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Problems With the Collection and Interpretation of Asian-American Health Data: Omission, Aggregation, and Extrapolation

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Abstract

Asian-American citizens are the fastest growing racial/ethnic group in the United States. Nevertheless, data on Asian American health are scarce, and many health disparities for this population remain unknown. Much of our knowledge of Asian American health has been determined by studies in which investigators have either grouped Asian-American subjects together or examined one subgroup alone (e.g., Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese). National health surveys that collect information on Asian-American race/ethnicity frequently omit this population in research reports. When national health data are reported for Asian-American subjects, it is often reported for the aggregated group. This aggregation may mask differences between Asian-American subgroups. When health data are reported by Asian American subgroup, it is generally reported for one subgroup alone. In the Ni-Hon-San study, investigators examined cardiovascular disease in Japanese men living in Japan (Nippon; Ni), Honolulu, Hawaii (Hon), and San Francisco, CA (San). The findings from this study are often incorrectly extrapolated to other Asian-American subgroups. Recommendations to correct the errors associated with omission, aggregation, and extrapolation include: oversampling of Asian Americans, collection and reporting of race/ethnicity data by Asian-American subgroup, and acknowledgement of significant heterogeneity among Asian American subgroups when interpreting data.

Keywords

Asian American; Data Collection; Research Design; Research Methodology

Introduction

Asian Americans are the fastest growing racial/ethnic group in the United States, with a population of more than 14 million as of 2010, and projected to grow to nearly 38 million in 2050 (1). The six largest Asian-American subgroups (Asian Indian, Chinese, Filipino, Japanese, Korean, and Vietnamese) comprise approximately 97% of the Asian American population (single race) (2). Asian Americans are also a heterogeneous group, with unique

socioeconomic profiles and language abilities (Table 1) (3). There is a wide spectrum of education, household income, and language ability with Asian Indians in the higher and Koreans and Vietnamese in the lower range of these standard sociodemographic indicators. However, Asian-American subgroups are frequently combined into a single Asian category, masking heterogeneity among the subgroups. Data on Asian American health, particularly for the Asian subgroups, are scarce, and many health disparities for this population remain unknown.

Other researchers and advocacy groups have highlighted the importance of collecting and reporting data by Asian-American subgroups (4–7). The Federal Government has recently taken steps to improve the collection of Asian American health data. In 2009, President Obama signed Executive Order 13515, reinstating President Clinton's Executive Order 13125 that established the President's Advisory Commission, the Federal Interagency Working Group, and the Office of the White House Initiative to improve the health, education, and economic status of the Asian-American and Pacific Islander community (8). President Obama highlighted the need to disaggregate data by Asian American subgroup (8).

As of 2010, Section 4302 of the Affordable Care Act requires that all health surveys sponsored by the Department of Health and Human Services (HHS), such as the National Health Interview Survey (NHIS), the National Medical Expenditure Panel Survey, and the National Immunization Survey, include standardized information on race, ethnicity, sex, primary language, and disability status (Table 2) (9). Disaggregation is only the first step in providing meaningful health data for this group. We must also seek to adequately sample Asian subgroups to provide statistically stable estimates across groups and to offer surveys in appropriate languages and through translators to ensure adequate representation of limited English proficiency and low health literacy populations.

Previous research and recent federal policy changes address the important issue of disaggregation of Asian-American health data by subgroup. However, few papers have examined the errors in interpretation of Asian-American health data, which are ongoing in the literature. This article will address the implications of recent federal policy changes data collection and reporting, as well as identify methods to improve the collection and interpretation of Asian-American health data, focusing on omission, aggregation, and extrapolation.

