Asian Americans. The Office of Minority Health will continue to support your important work.

Kirsten Bibbins-Domingo, M.D., Ph.D., M.A.S.

Professor of Medicine and of Epidemiology and Biostatistics, University of California San Francisco (UCSF) School of Medicine

Director, Center for Vulnerable Populations, UCSF School of Medicine

Chairperson, U.S. Preventive Services Task Force

The U.S. Preventive Services Task Force (USPSTF) is an independent body charged with making recommendations for clinical preventive services (screening tests, preventive medications, counseling) for individuals without any signs or symptoms of disease. USPSTF used to publish a thick binder with all of its recommendations, but today they are online, and are accessible to patients and community members.⁷

We ask for nominations for clinical preventive services topics, and prioritize them. Once a topic is prioritized, USPSTF creates a research plan, using an evidence-based practice center and compile a report on the current evidence about that clinical preventive service. USPSTF reviews the evidence report and develops a draft recommendation about the clinical preventive service. Recommendations are based on the evidence for the certainty of a net benefit from the clinical preventive services, and the magnitude of that net benefit. They are for the national population as a whole, rather than at an individual patient level when more specific factors would be included in a provider's evaluation and recommendation about that clinical service for that individual patient. USPSTF make several "grades" of recommendations, from "A" (substantial certainty of net benefit, substantial magnitude of net benefit) to "D". It can also make grade "I" recommendation, meaning that the evidence is insufficient and needs more research about the population-level net benefits of the clinical preventive service. The draft recommendation is disseminated for public comments, including those from relevant specialists. Finally, USPSTF is charged with preparing and submitting annual reports to Congress about its activities and recommendations, as about evidence gaps.

⁷ <https://www.uspreventiveservicestaskforce.org/Page/Name/recommendations>

The Affordable Care Act (ACA) has made USPSTF recommendations even more important with section 2713 requiring qualified health plans to provide all USPSTF recommended grades A and B clinical preventive services to their members, without any cost-sharing. Health plans can still provide and cover other clinical preventive services that are not grade “A” or “B” recommendations when ordered by a healthcare provider. Similarly, health plans can deny clinical preventive services that are not “A” or “B” recommendations, even when ordered by a physician. Such denials can be appealed through established processes by each health plan.

It is not the role of USPSTF to make health plan coverage decisions. Under the ACA, USPSTF “A” and “B” recommendations are the “floor” for coverage, not the “ceiling”. USPSTF recommendations have to be science-based and about the net benefits for all Americans. As clinicians, USPSTF members know the impact that coverage has on availability and utilization of the clinical preventive services, but this cannot be the basis for their recommendations.

USPSTF recommendations must be useful for and applicable to all communities. However, it recognizes that there are disparities in both health status and healthcare, and does consider health equity. In its evidence review, USPSTF looks at the available data stratified by age, sex, and race and ethnicity. There is tension in determining how much evidence is needed to make a recommendation for a particular subpopulation, and how much net benefit the recommendation would have. USPSTF recognizes the important role in calling for more research among diverse populations for clearer evidence. There is a balancing between applying the science and advocating for change.

For example, USPSTF has had an extensive dialogue about whether there should a specific recommendation for prostate screening for African American men. A methodology for evaluating the evidence about clinical benefits for subpopulations was developed. In all recommendations, there is important additional clinical information provided about the evidence that is the basis for the recommendation, including the available evidence about subpopulations.

Specifically for type 2 diabetes, USPSTF last updated its recommendation (see Table 1, next page) on clinical preventive screening for diabetes in October 2015, with a grade “B” recommendation to screen individuals who are ages 40-70 and who are overweight or obese for diabetes.

Final Recommendation Statement

Abnormal Blood Glucose and Type 2 Diabetes Mellitus: Screening

Recommendations made by the USPSTF are independent of the U.S. government. They should not be construed as an official position of the Agency for Healthcare Research and Quality or the U.S. Department of Health and Human Services.

Recommendation Summary

Population	Recommendation	Grade (What's This?)
Adults aged 40 to 70 years who are overweight or obese	The USPSTF recommends screening for abnormal blood glucose as part of cardiovascular risk assessment in adults aged 40 to 70 years who are overweight or obese. Clinicians should offer or refer patients with abnormal blood glucose to intensive behavioral counseling interventions to promote a healthful diet and physical activity.	B

This recommendation applies to adults aged 40 to 70 years who are seen in primary care settings and do not have obvious symptoms of diabetes. Persons who have a family history of diabetes, have a history of gestational diabetes or polycystic ovarian syndrome, or are members of certain racial/ethnic groups (that is, African Americans, American Indians or Alaskan Natives, Asian Americans, Hispanics or Latinos, or Native Hawaiians or Pacific Islanders) may be at increased risk for diabetes at a younger age or at a lower body mass index. Clinicians should consider screening earlier in persons with 1 or more of these characteristics.

Table 1

The recommendation also states that individuals who should be screened for diabetes also should be offered or referred to intensive behavioral counseling interventions to promote a healthful diet and physical activity. Health plans have interpreted this recommendation about interventions as an endorsement of the Diabetes Prevention Program⁸, which it is not. However, the Centers for Medicare and Medicaid Services (CMS) recently has certified the Diabetes Prevention Program as an evidence-based intervention that is reimbursable under Medicare.⁹

This current recommendation for diabetes screening includes a section on more specific clinical considerations, including references to the evidence that, for certain racial and ethnic groups, physicians may want to screen at a younger age, and at lower BMIs. However, most people only focus on the summary or “top-line” recommendation (grade “A” or “B”) without looking carefully at the entire recommendation.

USPSTF is currently drafting a recommendation on clinical preventive services for obesity.¹⁰

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Kevin L. Hagan **CEO, American Diabetes Association**

The Asian American Native Hawaiian & Pacific Islander Diabetes Coalition has an important role, and the American Diabetes Association (ADA) is proud to be a founding member. The

⁸ <https://www.cdc.gov/diabetes/prevention>

⁹ <https://innovation.cms.gov/initiatives/medicare-diabetes-prevention-program/>

¹⁰ U.S. Preventive Services Task Force, *Obesity in Adults: Screening and Management* (2012), at:

<https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/obesity-in-adults-screening-and-management>

Screen at 23 campaign is a call to action and a big step forward.

ADA has ongoing advocacy activities, including our Capitol Hill Advocacy Day. This year, ADA engaged constituents and representatives from National Football League teams from our *Team Tackle* initiative¹¹ and focused on members of the Appropriations Committees to educate them about diabetes. ADA continues to work with the White House on the *Making healthcare Better* initiative.¹² In its advocacy, on reducing health disparities, increasing access to care and prevention, and against discrimination against people living with diabetes.

ADA has a new *Diabetes INSIDE* program that bridges the gap between knowledge and doing within healthcare systems.¹³ It is an 18-month quality improvement program with data analytics and a scorecard, coaching and professional education, and self-management tools and resources for patients. It includes a focus on disparities, with work at the University of Hawaii.

ADA is returning to its roots in research to advance its programmatic work. There are new directors of community health strategies in its regional offices and ADA is recruiting community volunteers to help overcome barriers, including cultural barriers. The programs focus on lifestyle interventions (healthy choices, active living) with new intervention teams of nutritionists, exercise physiologists, and behavioralists. The *Get Fit, Don't Sit* pledge is to have no meeting longer than 90 minutes without a physical activity.¹⁴

Meanwhile, there are over 11,000 apps for diabetes management but many are not based in science. The ADA needs to be a trusted voice for consumers, and needs to get ahead of the technology curve. We have formed a partnership with IBM Watson to better understand and leverage technology.¹⁵

By the end of 2016, ADA will adopt a new strategic plan for the next ten years, acknowledging that there is a changing ecosystem for its work. Diabetes is a big global problem, and ADA is the largest diabetes organization in the world and will continue to lead in the prevention, treatment, and cure of the disease.

¹¹ http://www.diabetes.org/collab/team-tackle/?utm_source=DSH_BLOG&utm_medium=Share&utm_content=April2016-Team-Tackle&utm_campaign=IT

¹² https://www.whitehouse.gov/sites/whitehouse.gov/files/documents/Diabetes_Report_04-06-16_FINAL.PDF

¹³ <http://www.diabetes.org/newsroom/press-releases/2016/recieved-award-from-acehp-for-diabetes-inside.html>

¹⁴ <http://www.diabetes.org/newsroom/press-releases/2016/2nd-annual-national-get-fit-dont-sit-day.html>

¹⁵ <http://www.diabetes.org/newsroom/press-releases/2016/American-Diabetes-Association-and-IBM-Watson-Health-Join-Forces-to-Imagine-How-Diabetes-is-Prevented-and-Managed.html>

ADDRESSING UNDIAGNOSED CASES OF DIABETES IN ASIAN AMERICANS

Maria Rosario (Happy) Araneta, Ph.D., M.P.H.

Professor of Epidemiology, University of California San Diego School of Medicine

**Member, Advisory Council, National Institute of Minority Health and Health Disparities,
National Institutes of Health**

ADA 2015 Guidelines for screening for type 2 diabetes (T2D) among asymptomatic individuals has reduced the body mass index (BMI) screening cutpoint for Asian Americans to ≥ 23 kg/m² (from previous cutpoint of BMI ≥ 25 kg/m²). In one major study in northern California, Pacific Islanders (18.3%), Filipinos (16.1%), and South Asians (15.9%) had higher T2D prevalence compared to ethnic groups perceived to be at highest risk, including Latinos, African-Americans, and Native Americans. Southeast Asian, Japanese, Vietnamese, Korean, and Chinese had higher T2D prevalence compared to Whites, despite low rates of obesity.

In developing the evidence for an optimal BMI cutpoint for screening Asian Americans age 45 and older for diabetes, data were combined from all Asian American community-based clinical studies that ascertained newly diagnosed T2D with a two hour, 75 gram oral glucose tolerance tests (OGTT). These four clinical cohorts included the Mediators of Atherosclerosis among South Asians Living in America (MASALA) Study in San Francisco, CA and Chicago, IL; the North Kohala Study on the island of Hawaii; the Seattle Japanese Diabetes Community Study in Seattle, WA; and the University of California San Diego Filipino Health Study in San Diego, CA, and comprised 1663 participants. 2010 ADA criteria for defining diabetes was used: HbA1c ≥ 6.5 %, or fasting plasma glucose ≥ 126 mg/dl, or 2 hour postprandial plasma glucose ≥ 200 mg/dl.

The previous BMI cutpoint of ≥ 25 kg/m² would have failed to identify over one-third (36%) of Asian Americans with newly diagnosed T2D. Lowering to ≥ 23 kg/m² would achieve a targeted sensitivity of 80%, and would be applicable to men, women, and the Asian American subgroups in these four cohorts (see Table 2). If Asian Americans ages ≥ 45 years with BMI ≥ 23 kg/m² were screened for T2D, an estimated 200,000 newly diagnosed T2D cases in the U.S. would be identified, and would benefit from early diagnosis and medical management.

Optimal BMI Cut Points at Targeted Sensitivity of 80%

	BMI (kg/m ²)	Sensitivity (%)
Total	23.5	80.3
Men	23.5	79.2
Women	23.5	78.9
Filipino	23.6	79.5
South Asian	23.4	79.4
Japanese	22.8	80.9

With a targeted sensitivity of 80%, the optimal BMI cut point is 23.5 kg/m²

Araneta, Kanaya, Hsu et al *Diabetes Care* 2015;38(5):814-20

Table 2

The 2-hour OGTT is the gold standard to ascertain T2D, but is inconvenient to administer compared to the glycated hemoglobin (HbA1c) or fasting plasma glucose (FPG) test. Among the 1,214 participants with all three diagnostic measures, T2D prevalence was 18.4% (by any of the 3 diagnostic methods). However, T2D prevalence appears less than half (9.2%) if screening is limited to just an HbA1c test, and only at 5.2% with just the FPG test. The 2-hour values from the OGTT test identified the majority (15.5%) of Asian Americans with T2D (see Table 3). In other words, half (44%) of T2D cases would not be diagnosed if screening is limited to just an HbA1c or FPG test, reinforcing the importance of the OGTT test among Asian Americans.

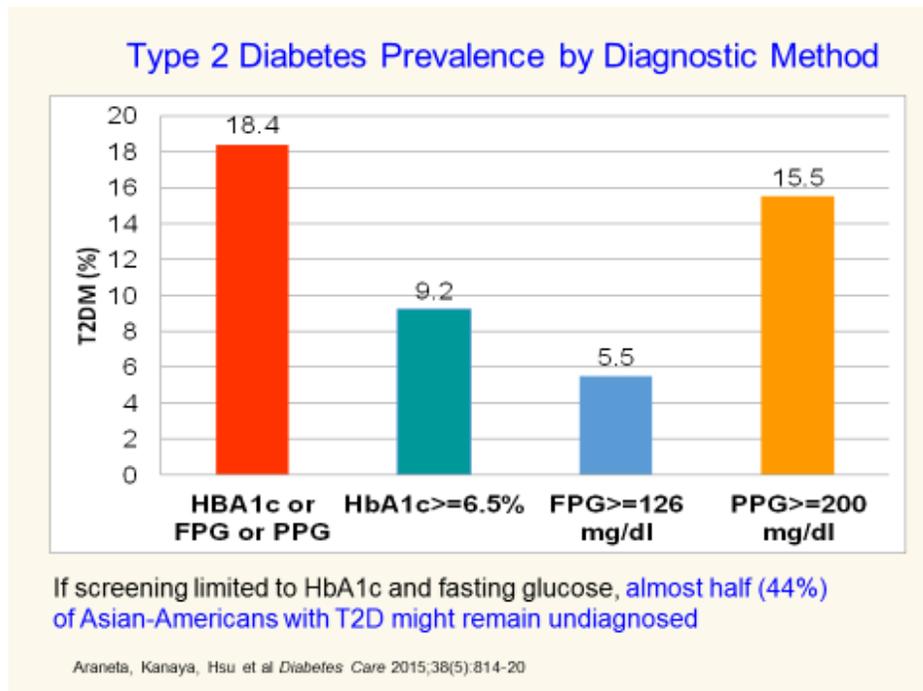


Table 3

Screen at 23 Campaign will help detect new cases of diabetes among Asian Americans, and raise awareness of type 2 diabetes risk despite the absence of general obesity.

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Edward Gregg, Ph.D.

Chief, Epidemiology and Statistics Branch, Division of Diabetes Translation, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention

How is diabetes the same, different, or unknown for Asian Americans? The National Health Interview Survey (NHIS) collected data about self-reported diabetes, including for Asian American subgroups, since 1997. The state-based Behavioral Risk Factor Surveillance System (BRFSS) also collects data about self-reported diabetes. If BRFSS data is combined across states, national estimates can be generated. For example, the combined BRFSS data from 2013-14 shows higher diabetes prevalence for Asian Indians and Filipinos. The National Health and Nutrition Examination Study (NHANES) has the smallest national sampling but has clinical testing that can identify undiagnosed cases of diabetes. NHANES has collected data from Asian American subgroups since 2011, and we now have four years of data. Among Asian Americans, 10% had been diagnosed with diabetes, but another 10.6% were undiagnosed.



Sources of Surveillance for Asian Americans	
■ National Health Interview Survey:	
• Largest national sample for yearly trends.	
• Diabetes by self-report.	
• Asian subgroups and country of origin since 1997.	
■ BRFSS	
• State and county estimates.	
• Self-reported diabetes in primary subgroups.	
■ NHANES	
• Prevalence of diagnosed and undiagnosed diabetes.	
• Smaller samples than NHIS or BRFSS	
• Asian subgroups beginning in 2011 (now available 2011-2014).	

Table 4

Overall, there has been a decrease in diabetes incidence, and a plateau in prevalence over the last six years. However, there has been an increase in type 2 diabetes among youth from all racial and ethnic groups. Both lifetime risk and number of life-years with diabetes are increasing.

There are several public health actions that can be taken related to diabetes: health system approaches, health promotion approaches, and population-targeted policies. Multi-tiered, risk stratification approaches are needed to link interventions to risk level, that will identify and refer those at risk to evidence-based prevention programs. Such approaches will result in early detection and prevent morbidity. There are now over 1,000 National Diabetes Prevention Programs (DPP) serving over 85,000 participants; nationally, 1.3% of the participants are Asian American. However, in some DPP sites, over 25% of the participants are Asian American (in

Seattle, WA; Rockville, MD; Portland, OR, and Fairfield, CA).

Nonetheless, there are still gaps in surveillance about the variations in incidence trends, care, and complications related to diabetes among Asian Americans. There also continue to be gaps in research about the effectiveness of prevention programs among Asian Americans with different high risk phenotypes, among moderate risk Asian American populations, across Asian American subgroups, and across intervention modalities.

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Alka Kanaya, M.D.

Professor of Medicine, University of California San Francisco

National, state, and local data all show higher prevalence of diabetes among Filipinos and Asian Indians. BRFSS data from 2013-14 shows that Filipinos and Asian Indians had the highest prevalence of self-reported diabetes, and the prevalence among Asian Indians and Filipinos in the BMI ≥ 23 kg/m² category were higher than Chinese, Japanese and whites with BMI >23 .

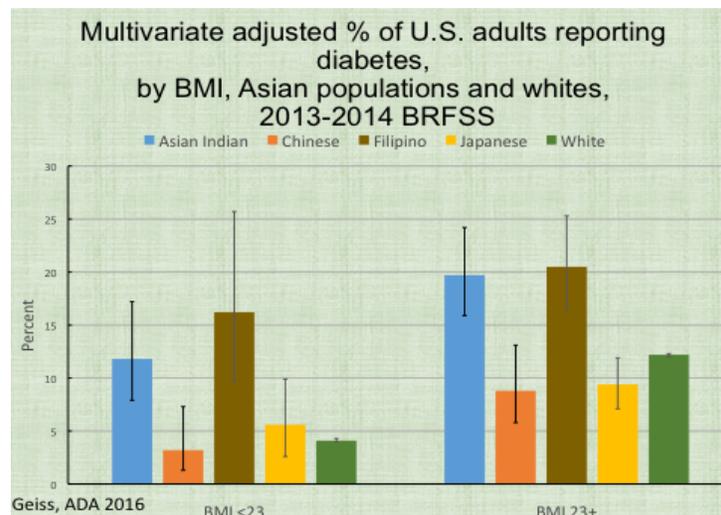


Table 5

Similarly, data collected from 29 communities in 17 states from 2009-2012 in the Racial and Ethnic Approaches to Community Health (REACH) program showed self-reported prevalence of diabetes of 19.4% among Asian Indians in New York, NY and about 15% among Filipinos in Los Angeles and Orange County, CA and King County, WA (see Table 5).

Data from the California Health Interview Survey showed high rates of self-reported diabetes among Filipinos and South Asians, especially at BMI ≥ 25 . Unpublished data from the Community Health Needs and Resource Assessment Survey in New York from 2014-16 also showed high rates of self-reported diabetes among Bangladeshis, Pakistanis, Asian Indians, Filipinos, and Indo-Caribbeans (see Table 6).

Sutter Health organization data showed the highest prevalence among Filipinos and Asian Indians, and Kaiser Permanente of Northern California data showed the highest prevalence among Pacific Islanders, South Asians, and Filipinos. Also, Asian Americans have the highest proportion (51%) of undiagnosed diabetes.

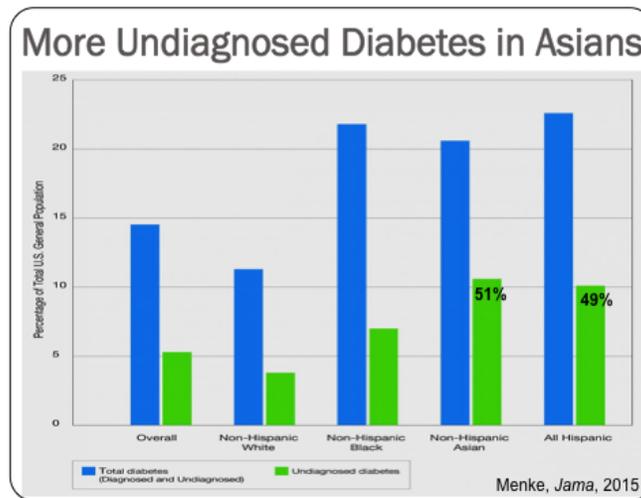


Table 6

To better understand diabetes among Filipinos and South Asians, data from four community studies between 1997 to the present were examined. These studies were the Mediators of Atherosclerosis among South Asians Living in America (MASALA), the North Kohala Study, and the University of California San Diego Filipino Women’s Health Study and Filipino Men’s Health Study. By examining the data from the different diagnostic tests used in these studies, 12-14% cases of diabetes would be over-diagnosed with just HbA1c tests but 42-48% cases of diabetes would be undiagnosed without using a 2 hour post challenge glucose test (see Table 7).

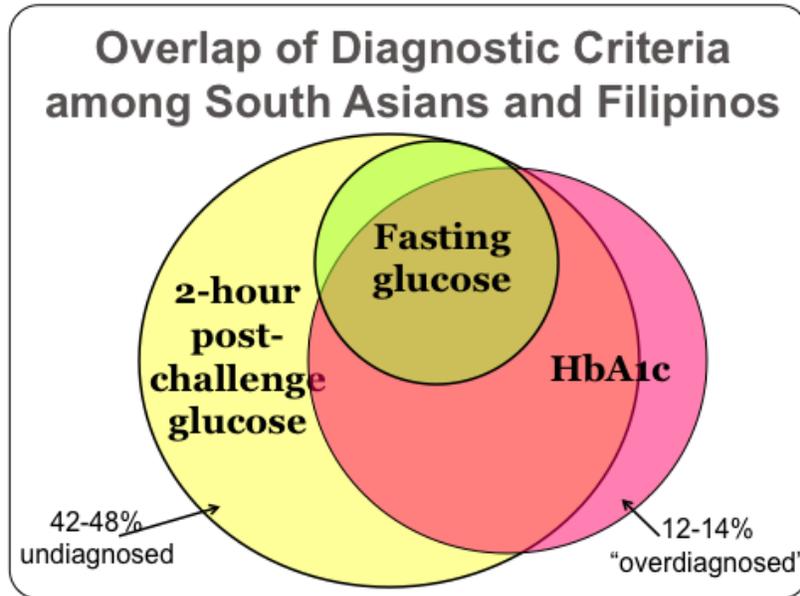


Table 7

Diabetes-related morbidity such as myocardial infarction, congestive heart failure, and stroke/transient ischemic attack are highest in Pacific Islanders, South Asians, and Filipinos.