History of Data Collection for Asian Americans

A brief history of data collection for Asian Americans will provide context for our discussion of the problems with the collection and interpretation of Asian American health data. The U.S. Census population data are extremely important for providing denominator data for disease incidence and prevalence statistics by race/ethnicity. The U.S. Census Bureau has collected data on race since the first U.S. decennial census in 1790 (10). Race data for Asian Americans were first collected in 1860 for Chinese, in 1870 for Japanese, and other Asian “races” (Filipino, Hindu, and Korean) were added starting in 1910 (10). The U.S. Census has never used race as a purely biological or genetic classification but rather to reflect common social usage. Although demographic information has been collected on

Asian-American subgroups for quite some time, the U.S. Census often reports on population characteristics for Asian Americans as a group. In addition, it was not until 2000 that the Census separated Asians and Pacific Islanders in data reports per the Office of Management and Budget directive issued in 1997 (11). Although the separation of Asian from Pacific Islanders is an improvement, differences among diverse Asian-American subgroups are often masked when data are reported for these subgroups as an aggregated group.

National disease and death registries are an important source of information for high-quality monitoring of population health and health disparities. Few studies have examined leading causes of mortality among Asian-American subgroups (12, 13) because few states collect Asian subgroup information on death records (14). Most studies of mortality in Asian-American subgroups have been conducted using California mortality records because of the high concentration of Asian Americans in the geographic region, and availability of Asian subgroup information on this state's death records. Before 2003, only seven states required the reporting of specific Asian racial/ethnic subgroups (California, Hawaii, Illinois, New Jersey, New York, Texas, and Washington) (15). In 2003, the Secretary of the HHS approved the separation of Asian race category from the Pacific Islander race category and added the following Asian subcategories on U.S. death and birth certificates and reports: Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, other Asian (specify) (15). Although these forms now allow for the collection of Asian American subgroup data, it is important that medical examiners and the coroner understand the importance of collecting this data. Coroner misclassification of race/ethnicity on death certificates is known to be greater in Asian Americans, with 13% of deaths misclassified, compared with 7% of deaths for Hispanic, and <1% of deaths for black and Non-Hispanic white (NHW) individuals (16).

The recent passage of the Affordable Care Act requires the Secretary of HHS to establish data collection standards for race, ethnicity, sex, primary language, and disability status. The HHS Standards Workgroup reviewed the Office of Management and Budget data collection standards and the Institute of Medicine report "Race, Ethnicity, and Language Collection: Standardization for Health Care Quality and Improvement" to inform their standards. The categories for HHS data standards for race and ethnicity are determined by the disaggregated Office of Management and Budget standard used in the American Community Survey and the 2000 and 2010 Decennial Census, which is ideal for reporting of data by Asian-American subgroup (Table 2). This policy applies to all population-based health surveys conducted or sponsored by HHS (17). In concordance with these standards, several goals were developed to improve the collection of data on Asian Americans, such as prioritizing Asian sample size in NHIS and enhancement of the quality of data collected within the Substance Abuse and Mental Health Services Administration's National Survey on Drug Use and Health (18).

Much of our understanding of racial/ethnic differences in the health of the U.S. population is derived from national health surveys, such as the NHIS and the National Health Examination and Nutrition Survey (NHANES). Although the U.S. Census Bureau collects race data by Asian-American subgroup, many national health surveys do not, classifying race only at the aggregated level of "Asian." Most major epidemiologic cohort studies for chronic disease have not included Asian Americans, such as the Framingham Heart Study

and the Cancer Prevention Study (19–23). Those cohort studies that have included Asian Americans have often focused on one Asian-American subgroup, such as the Ni-Hon-San study for cardiovascular disease (Japanese in different countries) (24), or have included only one Asian-American subgroup, such as the Multi-ethnic Cohort Study for cancer (Japanese Americans) (25). Table 3 provides an indicator of the quality of national data sources in terms of their ability to collect and report reliable data by Asian-American subgroup.

The methodology behind survey and cohort study design may result in great errors in both the collection and interpretation of health data. Omission of Asian Americans in health data collection leads to an absence of knowledge regarding the health risks for this population. Even worse, the absence of Asian-American data in health reports and publications may lead to the misinterpretation that these groups have lower risk of disease compared with other racial/ethnic groups. Although the reporting of Asian Americans as an aggregated group is an improvement over their omission, aggregation can also lead to important errors in interpretation. Asian Americans are a heterogeneous group, and reporting health data for the group may mask important differences between the subgroups. The few studies in which authors have disaggregated Asians have revealed greater coronary heart disease risk for Asian Indians and lower risk for Chinese compared with NHW subjects (26, 27).