Given these data showing similarities in prevalence, incidence and complications of type 2 diabetes between Filipinos and South Asians, if full disaggregation is not possible for all Asian groups, does it make sense to aggregate Filipinos and South Asians for data analyses?

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DIABETES IN NATIVE HAWAIIANS AND PACIFIC ISLANDERS

Sela Tukia - Consul General, Tonga

There are 57,000 Tongans in the U.S. and the Government of Tonga has representatives in New York, NY; Washington DC; Honolulu, HI; and Burlingame, CA. The states where most Tongans reside are California, Utah, Washington, and Hawaii, because of the weather, airline hubs, and employment opportunities. Most Tongans send remittances home to their families from the income they earn. While they are looking for the American Dream, there is a high price to pay with changes in diet, stress, and convenience.

Non-communicable diseases such as diabetes and obesity are increasingly important in Tonga and among Tongans in U.S. We are battling pandemics of epic proportions; diabetes is a silent killer. Tonga has adopted a National Strategy on Non-Communicable Diseases. For example, we are focusing on the first 1,000 days with pregnant women, to reduce risks for obesity, heart disease, and diabetes. The struggle is real and the battle is on our own doorsteps; both my mother and my husband have diabetes.

We need disaggregated data to be inclusive of Tongans and other Pacific Islanders. As Tongans, we have the challenge of being seen, but not heard. Should there be a different diabetes screening BMI cutpoint for Pacific Islanders?

Wilfred Fujimoto, M.D.

Professor Emeritus of Internal Medicine, University of Washington

It is not known why diabetes is so prevalent among Native Hawaiian and Pacific populations. What is the pathogenesis of diabetes among Native Hawaiian and Pacific Islander populations? Why is diabetes prevalence higher compared to others living in similar conditions?

Sela Panapasa, Ph.D.

Research Investigator, University of Michigan Institute for Social Research

Since 1997, there has been a federal mandate to collect separate data on Native Hawaiians and Pacific Islanders, a broad classification that includes indigenous, migrant, and immigrant populations. There are over 22 Pacific Island ethnicities, which are diverse culturally, and speak many languages. The Samoan culture is matriarchal and the Tongan culture is patriarchal.

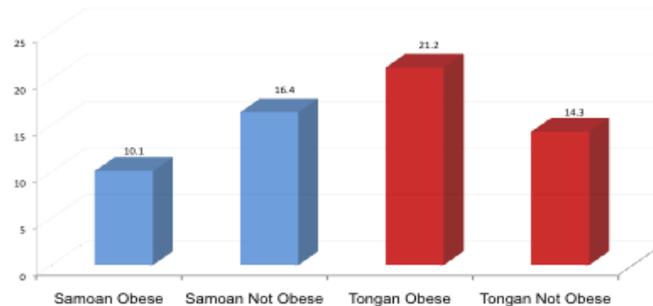
For many years, we have raised the issue of the inadequacy of Native Hawaiian and Pacific Islander data, and asked for oversampling of Native Hawaiians and Pacific Islander in the National Health Interview Survey (NHIS). While we have been waiting, we have collected and analyzed our own data on Pacific Islanders.

The Pacific Islander Health Study focused on Tongan and Samoan populations. There are over 184,000 Samoans and over 57,000 Tongans in the U.S. The largest populations live in California, with 32% Samoans and 40% Tongans residing. Our sampling (n=240) was based on 20 faith-based registries of adults and adolescents. Questions were based on both NHIS and California Health Interview Survey, including self-report of BMI (waist/hip measurements). We weighted our data based on U.S. Census data.

BMI of ≥ 30 was used as cut-point for overweight/obese and 79% of Samoans and 73% of Tongans were overweight/obese with the rate being even higher for age group 25-45 (up to 91%).

15.3% Samoans and 16.4% Tongans self-reported a diagnosis of diabetes. One of the important findings is that the higher incidence of obesity is not predictive of a higher incidence of diabetes among Pacific Islanders (see Table 8). We need more research to understand both diabetes and obesity among Pacific Islanders.

Distribution of Diabetes/BMI ≥ 30



Source: NHIS, CHIS, PIHS 2012

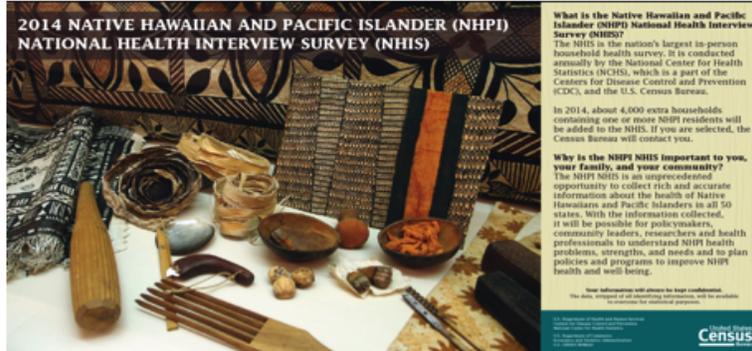
Table 8

Panapasa S, Jackson J, Caldwell C, Heeringa S, McNally J, Williams D. *Pacific Islander Health Study*. University of Michigan Institute for Social Research (2016)

Samuel Wu, Pharm.D.

Public Health Advisor and Asian American, Native Hawaiian, and Pacific Islander Policy Lead, U.S. Department of Health and Human Services Office of Minority Health

The Office of Minority Health (OMH) strategies include data, partnerships, and demonstration and evaluation research. Under section 4302 of the Affordable Care Act, OMH established data collection standards for seven subcategories of Asians (Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese and Other Asian) and for four subcategories of Native Hawaiians and Other Pacific Islanders (Native Hawaiian, Guamanian/Chamorro, Samoan, and Other Pacific Islander). 2010 Census reported that there were over 1.2 million Native Hawaiians and Other Pacific Islanders in the U.S., 0.4% of the total U.S. population.



The NHPI NHIS

We have heard the voices from the community asking for nationally representative data on Native Hawaiians and Pacific Islanders so the Native Hawaiian Pacific Islander National Health Interview Survey was conducted in 2014.¹⁶ In the NHIS annual sample of 35,000-50,000 households, usually there are only 100-150 Native Hawaiian and Pacific Islanders households included. Since we know that there is a geographic concentration of Native Hawaiian and Pacific Islander populations in a few states, we cannot use traditional national oversampling techniques. Using American Community Survey data, a sample of 8,000 Native Hawaiian and Pacific Islander households was developed. Additional training for surveyors and outreach to community leaders and media were completed. The data was collected during February through November 2014 and the first data will be available in 2016.

Raynald Samoa, M.D.

Assistant Professor of Diabetes, Endocrinology & Metabolism and Endocrinologist, City of Hope, Los Angeles

The prevalence of diabetes is as high as 47% in the Pacific jurisdictions, and 20.6% among Pacific Islanders in the U.S. The University of California Los Angeles used data from the California Health Interview Survey and the National Health and Nutrition Examination Survey to estimate a pre-diabetes rate of 55% among Pacific Islanders in California and 43% among Pacific Islanders in California ages 13-39 years old. Native Hawaiians and Samoans have later diagnoses of diseases and higher mortality rates (see Table 9, next page). There also may be significant co-morbidity between diabetes and cancer. We are trying to bring parity to Pacific populations but if the Pacific is the forecast for what diabetes in the U.S. may look like in the future, there is fertile ground for learning and prevention.

¹⁶ <http://www.cdc.gov/nchs/nhis/nhpi.html>

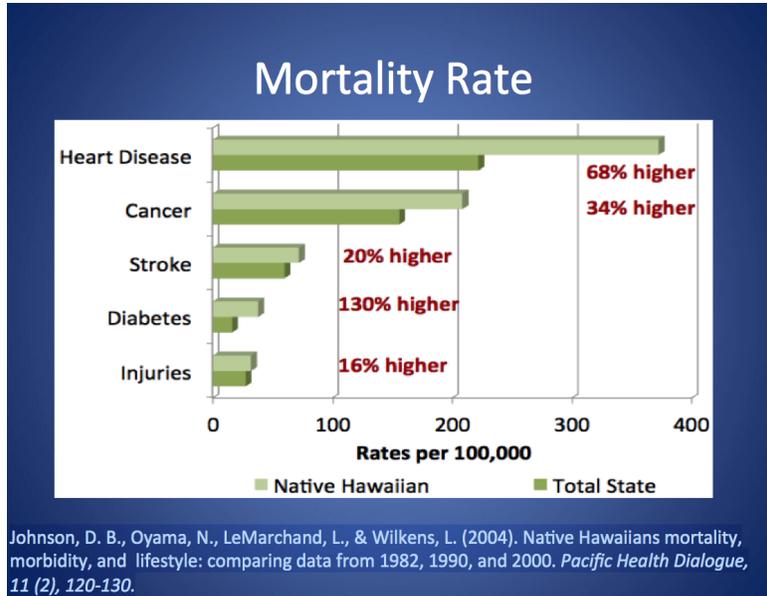


Table 9

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Ryan Minster, Ph.D., M.S.I.S.

Assistant Professor of Human Genetics, University of Pittsburgh School of Public Health

According to the World Health Organization, the prevalence of obesity is highest among Polynesians and Micronesians (50.8 in the Cook Islands, 47.6 in Palau, 43.4 in Samoa, 43.3 in Tonga, and 42.8 in the Marshall Islands) (see Table 10).

	Obesity Prevalence (%)
Cook Islands	50.8
Palau	47.6
Nauru	45.6
Sāmoa	43.4
Tonga	43.3
Niuē	43.2
Marshall Islands	42.8
Qatar	42.3
Kiribati	40.6
Tuvalu	40.3

WHO 2014

Table 10

A genome-wide association study (GWAS) was conducted in 17 villages in Samoa, with n=3,072 in the discovery group (1,235 men and 1,837 women), and n=2,102 in a replication

group. The average BMI in the discovery group among men was 31.3, and among women was 34.9. The rate of diabetes was 16% among men, and 17% among women.

Genotyping was conducted and focused on chromosome 5. Initially, a variant strongly associated with BMI, *rs12513649*, was identified in the discovery group, and the association was confirmed in the replication group. Additional genetic sequencing identified the missense variant *rs373863828* allele (Arg457Gln) (see Table 11), which had a frequency of 25.6% among the Samoans in this study, while it is essentially not present in East Asians, South Asians, Admixed Americans, Europeans, and Africans. The presence of this genetic variant is correlated with an increased risk for obesity (increased risk of 12.6%), but a decreased risk for diabetes (decreased risk of 26.9%). Other studies show that it may decrease cellular energy utilization while promoting lipid accumulation; this would be consistent with an increased risk for obesity.

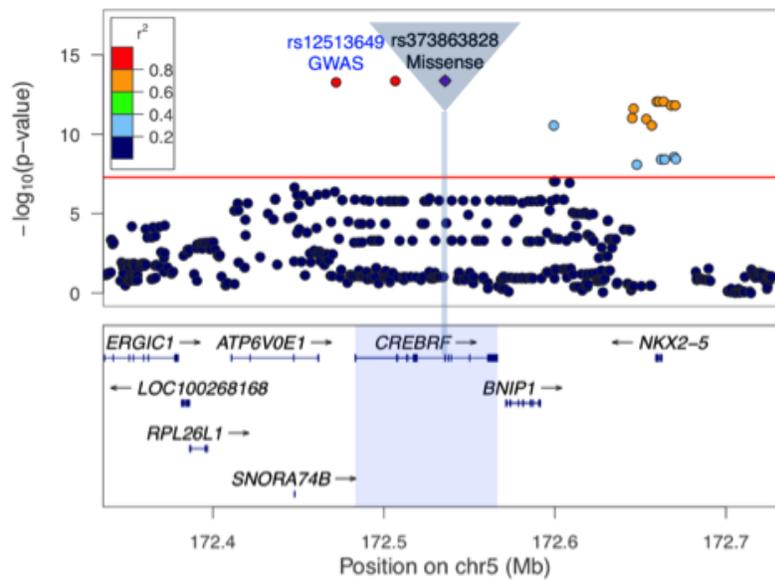


Table 11

Reference

Minster RL, Hawley NL, Su CT, Sun G, Kershaw EE, Cheng H, Buhule OD, Lin J, Reupena MS, Viali S, Tuitete J, Nasen T, Urban Z, Deka R, Weeks DE, McGarvey ST. A thrifty variant in CREBRF strongly influences body mass index in Samoans. *Nat Genet.* 2016;48(9):1049-1054

Nicola Hawley, Ph.D.

Assistant Professor of Epidemiology, Yale School of Public Health

The rate of obesity in American Samoa is nearly 75% among adults (BMI ≥ 30). We know that prevention of diabetes is better than treatments or a cure. The focus of our research for the past six years has been on Samoan pregnant women and infants. Over 35% of Samoan infants already are obese at 15 months of age, increasing to over 43% by kindergarten.

Using a prevention perspective, we began looking at pregnant women to try to break the cycle

of intergenerational obesity. We know that, regardless of weight, pregnant women experience a number of physiological changes, including an increase in adipose tissue, higher triglycerides, and insulin resistance. For obese women, these physiological changes are magnified. Fatty acids, glucose, and inflammatory markers can cross the placenta, leading to increased adipose tissue in the developing infant. Since insulin does not cross the placenta, the infant also begins to increase insulin production to respond to the glucose, and can also begin to become insulin-resistant. Prior to our research, there had not been any interventions to reduce obesity focused on Pacific Islander pregnant women.

We looked first at gestational weight gain among the pregnant mothers in American Samoa. Since 90% births in American Samoa are at LBJ Hospital, we were able to gain access to most of the pregnant women. We found that 52% of the pregnant women were obese, and that the excess gestational weight gain during pregnancy was very high (78%). Interestingly, it was excess gestational weight gain in third trimester (rather than the first or second trimester) that was correlated with large-for-gestational-age infant age (over 15%). Interventions can then focus on the third trimester, even if there has been a delayed start to prenatal care (see Table 12).

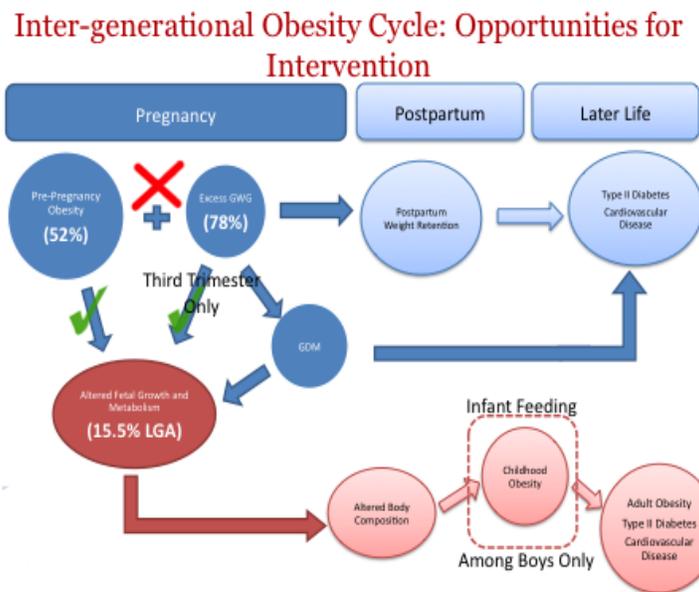


Table 12

Post-partum, we focused on infant feeding since we know that in other populations, breastfeeding is protective against infant weight gain. We used data from the well-baby clinic (documenting breastfeeding, formula feeding, or a combination). We found that breastfeeding is protective against weight gain among Samoan infant boys, but not among Samoan infant girls.

Finally, we have been investigating the culturally acceptability of breastfeeding. We asked 46 new mothers in focus groups about the pros and cons of breastfeeding, and their perspectives

about infant body size. While feelings breastfeeding were overwhelmingly positive, the women struggled with pain, lack of sufficient milk, and felt that formula was convenient in situations where they needed to leave the home. And even after identifying a “healthy” infant body size, nearly 43% of the new mothers preferred their infants to be larger.

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Brenda Yamashita

Asthma Team Program Director, Alameda County Public Health Department

There is a Regional Pacific Islander Task Force (for San Francisco, Alameda, San Mateo counties) that is working on increasing awareness of Pacific Islander issues. The task force is aligning our respective county public health department efforts to be inclusive of Pacific Islanders. One of our priorities is improve our data collection. Our task force has been working on issues of population health, maternal/child/adolescent health, mental health/behavioral health, housing, education, youth development, and juvenile justice.

Joseph Keawe'aimoku Kaholokula, Ph.D.

Associate Professor and Chair, Native Hawaiian Health, John A. Burns School of Medicine, University of Hawaii at Manoa

The PILI 'Ohana Project is a community-based lifestyle and diabetes self-care program that has been implemented for 12 years in Hawaii.¹⁷ Pili means “stick to” or come together, and 'Ohana means family. We have conducted community-based participatory research to develop and implement the program, integrating community wisdom and scientific inquiry to develop an effective community-based health promotion program to achieve health equity in Hawaii and in the larger Pacific region.

Obesity among Native Hawaiians and Pacific Islanders is 4 times higher than among Asian Americans, and 30% higher than Whites. Diabetes among Native Hawaiians and Pacific Islanders is up to 4 times higher than Whites. Prevailing strategies to address obesity and diabetes neglect the social determinants of health, do not have any socio-cultural context, often are too intense, are based on ideals rather than reality, are not easily accessible by those at risk, and are not sustainable across settings. Even in the Diabetes Prevention Program, only 42% of the participants achieved the weight loss goal. In Hawaii, there is a high cost of living, community members are often working two jobs and have hour-long commutes, so they eat fast food and have no time for physical activity.

After community input, we created a social and ecological model and translated the 16 individual lessons from the Diabetes Prevention Program into 8 group sessions over 3 months, adding content about the economics of healthy eating and how to talk with healthcare providers.

¹⁷ <http://www2.jabsom.hawaii.edu/pili/index.html>

We also added a 6-month weight loss maintenance program (See Tables 13, 14 on next page) with a family and community component. There were Native Hawaiian, Chuukese, Samoan, and Filipino participants in the program.

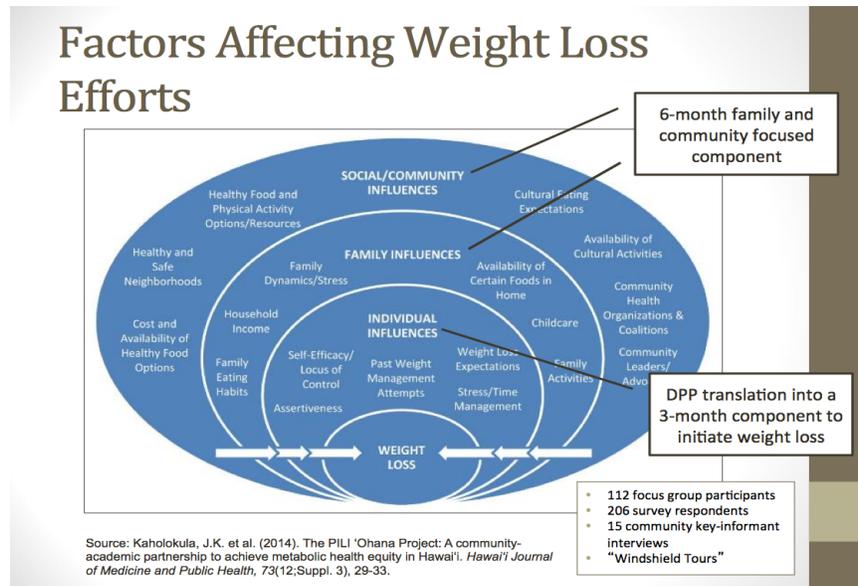


Table 13

In a pilot randomized controlled trial (2005-2008), 51% of the participants in this adapted 9 month program maintained weight loss of $\geq 3\%$, compared to 31% in the control group with standard follow-up of monthly phone check-ins. We also found that community peer facilitators were more effective than more educated facilitators. Finally, we found that initial weight loss (in the first 2-3 months) was predictive of maintenance of weight loss.

Family & Community Component

Month	PILI Lifestyle Intervention (PLP)
1	Identify healthy lifestyle values shared by all family members Family goal setting exercise Schedule family free time for activities
2	Family eating history exercise Family meal planning exercise Identify community resources to support healthy lifestyle plan
3	Identify physical/recreational activities for the family Family activity planning exercise Identify community resources to support family activities
4	Identify ways the family can deal with difficult social events involving food Identify family's cultural beliefs that relate to healthy living Identify ways to increase social support in the home and in the community
5	Managing negative thoughts/emotions exercise Increase family's understanding of how negative thoughts/emotions can affect healthy living goals Identify community resources to help manage negative thoughts/emotions
6	Review of lessons, family action plans, and goals Plan next steps in maintaining a healthy lifestyle

Table 14

We then conducted a full randomized controlled trial (2008-2013) comparing the adapted 9-month program with a control group of standard follow-up of monthly educational newsletters. 57% of the participants in the intervention group maintained weight loss of $\geq 3\%$ after 18 months, compared to 38% in the control group. We found that the more effective group facilitators had intimate knowledge of the community and were actively involved in the community; they were successful in increasing participant engagement with group interaction, games, activities, and immediate positive reinforcement. We found that weight loss in the first 3 months was predictive of maintenance of weight loss at both 12 months and 18 months. This leaves the question of whether we should try something else if the program is not working for participants after 3 months. We need to better understand the factors that influence success in the first 3 months.