Similarly, differences emerge among the subgroups for incident cancers (all), with the greatest risk found for Japanese and lowest risk found for Asian Indians, with even greater heterogeneity emerging when specific cancers are examined (14). When health data are reported by Asian-American subgroup, results are often extrapolated from one group to another. Lower risk of coronary heart disease in Chinese subjects has often been incorrectly interpreted as lower risk of coronary heart disease for all Asian-American groups (28). Omission, aggregation, and extrapolation of Asian-American health data undermine our understanding of health risks and disease prevalence for this population.

Omission of Asian-American Subjects

The omission of Asian-American subjects in health studies and surveys is one of the greatest problems in epidemiologic studies. Although the HHS data standards for race, ethnicity, and language greatly improve the collection of Asian -American health data, many national surveys like the Behavioral Risk Factor Surveillance Survey omit Asian Americans in the majority of their data reports and publications. Data from these comprehensive federal surveys of social and biological risk factors for disease are routinely used by researchers and policy makers to set the disparities agenda for the United States. Although data are collected for Asian Americans, it is often omitted in reports because of the small sample size for this group.

A recent study using NHANES data to determine prevalence and immunization rates for hepatitis B virus in the United States highlights the errors associated with omission of Asian Americans. The classification of Asian Americans as “other race” and the underrepresentation of Asian-American subjects in this study may lead to underestimation of the national prevalence of hepatitis B. Furthermore, this may undermine the elevated risks for Asian Americans, particularly for Chinese (29, 30). NHANES recently recognized this

sampling error, and began oversampling Asian Americans in 2011 (31). Although including Asian Americans in the sampling design is an improvement, it is unclear whether specific Asian-American subgroups will be oversampled.

In addition to undersampling of Asian Americans by subgroup, several national surveys use sampling methods that may omit limited English-proficient (LEP) or low-socioeconomic status Asian Americans. The U.S. Census Bureau is the only organization that consistently conducts surveys in a language other than English or Spanish (4). Many surveys omit those who are sampled but are not interviewed because of language limitations. Specific Asian-American subgroups have greater risk of being excluded as the result of LEP, including Chinese, Korean, and Vietnamese (Table 1), because up to one-half of these populations are LEP. In addition, most surveys use telephone-based random-digit dialing methods. These surveys generally sample from telephone landlines, missing the population who only has a cell phone. Individuals with cell phones are more likely to be younger, poor, and new immigrants, introducing sampling bias (32, 33).

Asian Americans are also frequently omitted in clinical trials, despite passage of the National Institutes of Health Revitalization Act in 1993, which led to guidelines on the inclusion of women and minorities in clinical trials funded by the agency (34–36). Difficulty recruiting Asian Americans and other racial/ethnic minorities has often been attributed to mistrust of researchers and experimentation, lack of information, language and cultural barriers, among other issues (37). In the past few years, pharmacogenomics studies and drug trials have shown that some Asian-American subgroups may respond differently to variety of drug treatments, including chemotherapy, anticoagulants/ antiplatelets, and anticonvulsants as the result of different prevalences of polymorphisms known to influence drug metabolism and transport, compared with other racial/ ethnic groups (38–42). Omission of Asian Americans from clinical trials, cohort studies, and health surveys greatly hinders our understanding of health risks and differences in drug efficacy for this population.

Aggregation of Asian-American Subgroups

When Asian Americans are included in health studies and surveys, their data are often reported for the aggregated group, which may mask differences among the subgroups, and, despite the Office of Management and Budget directive to separate Asian Americans from Pacific Islanders on race/ ethnicity collection (11), the authors of some studies continue to report data for Asian Americans and Pacific Islanders combined, masking marked heterogeneity between these two large groups. The new HHS data standards will improve the collection and reporting of Asian American health data. However, these standards only apply to public health surveys sponsored by HHS and there are still concerns with interpreting data that is reported in aggregate.