Beginning in 2014, the PILI 'Ohana program has been replicated throughout Hawaii and in California, partnering with over 20 community-based organizations using community-to-community capacity building and mentoring.

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SCREEN AT 23: AN ADVOCACY MODEL

Edward A. Chow, M.D.

Co-Chair, AANHPI Diabetes Coalition

Our AANHPI Diabetes Coalition advocated for a change in the diabetes screening guideline to a lower BMI for Asian Americans. Researchers laid the foundation and evidence base for the American Diabetes Association (ADA) to change its screening guideline for Asian Americans in January 2015 to screening at a BMI of ≥ 23 .¹⁸

However, we know that it can take ten years to implement a guideline change in clinical practice. Therefore, we need to educate providers and professional organizations and the Asian American community about this new diabetes screening guideline. And we need to make sure that our messages are correct; for example, this is not new standard for obesity. The *Screen at 23* campaign received important media coverage in a Los Angeles Times article.¹⁹ The ADA Asian American Pacific Islander Diabetes Action Council and ADA chapters also have been disseminating information about the *Screen at 23* campaign. We now have a refined message and a slide presentation that is available for provider and community education.

There are parallels to the work on Hep B among Asian American providers and communities. Similar to our work on Hep B, our *Screen at 23* campaign began with the San Francisco Department of Public Health,²⁰ with endorsements from the San Francisco Medical Society and local community-based organizations. Now, the Hawaii State Senate also endorsed the *Screen at 23* campaign,²¹ and we have legislation pending in California.

We recognize that many people don't trust the government but do trust their doctors. The *Screen at 23* campaign also has been disseminated among physicians and physician organizations. The California Medical Association and Santa Clara Medical Society also have endorsed the *Screen at 23* campaign, the San Francisco Medical Society published an article about *Screen at 23* in its monthly magazine,²² and the California Academy of Family Physicians sent out an electronic letter to its members about the *Screen at 23* campaign. The campaign has made presentations to health plans, such as CalOptima, Kaiser, Blue Cross of California.

The National Council of Asian Pacific Islander Physicians has been working with the American Medical Association (AMA) and the Centers for Disease Control and Prevention (CDC) to review their Prevent Diabetes STAT (pre-diabetes) program. The AMA and CDC have agreed that they will change their diabetes screening recommendation for Asian Americans from a BMI of ≥ 22 to a BMI of ≥ 23 in that program.²³

¹⁸ American Diabetes Association. Standards of medical care in diabetes – 2015: summary of revisions. *Diabetes Care*. 2015;38(Suppl 1):S8-S16

¹⁹ Karlamangla S. Doctors' message to Asian Americans: watch out for diabetes even if you're young and thin. *Los Angeles Times*, April 19, 2016, at: <http://www.latimes.com/health/la-me-asian-americans-diabetes-20160419-story.html>

²⁰ http://screenat23.org/wp-content/uploads/2015/11/Press-Release_Screen-at-23.pdf

²¹ Hawaii Senate Resolution 23, adopted March 21, 2016, at:

http://www.capitol.hawaii.gov/Archives/measure_indiv_Archives.aspx?billtype=SR&billnumber=23&year=2016

²² Chow EA, Hawks DL. The Asian BMI I 23: screening for diabetes in Asian Americans. *San Francisco Med*. 2015;88(4):24

²³ <https://assets.ama-assn.org/sub/prevent-diabetes-stat/downloads/AMA-CDC-DPP-Guide-STAT.pdf>

Elisa Choi, M.D.

Chairperson, Asian American Commission, Commonwealth of Massachusetts

From 2000 to 2010, Asian Americans were the fastest growing racial group (47% increase) in Massachusetts; there are significant Asian American populations in Boston, Quincy, and Lowell. The Asian American Commission (with 21 members) was created by the Massachusetts legislature ten years ago; prior commissions and advisory bodies were created by governors and were not permanent. There now is an Asian Pacific Islander Political Caucus of elected officials in Massachusetts. Our commission hopes to work with community-based and faith-based organizations, and healthcare providers.

Richard Pan, M.D.

California State Senator

As a physician I completed a child advocacy fellowship and primary care research fellowship so I understand the importance of both research and advocacy. I learned to ask, what practice and policy changes are needed? How do we know the changes made a difference?

As an elected official, I understand that we need data, a strategy, and the political will to make policy changes. Sometimes, we have to make policy changes even when the data is still incomplete. We know that a lot of published research still only has data about Blacks, Whites, Hispanics, and Others. There are health disparities among Asian Americans and Pacific Islanders and that half of Asian Americans with diabetes are undiagnosed.

Under the Affordable Care Act, there are no co-payments for preventive services if they are recommended by the U.S. Preventive Services Task Force. The current recommendations are to screen for overweight/obesity at a BMI ≥ 30 , and for diabetes, at a BMI ≥ 25 . However, the notes accompanying the recommendation do recommend additional screening for other at-risk groups, including Asian Americans and Pacific Islanders. Our challenge is to move this recommendation from the notes to a topline recommendation. We can also work to incorporate these recommendations as reminders for providers in electronic health records.

There are important role for policymakers on these issues. In California, we enacted Assembly Bill 1726,²⁴ which requires additional disaggregation of data collected about Asian Americans and Pacific Islanders. We especially need health plans to be supportive of this disaggregation in the data that they collect about their members. And I am sponsoring Senate Concurrent Resolution 134, which supports the *Screen at 23* campaign. [The resolution was enacted by the California Legislature on September 9, 2016].²⁵ I support your research and advocacy efforts because we are all working on improving the lives of our communities.

George Liu, M.D., Ph.D.

Director, Asian Diabetes Center, New York

President and CEO, Coalition of Asian-American IPA (CAIPA), New York

²⁴ California Assembly Bill 1726, at: http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB1726

²⁵ California Senate Concurrent Resolution 134, at: http://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SCR134

Our Asian American IPA in New York, NY has over 870 physicians and 450,000 patients; 95% of our patients are Chinese American. Our physicians have been screening our patients for diabetes at BMI ≥ 23 since 2005, after the World Health Organization recommendation for screening for Asians was made.²⁶ Based on lab data from the 23 health insurance plans we contract with, among our patients under age 65, 11% have diabetes, and 48% have prediabetes. Among our patients age 65 and older, 32% have diabetes, and 57% have prediabetes.

Currently there is no payment for nutrition education for patients with prediabetes. We are interested in the influence of carbohydrate intake on diabetes. We also are concerned about how to reduce prescription medication costs for our patients, which have become so expensive.

COMMUNITY-CLINICAL LINKAGES TO PREVENT TYPE 2 DIABETES

Christopher Holliday, Ph.D., M.P.H.

Director, Population Health and Clinical-Community Linkages, American Medical Association

Diabetes is personal, with a mother that has had diabetes for ten years, and now cannot see out of one eye. There are 86 million Americans with prediabetes and 29 million with diabetes. In a typical physician panel of 100,000 patients, up to 40% have prediabetes. In 2012, the total cost of diabetes care was \$245 billion, or \$2,700 per diagnosis.

The American Medical Association (AMA) has a strategic focus on supporting physician satisfaction, providing practice improvement resources, and improving patient health outcomes through clinical-community linkages. The AMA-Centers for Disease Control and Prevention (CDC) Prevent Diabetes STAT (Screen, Test, Act Today) toolkit²⁷ supports physician awareness about diabetes, identification and education of at-risk patients, referral of patients to evidence-based diabetes prevention programs, and follow-up on patient progress. There is more work that could be done using electronic health records to automate the identification of patients for batch referrals to the Diabetes Prevention Program.

Recent game changers have been the U.S. Preventive Services Task Force recommendation for diabetes screening that now must be covered by health insurance without co-payments, its recommendation for diet and physical activity promotion programs, and the certification of Medicare coverage for the Diabetes Prevention Program.

We are also seeing increased alignment between screening and referral as part of population health management and care management in patient-centered medical homes. There is still work needed to develop a quality measure for diabetes screening.

²⁶ WHO Expert Consultation. Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies. *Lancet*. 2004;363(9403):157-163

²⁷ <https://preventdiabetesstat.org>

COLLABORATION IN THE PREVENTION AND CARE OF DIABETES

Kenneth P. Moritsugu, M.D., M.P.H.

Member, Board of Directors, National Council of Asian Pacific Islander Physicians

We are transitioning from “what” to “how”, to an action orientation, from listening and learning to doing. Collaboration in the prevention and care of diabetes is essential.

Michael Ybarra, M.D.

Senior Director of Alliance Development, Pharmaceutical Research and Manufacturers of America (PhRMA)

As emergency physician, I know the importance of prevention. There are several issues that require collaboration and work in coalition. First, we can work together to increase the diversity of participants in clinical trials. Clinical trials are the most expensive type of research but critically important in drug discovery. There is a lack of awareness and understanding about clinical trials; PhRMA worked with the National Minority Quality Forum to establish the *I'm In* campaign, which signs up providers to recruit more diverse participants into clinical trials.²⁸

Second, we can work together on increasing health insurance coverage for and access to prescription medication. There are now substantial patient out-of-pocket costs, especially during the first part of year with annual deductibles;

Finally, we can work together to improve medication adherence. There are ways to combine medication and lower side effects. The Prescriptions for a Healthy America program supports medication synchronization, medication therapy management from pharmacists, and care coordination, and provides adherence safe harbors for value-based payment programs.²⁹

LaShawn McIver, M.D., M.P.H.

Vice President of Public Policy and Strategic Alliances, American Diabetes Association

There are 29 million Americans living with diabetes, and 86 million with prediabetes. The American Diabetes Association (ADA) supports diabetes research, advocacy for government funding for diabetes, healthcare excellence (including publishing screening and treatment guidelines) and total wellness for individuals with diabetes. The ADA has state and local chapters throughout the U.S.

We know that diabetes has a disproportionate impact on racial and ethnic minority populations. The ADA has a Disparities Action Council and has been proud to work with the National Council of Asian Pacific Islander Physicians and the Asian American Native Hawaiian & Pacific Islander Diabetes Coalition and support the Screen at 23 campaign.

²⁸ <https://www.joinimin.org>

²⁹ <http://adhereforhealth.org>

Yun-Ping Zhou, M.D., Ph.D.
Director, Scientific Affairs, Merck

The Merck Foundation supports work on reducing disparities in diabetes as our health systems move towards more patient-centered care. In drug discovery, we have always wanted to meet patient needs but now we are beginning to ask patients themselves what their questions are. For example, patients have different perspectives than prescribing clinicians about the efficacy of drugs and side effects.