The NHIS has collected race/ethnicity by Asian-American subgroup since 1992 (43), and this data collection practice has increased the number of health research publications regarding Asian American subgroup health. However, many research papers using NHIS data continue to group Asian American subgroups together. In the 2009 NHIS report “Summary Health Statistics for U.S. Adults,” data were reported for aggregated Asian

Americans. According to this paper, Asian Americans have a lower prevalence of heart disease (44). However, epidemiologic studies have demonstrated a greater prevalence of coronary heart disease for Asian-Indian and lower prevalence for Chinese subjects compared with NHWs (25, 26). Similarly, differences emerge for other chronic diseases, such as diabetes, with markedly a greater prevalence for Asian-Indian and Filipino compared with NHW and other subgroups (45, 46).

Inadequate sampling of Asian-American subgroups leads to statistically unstable estimates, suggesting that differences in disease do not exist, when in fact larger, more adequate samples will reveal important differences. For instance, NHIS survey data did collect and report diabetes rates in Asian-American subgroups. However, sample sizes were too small (with large standard errors) (47). A larger study of Asian-American subgroups, using clinical data, did reveal that Asian-Indian and Filipino groups had greater rates of diabetes compared with other Asian subgroups (46). By ensuring adequate sample sizes across Asian American subgroups, researchers can avoid Type 2 error (stating there is no difference between groups, when in fact a difference does exist, i.e., failing to reject a false null hypothesis).

Findings from cancer studies are also subject to the errors associated with aggregation, and the National Cancer Institute's Surveillance, Epidemiology, and End Results Program frequently reports cancer rates for the combined group of Asian/Pacific Islander (14). Liver cancer is often cited as disproportionately affecting the Asian American and Pacific Islander community (48). However, the incidence and mortality rates of liver cancer differ markedly when Asian-American subgroups are examined separately, with greater rates shown for Vietnamese, Korean, and Chinese compared with other Asian subgroups and NHW (14). In addition, for Japanese subjects, rates of colorectal cancer are particularly high, exceeding those of NHWs and all other Asian subgroups (14). These differences are important to acknowledge in terms of developing targeted preventive and screening efforts to specific Asian-American subgroups.

It is clear from the small amounts of disaggregated health data available on Asian Americans in the United States that Asian Americans are heterogeneous and thus should not be aggregated in research analyses and reports. There are clear differences in rates of cardiovascular disease, cancer, and diabetes among Asian subgroups, and each Asian-American subgroup has distinct risk factor profiles. Subgroup level data collection will allow more appropriately tailored healthcare for these diverse populations.

Extrapolation of Findings for Asian Americans

Most of our understanding of Asian-American health is determined on the basis of studies in which the authors have grouped Asian Americans together or examined one subgroup alone. The findings from studies that have examined one subgroup are often inappropriately interpreted and extrapolated, with findings from one subgroup presumed to be applicable to all other subgroups. One of the earliest studies to examine cardiovascular disease in Asian Americans, the Ni-Hon-San study (24), tracked rates of cardiovascular disease in Japanese men living in Japan (Nippon-Ni), Honolulu, Hawaii (Hon), and San Francisco, CA (San)

since 1965. This landmark study demonstrated the importance of environmental factors in the development of cardiovascular disease by showing varying prevalences of cardiovascular disease for Japanese men depending on their location. This study showed that Japanese had much lower rates of heart disease than the NHW population in San Francisco and Hawaii. Many other reports and the media have extrapolated these findings to all Asian subgroups, with headlines stating “Asians have lower rates of heart disease” (49). These findings have been misinterpreted as lower risk of heart disease for all Asian subgroups, thus overlooking the known greater rates of heart disease for Asian Indians and Filipinos (26, 27).