Jean Drummond, M.A., P.A.
President, HCD International

Collaboration is required among physicians, patients, and communities. The Medicare Access and Children's Health Insurance Reauthorization Act (MACRA) created the Quality Payment Program (QPP) in Medicare, with a choice of using either a Merit-Based Incentive Payment System (MIPS) or Alternative Payment Models (APMs) to continue moving away from fee-for-service payment.³⁰ This change is not just in Medicare payment since other payers are likely to follow. The QPP will begin in 2019, based on quality performance data beginning in 2017.

HCD International is part of CMS' Transforming Clinical Practice Initiative,³¹ partnering with the National Council of Asian Pacific Islander Physicians, National Medical Association, and National Hispanic Medical Association. We provide free training and education to physicians and other clinicians about clinical practice improvement, which will be more essential under the implementation of MACRA.

Randall N. Hyer, M.D., Ph.D., M.P.H.
Vice President, Medical Affairs, Dynavax

Individuals with diabetes are twice more likely to develop Hep B (through shared needles, glucometers) but only 29% have been vaccinated against Hep B.

Alvin Cheung, Pharm.D., M.H.S.A.
President, California Northstate University

An article in *Diabetes Care* in 2001 reported 11 million cases of diabetes diagnosed in the U.S. and projected 29 million cases by 2050;³² unfortunately, we already have exceeded those 29 million cases today in 2016. Looking in the mirror is not the best way to diagnose diabetes. Our health systems need to reward preventive care rather than pay for acute care. We need population health strategies that start as early as prenatal care, with parents before a child is born. We can work in schools through college since type 2 onset is most likely during college. And we can intervene in workplaces. We can even work in assisted living facilities since it is never too late to improve quality of life.

³⁰ <https://qpp.cms.gov>

³¹ <https://innovation.cms.gov/initiatives/Transforming-Clinical-Practices/>

³² Boyle JP, Honeycutt AA, Narayan KM, Hoerger TJ, Geiss LS, Chen H, Thompson TJ. Projection of diabetes burden through 2015: Impact of changing demography and disease prevalence in the U.S. *Diabetes Care*. 2001;24(11):1936-1940

Debra Nixon, Ph.D., M.H.S.A., BSN
Corporate Advisor, Health Services Advisory Group

The Health Services Advisory Group (HSAG)³³ is one of 14 Quality Improvement Organizations (QIOs) that have 5-year contracts with the Centers for Medicare and Medicaid Services (CMS) to support quality improvement in Medicare. HSAG works in California, Arizona, Ohio, Florida, and the U.S. Virgin Islands.

One of our contractual tasks is to reduce disparities in diabetes care by increasing the adoption and implementation of diabetes self-management programs, for example Stanford Medicine Patient Education Research Center's Diabetes Self-Management Program,³⁴ Scripps Health' Project Dulce,³⁵ University of Illinois at Chicago Midwest Latino Health Research, Training, and Policy Center's Diabetes Self-Management Education Program (DEEP)³⁶). We monitor pre- and post-activation measures, using clinical measures from electronic health records. It is challenging to recruit and engage patients and communities so we are also interested in research and innovative approaches. To date, HSAG has graduated over 2400 qualified beneficiaries in California from one of the three CMS approved programs listed above.

Comment: We know that patients with Type 2 diabetes don't like medications, but don't communicate well with their doctors and often don't participate in research. For example, Melissa Bender, RN, PhD, from the University of California San Francisco is conducting research on community-based participatory weight loss lifestyle interventions among Filipinos using mobile technology (mobile apps, smartphones, tablets, internet, social media) that are culturally adapted to improve relevancy for the target population.³⁷

Comment: The Japanese American Citizens League has worked with Joslin on studying alternates to salt in Japanese American diets, including Shio Koji (salted rice malt)

Comment: Chinese American patients are suspicious of Western medicines; do we know the long-term effects of diabetes medication?

Comment: FDA has begun asking about clinical endpoints other than a1C; we need to work more with pharmacists to educate patients

Comment: Pharmaceutical companies already spend \$58 billion on research and development but we need more real-world evidence, especially clinical data from electronic health records

Comment: Half of the providers in California are in solo and small group practices, especially minority physicians; our patients are not part of large data sets; women used to not be well-represented in clinical trials, but there is still under-representation of Asian Americans and Pacific Islanders

Comment: In FDA data, 90-95% of "Asians" participating in clinical trials lived in Asia. FDA doesn't distinguish the countries of residence of participants in clinical trials; and most pharmaceutical companies are global companies who are seeking global applications.

³³ <https://www.hsag.com>

³⁴ <http://patienteducation.stanford.edu/programs/diabeteseng.html>

³⁵ https://www.scripps.org/services/metabolic-conditions_diabetes/project-dulce

³⁶ <https://mwlatino.uic.edu/deep-program/>

³⁷ <http://profiles.ucsf.edu/melinda.bender>

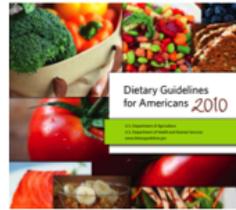
Chris Cifelli, Ph.D.

Vice President, Nutrition Research, National Dairy Council

There is evidence that eating dairy products is associated with lower risk for type 2 diabetes and other diseases. However, Asian Americans often have lactose intolerance (up to 50% prevalence) and are less likely to eat dairy products. There are some dairy products (cheeses, cottage cheese, and yogurt) that are well tolerated by those with lactose intolerance, enabling them to obtain the nutrients and health benefits associated with dairy intake.

Food choices and diet patterns are related to type 2 diabetes risk

- Nutrition and exercise are important for diabetes management
- 2010 Dietary Guidelines for Americans:
 - "Moderate evidence also indicates that intake of milk and milk products is associated with a **reduced risk of cardiovascular disease and type 2 diabetes** and with lower blood pressure in adults"



U.S. Department of Agriculture and U.S. Department of Health and Human Services. Dietary Guidelines for Americans, 2010. 1st Edition. Washington, DC: U.S. Government Printing Office, December 2010.

NationalDairyCouncil.org | @NIDairyCouncil | **NDC** | 10
NATIONAL DAIRY COUNCIL

Table 15

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NEW RESEARCH ON DIABETES AMONG ASIAN AMERICANS, NATIVE HAWAIIANS, AND PACIFIC ISLANDERS

Judith Fradkin, M.D., Ph.D.

Director, Division of Diabetes and Endocrinology, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health

Data from the 2011-2012 National Health and Nutrition Examination Survey reports that Asian Americans had the highest rate of undiagnosed diabetes. Is there a higher risk for diabetes among Asian Americans at younger ages, for example, ages 20-44? The current U.S. Preventive Services Task Force recommendation is to screen individuals age 40 and older if they are obese or overweight.

Among the current research being funded by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) are projects examining stress and lifestyle interventions for diabetes among immigrant Chinese Americans, smartphone and social media interventions for diabetes among Filipino Americans, and identifying diabetes prevalence among Asian Americans, Native Hawaiians, and Pacific Islanders through electronic health records (being conducted by Kaiser Permanente Health Plan in Hawaii).

There currently are a large number of multi-center clinical research trials being conducted that include Asian American participants. For example, 4% of the participants (n=142) in the Diabetes Prevention Program Outcomes Study (n=3,234) are Asian American.³⁸ Similar to other racial and ethnic groups, among the Asian Americans, lifestyle changes are more effective than metformin in reducing the incidence of diabetes (although metformin also is effective).

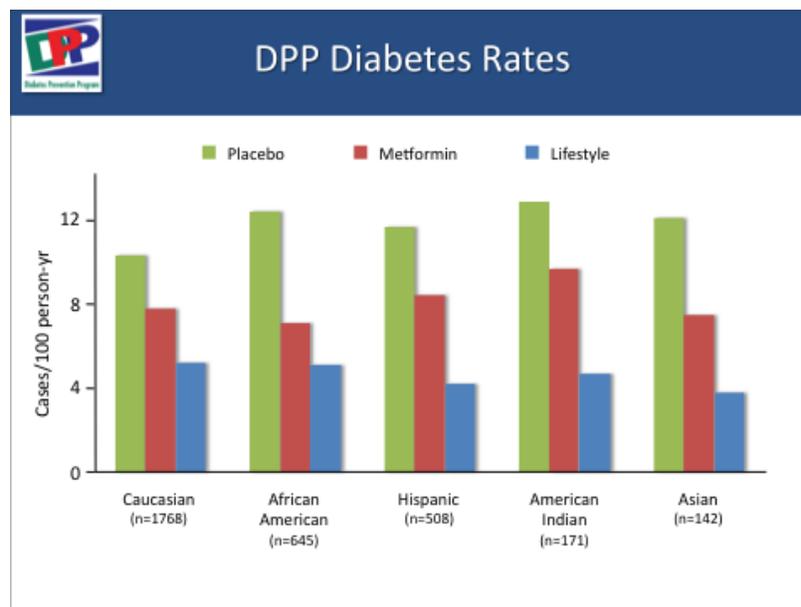


Table 16

³⁸ <https://dppos.bsc.gwu.edu>

Another study, the D2d study, is evaluating the preventative effect of 4,000 units of vitamin D daily, compared to a placebo, among individuals with prediabetes.³⁹ So far, there are 5.5% Asian American participants in the study (goal of n=2,500), with recruitment continuing. We know that individuals with lactose intolerance, including many Asian Americans, will consume less vitamin D in their diets, so it will be important to determine effects on Asian Americans.

The Centers for Disease Control and Prevention and NIDDK are conducting the SEARCH for Diabetes in Youth Study on diabetes among youth ages 10-19, with over 20,000 participants from Washington, California, Colorado, Ohio, and South Carolina. Asian American youth with type 2 diabetes have some of the highest rates (36%) of poorly controlled diabetes (a1c \geq 9.5).

The Accelerating Medicines Partnership is public-private partnership among government, universities, industry, and non-profit organizations to facilitate identification of new targets for diagnosis and therapy in selected disease areas, including type 2 diabetes, Alzheimer disease, autoimmune disorders, lupus, and rheumatoid arthritis.⁴⁰ There already has been published literature on genetic variants based on ancestry related to diabetes among Samoan, Mexican, and Chinese populations. The Partnership has T2D knowledge portal to explore relationships between genetic risk variants and diabetes-associated traits across major ancestry groups.⁴¹

There are several studies currently in the recruitment phase. These are opportunities to collect additional data on Asian Americans, Native Hawaiians, and Pacific Islanders. The Glycemia Reduction Approaches in Diabetes: A Comparative Effectiveness Study (GRADE) is comparing the combination of metformin with one of 4 additional drug classes (glimepiride, sitagliptin, liraglutide, or glargine) among young individuals (age 30 and younger) with relatively new-onset of type 2 diabetes, to evaluate glycemic control and side effects over up to a 7 year study period.⁴² 45 clinical sites are recruiting up to 5,000 participants for the study.

The Precision Medicine Initiative launched in 2015 includes a focus on cancer and diabetes.⁴³ The goal of the initiative is to recruit at least one million Americans to participate in this national longitudinal cohort. The initiative will have access to data on these participants through their electronic health records, periodic collection of biospecimens, and periodic surveys.

The TrialNet Pathway to Prevention (P2P) is conducting research on family members (parent, sibling, child, grandchild, cousin, uncle/aunt, nephew/niece) of individuals with type 1 diabetes.⁴⁴

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³⁹ <http://www.d2dstudy.org>

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⁴¹ <http://www.type2diabetesgenetics.org/>

⁴² <https://portal.bsc.gwu.edu/web/grade>

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⁴⁴ www.diabetestrialnet.org

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Maria Rosario (Happy) Araneta, Ph.D., M.P.H.

**Professor of Epidemiology, University of California San Diego School of Medicine
Member, Advisory Council, National Institute of Minority Health and Health Disparities,
National Institutes of Health**

The mission of the National Institute on Minority Health and Health Disparities (NIMHD) at the National Institutes of Health is to lead scientific research to improve minority health and reduce health disparities. To accomplish its mission, NIMHD plans, coordinates, reviews, and evaluates NIH minority health and health disparities research and activities; conducts and supports research in minority health and health disparities; promotes and supports the training of a diverse research workforce; translates and disseminates research information; and fosters innovative collaborations and partnerships.

NIMHD has an advisory council of 14 members;⁴⁵ currently, Dr. Araneta is the only Asian American on the Council (Dr. Marjorie Mau was a former member). The NIMHD Director is Dr. Eliseo Perez-Stable, who was the Chief, Division of General Internal Medicine, at the University of California, San Francisco. Fiscal Year 2016 budget for NIMHD is \$282 million compared to NIDDK budget of \$1.9 billion.

In 2016, NIMHD awarded 24 grants focused on Asian Americans, Native Hawaiians, and Pacific Islanders (Chamorro, Chinese, Filipino, Korean, Native Hawaiian, Samoan, South Asian, and Vietnamese) and 5 grants that included AANHPIs among multiple populations, totaling \$14.3 million to address disparities in diabetes, liver cancer, Hepatitis B, obesity, nutrition, cardiovascular disease and other conditions. Seven grants totaling \$5.2 million were specifically focused on AANHPIs and diabetes. In addition, there are currently two U24 research capacity building grants for researchers in Guam and American Samoa. NIDDK awarded \$3.2 million in grants related to AANHPIs and diabetes, with 5 grants focused on U.S. populations and 3 grants that include populations in India.

NIMHD will continue to develop and support research that examines etiology (what existing models explain the causes, determinants, and influences of health and life course trajectories that result in health disparities?), methods (which current methods have proven best for

⁴⁵ <https://www.nimhd.nih.gov/about/advisory-council/>

studying health disparities, their drivers, causes, and solutions?), and interventions (what research, practice, and policy interventions have shown the greatest promise to reduce and ultimately eliminate health disparities?).

Marjorie K. Mau, M.D., M.S., M.A.C.P.

Director, Center for Native and Pacific Health Disparities Research, John A. Burns School of Medicine, University of Hawaii at Manoa

Professor, Department of Native Hawaiian Health, John A. Burns School of Medicine, University of Hawaii at Manoa

According to 2010 Census, there were 1.2 million Native Hawaiians and Pacific Islanders in the U.S., with over half living in Hawaii and California. Native Hawaiians and Pacific Islanders have higher rates of diabetes, heart disease, hypertension, and obesity, with diabetes the strongest risk factor for heart disease and kidney failure. The rate of diabetes is 20% among Native Hawaiians over age 30, and the rate of pre-diabetes is 15%.

There is evidence of effective interventions, including the Kulia Ola Kino Maika'i diabetes education program, Partners in Care program for type 2 diabetes, PILI 'Ohana Project, Pulama Pau'ole I ka Mimiko telemedicine pilot , and Hanapu shared decision making project. There also have been community level interventions such as the Kokua Kalihi Valley Ho'oulu 'Aina community park, Hui Malama Ola Na O'iwi community garden, and the Waianae Coast Comprehensive Health Center Native Hawaiian Traditional Healing Center.⁴⁶



However, the search for understanding the mechanism underlying increased rates of diabetes, obesity, and metabolic disease in Native Hawaiians and Pacific Islanders remains incomplete (See Table 17, next page). Sustained research on Native Hawaiian and Pacific Islander diabetes disparities will require 1) a stable and diverse research workforce, including Native Hawaiians and Pacific Islanders, 2) engaged and involved Native Hawaiian and Pacific Islander communities who are acknowledged and accountable, 3) funding that is accessible and competitive, and research being done where Native Hawaiians and Pacific Islanders live, work, and play.

⁴⁶ <http://www.wcchc.com/Healing>

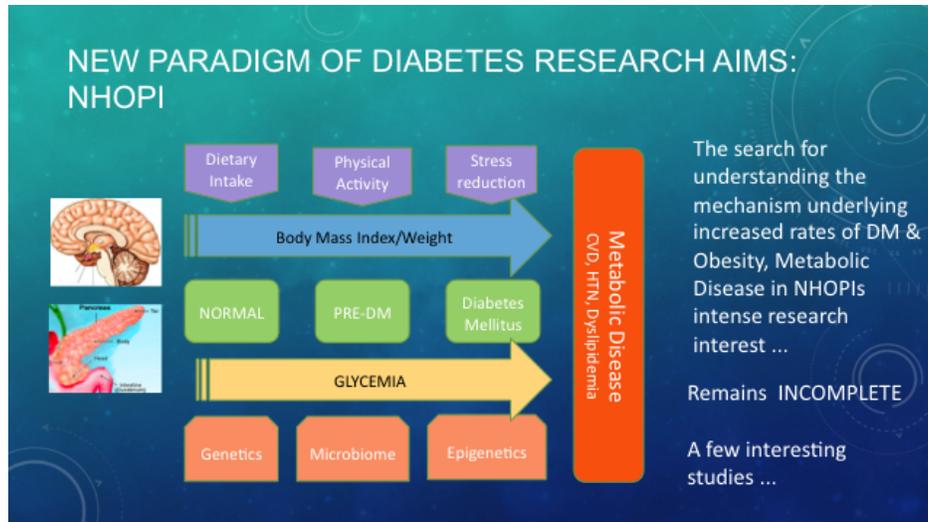


Table 17

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William C. Hsu, M.D.

Medical Director, Asian Clinic and Vice President, International Programs, Joslin Diabetes Center

There are currently 29 million cases of diabetes in the U.S. We know that there are potentially millions more cases, with many cases currently undiagnosed. From a health workforce perspective, there are only 3,000 endocrinologists and 1,500 certified diabetes educators to take care of these millions of patients. We also know that the healthcare delivery model of office-based visits to doctor for medication is becoming antiquated. We already have 12 classes of diabetes medications, while diabetes education programs are under-utilized, with participation by only 5% of patients on Medicare and less than 7% of patients with private health insurance who are newly diagnosed with diabetes participate in diabetes self-management programs. So what interventions are there beyond prescribing drugs? We have learned from Native Hawaiian and Pacific Islander communities how to develop and implement effective community-based interventions. We have to think outside the box, and outside the doctor's office.

There is the recent example of Pokemon Go; is it just a game or is it a physical activity app? It has increased physical activity among its users with no recommendations, no incentives, no penalties, and no costs. 100 million users downloaded Pokemon Go.

The University of Maryland Mobile Diabetes Intervention Study provided automated, real-time feedback and coaching through an app and achieved a 1.9% reduction in a1c, compared to 0.7% in the control group after 12 months. Another study reported that remote support for weight loss was equally effective to in-person support. But there has been little published on

digital health interventions among Asian Americans, except for one intervention to lower blood pressure among Korean Americans.

Joslin is partnering with the Massachusetts Institute of Technology on the Reimagining Diabetes Care project, using a cognitive apprenticeship approach for insulin titration through shared decision making, using both a smartphone app and internet portal, where the “master” demonstrates, the “apprentice” emulates, and the master remains as coach. While the technology itself does not result in behavior change, the feeling of being supported and real-time feedback seems to. It did take some older patients longer to adapt to the technology. We achieved an average a1c reduction of 3.2 after 3 months, and large increases in satisfaction and in the sense of patient empowerment. Clinicians also spent less average time with patients.

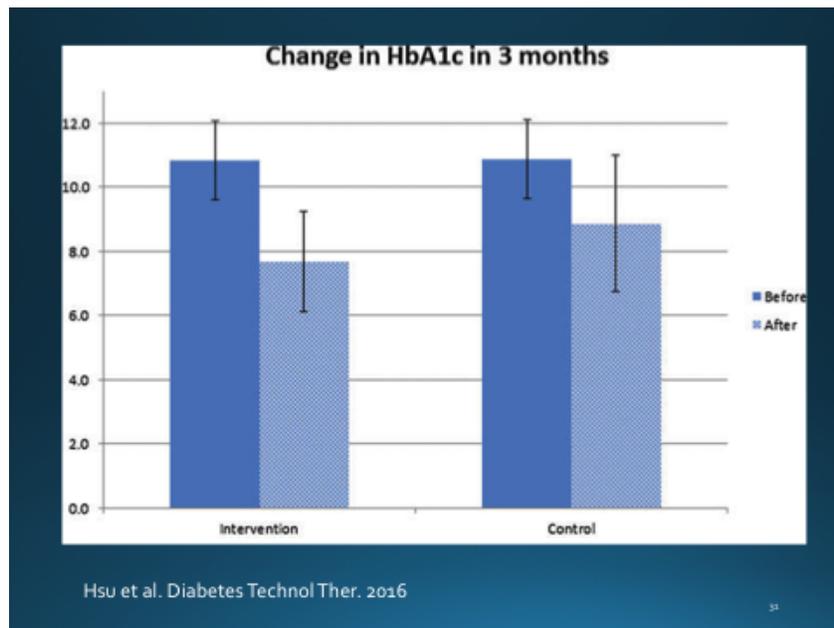


Table 18

A 2015 meta-analysis of diabetes telemedicine and digital health interventions showed mixed results from these interventions. We know from behavioral theory that patients are motivated to change, but find it challenging to sustain the changes. Digital health interventions maintain the daily and frequent connection that could help sustain behavior changes. So what is the role for providers? Should providers resist using these digital health technologies or collaborate and embrace them?

There is great relevance for Asian Americans, who have high utilization of technologies. However, there may be linguistic barriers, and less technology use among first generation immigrants and older adults.

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George King, M.D.
Chief Scientific Officer, Joslin Diabetes Center
Professor of Medicine, Harvard Medical School

We are seeing that research on diabetes among Asian Americans, Native Hawaiians, and Pacific Islanders may have implications for all populations, for example, the genetics study among Samoans. The causes of diabetes are complex, involving both one's genes and one's environment.

Causes of Type 2 Diabetes is Very Complex Involving Both Genes and the Environment

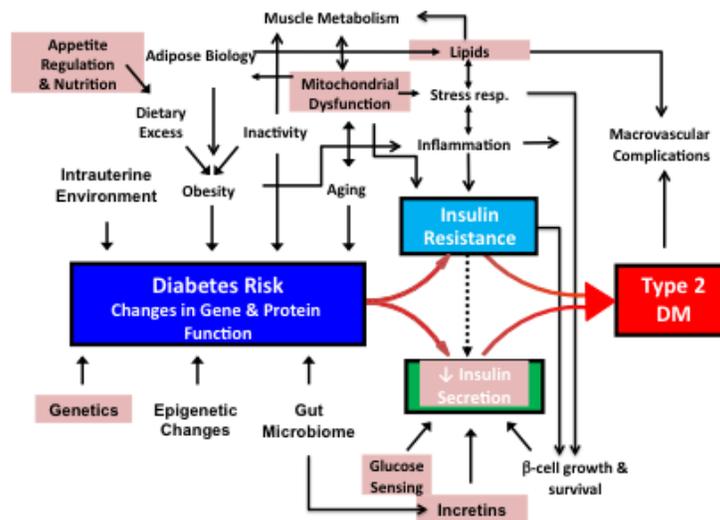


Table 19

In the SEARCH study, while 85% of the White youth with type 1 diabetes have autoimmune antibodies, only 30% of the Chinese American youth had these antibodies. As we are understanding heterogeneity among type 1 diabetes, what can we learn from this difference? We need more research to characterize the genotype, autoimmune markers, insulin sensitivity, beta cell function, pathologies, and epidemiology of type 1 diabetes among various Asian American, Native Hawaiian, and Pacific Islander populations.

There are other emerging research questions. Joslin is conducting research using insulin/glucose clamps, looking at insulin sensitivity, or the glucose disposal rate. We are looking for biomarkers for insulin resistance that would explain differences among populations, and want to research these differences based on BMI, levels of brown fat, and types of gut microbiome.

In addition, there is some evidence of racial and ethnic disparities in complications from diabetes (See Table 20). There needs to be more research about the association of diabetes with cancer, and with an increasingly aging population with diabetes, cognitive dysfunction such as Alzheimer's. What is the relationship of insulin sensitivity and glucose control to these complications?

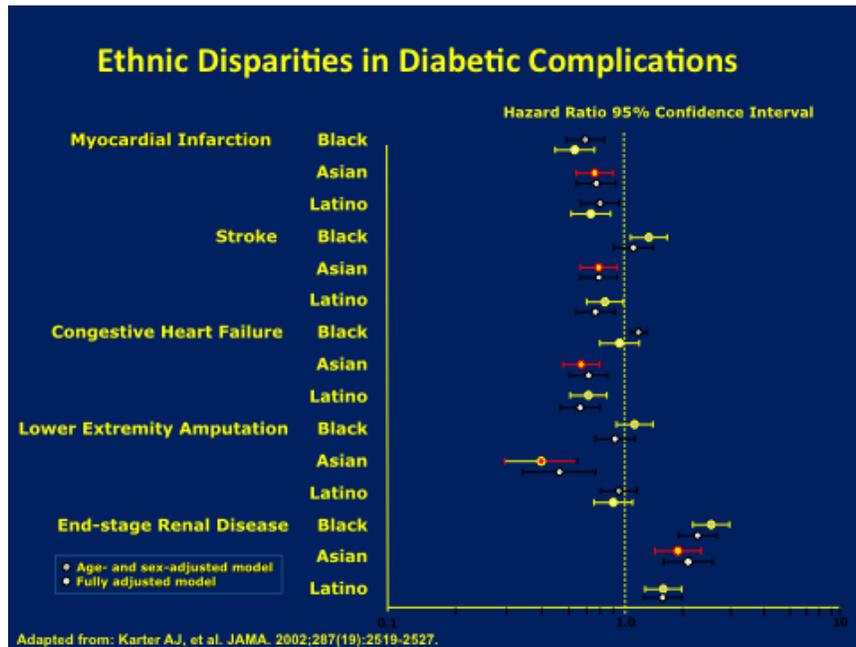


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**RECOMMENDATIONS FROM THE 2016 AANHPI
DIABETES COALITION CONFERENCE**

RESEARCH PRIORITIES FOR ASIAN AMERICANS

Facilitator: Jude McDivitt, Ph.D.

Report Back: William C. Hsu, M.D.

Increase understanding about diabetes among Asian Americans

- Continue to collect and analyze dis-aggregated data about Asian Americans
- Support recruitment and inclusion of Asian Americans in NIH studies
- Combine data at the population and community level
- Increase communication about and coordination of regional efforts on diabetes research among Asian Americans
- How can we interest younger clinical researchers in this work (e.g., even starting in high school)? they may be willing to work on local research to help build the knowledge base

Increase understanding of differences in pathophysiology of diabetes among Asian Americans

- Need to go beyond screening to clinical effectiveness
- Increase understanding of different adiposity, and interaction between fat and insulin
- What are the roles of different kinds of adipose tissue in different organs and different kinds of fat (e.g., brown fat) in diabetes in Asian Americans compared to other groups? How do these affect response to different types of drugs?
- Why do Asian Americans have excess visceral adipose tissue, and does this require different interventions than weight loss?
- What is the relationship between weight and muscle mass?
- What is the relationship between gut health (bacteria), body inflammation, and insulin resistance in Asian Americans?
- How does Westernization affect gut microbiome and diabetes? Is it because people eat more food? Different food?
- Examine nonalcoholic liver disease in Asian Americans; increase understanding of the role of the liver
- What is the relationship between Hep B vaccination and diabetes? Which comes first, Hep B or diabetes? (could use - Kaiser data to examine this? data from NHANES?)
- Is there a better marker for diabetes risk in Asian Americans than BMI? Are the additional markers that should be considered?
- Develop a registry of "unusual" groups that includes tissue, blood, and other samples for research



RESEARCH PRIORITIES FOR ASIAN AMERICANS (continued)

Conduct more research on maternal and childhood diabetes issues among Asian Americans

- Conduct more research on gestational diabetes among Asian Americans
- How can we learn more about type 1 diabetes among Asian American children? Can we oversample? (look at NIDDK database)
- What is the fetal origin of type 2 diabetes among Asian Americans, especially in situations of nutritional deficiency?
- Conduct more research on epigenetics of childhood obesity among Asian Americans
- How can we address early prevention of diabetes in Asian American children and families?
- Would an in-school program for all students (not singling out children at high risk) be able to prevent type 2 diabetes in children?



RESEARCH PRIORITIES FOR NATIVE HAWAIIANS AND PACIFIC ISLANDERS

Add a Facilitator: Raynald Samoa, M.D.

Report Back: Joseph Keawe'aimoku Kaholokula, Ph.D.

Support research workforce development

- Grow our own: need more Native Hawaiian and Pacific Islander PhDs and MD researchers/scientists (but context of shortages of all health professionals from our communities)
- Need loan repayment, training, other support
- Need researchers who are culturally competent, understand Native Hawaiian and Pacific Islander issues
- Need more specific funding for research about Native Hawaiians and Pacific Islanders
- Share questionnaires from studies; create repository of measures

Form committee of scientists to develop proposals to NIH, PCORI, etc.

- Develop research proposals on prevention and multi-disciplinary, solution-oriented, interventions using disaggregated data about Native Hawaiians and Pacific Islanders
- Use community-engaged research methods and community cultural wisdom; share data with community
- Identify risk factors for specific Native Hawaiian and Pacific Islander groups
- Include genetics and epigenetics research
- Address social/cultural/economic issues
- Use appropriate theoretical concepts (culture is not a risk factor; culture is a survival/protective factor; cultural conflict creates barriers)
- What does health mean for each community?
- Role of racism, acculturation, culture
- Identify age-specific, gender-specific strategies
- Need cohort and longitudinal studies
- Are there ecological/geographic comparisons? (islands vs. mainland?)
- Quantify environmental impacts (toxins, radiation, etc.)
- Develop technology to support real-time data: recognize lack of technology infrastructure in the Pacific (internet access, broadband), need technology infrastructure support, use social media



RESEARCH PRIORITIES FOR NATIVE HAWAIIANS AND PACIFIC ISLANDERS (continued)

Research diabetes prevention for Native Hawaiians and Pacific Islanders

- What diet and physical activity strategies work best for Native Hawaiians and Pacific Islanders?
- What lifestyle modifications work best for Native Hawaiians and Pacific Islanders?
- Are there existing data sets that can be used? Behavioral Risk Factor Surveillance System, Kaiser?

Research interventions for Native Hawaiians and Pacific Islanders with diabetes

- What is the body fat distribution among Native Hawaiians and Pacific Islanders with diabetes? What is the role of body fat in diabetes?
- Are there other relevant BMI cutpoints? A BMI of 30?
- Research cardiovascular disease/mortality



STRATEGIES FOR POLICY AND ADVOCACY TO ELIMINATE DISPARITIES

Facilitator: Ignatius Bau

Report Back: Ignatius Bau

Continue the work of the Screen at 23 campaign

- Need additional support for dissemination and education (largely done by volunteers so far)
 - Educate physician organizations about the Screen at 23 campaign
- Educate Asian American, Native Hawaiian, and Pacific Islander community members about the Screen at 23 campaign
- Get patient/family/provider testimonials to make Screen at 23 campaign more real and less abstract, e.g. someone screened at 23, diagnosed, and made changes to reverse or control their diabetes
- Engage and secure endorsements from state and local Asian American and Pacific Islander commissions and advisory bodies
- Continue to work with the Office of Minority Health and state offices of minority health on sharing information about the Screen at 23 campaign

Continue advocacy for disaggregated data for Asian Americans, Native Hawaiians, and Pacific Islanders

- Collect and analyze disaggregated demographic data in healthcare settings to monitor and better understand diagnoses and treatment of diabetes among Asian Americans, Native Hawaiians, and Pacific Islanders
- Pool data from EHRs for analysis
- Ensure that disaggregated data doesn't get collapsed
- In survey research, continue to use oversampling and population-based sampling to collect disaggregated data for Asian Americans, Native Hawaiians, and Pacific Islanders



STRATEGIES FOR POLICY AND ADVOCACY TO ELIMINATE DISPARITIES (continued)

Secure payment and funding for diabetes prevention programs for Asian Americans, Native Hawaiians, and Pacific Islanders

- Link diabetes prevention activities to quality improvement initiatives that seek to improve quality and reduce healthcare costs

Identify and support diabetes prevention programs that are culturally and linguistically appropriate and at appropriate health literacy levels for Asian Americans, Native Hawaiians, and Pacific Islanders

- Secure funding for diabetes prevention programs specifically focused on Asian Americans, Native Hawaiians, and Pacific Islanders

Support effective interventions for Asian Americans, Native Hawaiians, and Pacific Islanders with diabetes

- Develop more culturally and linguistically appropriate interventions for Asian Americans, Native Hawaiians, and Pacific Islanders with diabetes

- Leverage technology, including EHRs, e.g. clinical decision support to screen at 23



"Thanks to all the presenters and the participants. This is our call to action: let's make diabetes obsolete in our Asian American, Native Hawaiian, and Pacific Islander communities."

- Winston Wong, M.D., M.S.

Chairperson, Board of Directors, National Council of Asian Pacific Islander Physicians
Medical Director, Community Benefit and Health Disparities, Kaiser Permanente

2016 AANHPI Diabetes Coalition Conference





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August 26-27, 2016