Findings from drug trials have also been incorrectly extrapolated to all Asian American subgroups. The Food and Drug Administration (FDA) has included a statement on the label insert for rosuvastatin (Crestor) stating, “initiation of Crestor therapy with 5 mg once daily (instead of 10 mg) should be considered for Asian patients.” Pharmacokinetic studies have demonstrated an approximate 2-fold increase in median exposure to rosuvastatin in Japanese subjects when compared with white controls. The dosage recommendation was based on studies of Japanese, but these data on one Asian subgroup was subsequently inaccurately extrapolated to all Asians in FDA labeling (50, 51). Similar warnings, extrapolating findings from one Asian subgroup to all Asians, have been issued for other drugs, including warfarin, clopidogrel, and carbamazepine (40, 50, 52). The FDA warns that the risk of Stevens–Johnson syndrome or toxic epidermal necrolysis “in some Asian countries is estimated to be about ten times higher,” compared with white populations as the result of differences in prevalence of allelic variations (HLA-B*1502) affecting carbamazepine metabolism (50). Testing for HLA-B*1502 is recommended for Asian populations; however, there is great variation among the Asian subgroups with greater frequency of the allele seen in South Asians, including Indians, as well as Hong Kong Chinese, Taiwanese and Thai (8%–11%), than in North Asians, such as Beijing Chinese, Japanese, and Koreans (1%–2%) and compared to NHWs (0%–1%) (53, 54). These examples highlight the racial/ethnic differences among Asian-American subgroups, the importance of examining results for these subgroups separately, and the risk of extrapolating findings for one Asian subgroup to other subgroups, or to Asians as a whole.

Recommendations

The Healthy People 2010 initiative called for the reduction of racial and ethnic health disparities as a national health priority (55). However, because of the omission and aggregation of data, and extrapolation of findings, for Asian Americans, we do not yet even have a clear understanding of what health disparities exist for this population. Those studies that have examined Asian-American subgroups have often focused on one group alone, leading to incorrect extrapolation-inaccurately attributing findings from one subgroup to another subgroup or to all subgroups collectively. Certain national surveys, such as the U.S. Decennial Survey and the NHIS, do collect race/ethnicity at the subgroup level, and subsequently our knowledge of Asian-American subgroup health has improved and continues to confirm that there is marked heterogeneity among Asian-American subgroups. The recent development of the HHS data collection standards for race, ethnicity, and primary language will continue to improve our understanding of Asian-American health

collected from national surveys. However, there are many challenges involved in collecting granular race, ethnicity, and language for Asian Americans. Several efforts at the national, state, and community-based participatory research level can provide important lessons.

The California Health Interview Survey (CHIS) is a telephone survey conducted every other year, beginning in 2001, to examine public health and health access issues in California (56). The CHIS is a collaborative project of the University of California, Los Angeles Center for Health Policy Research, the California Department of Public Health, and the Department of Health Care Services. One of its major objectives is to provide statewide estimates for California's major racial and ethnic groups, as well as several Asian and Latino ethnic subgroups. To achieve the sample design objectives stated above, CHIS used a multistage sample design using one random-digit dialing sample that included landlines and one that included cellphones. For the first time, cell phone sample cases were eligible even if they had a landline to account for potentially unique characteristics of people with both types of telephones. To increase the precision of estimates for Koreans and Vietnamese, areas with relatively high concentrations of these groups were sampled at greater rates. In addition, to geographic targeting, surname lists were used to meet the target goals for Korean and Vietnamese. Interviews in all languages were administered using Westat's computer-assisted telephone interviewing system. In CHIS 2009, interviews were conducted in five languages: English, Spanish, Korean, Vietnamese, and Chinese (Cantonese and Mandarin dialects). The CHIS provides strategies for oversampling Asian American subgroups in order to provide representative, reliable estimates.

Community participatory-based research efforts can also provide valuable recommendations for data collection. Review of community participatory research in Asian Americans indicate that a partnership with a community organization is critical for involving Asian Americans in research (57). The BRFSS REACH 2010 is a key example of using community-based organizations to collect health data on Asian American subgroups (58). The National Latino and Asian American Study is a prime example of nonfederal survey study that collected adequate samples to study some Asian-American subgroups (Chinese, Filipino, and Vietnamese). The survey was administered in multiple languages (Cantonese, English, Mandarin, Spanish, Tagalog, and Vietnamese) and oversampled Chinese, Vietnamese, and Filipinos but also includes other Asian (e.g., Bangladeshi) and Pacific Islanders (e.g., Samoans) (59). The study used some similar sampling and survey administration techniques to CHIS, including targeted samples of geographic areas with greater than 5% residential density for individual national origin groups of interest and trained bilingual interviewers (59).

Electronic Health Records (EHR) may also be a novel way to study health and disease in Asian-American subgroups. The passage of the Health Information Technology for Economic and Clinical Health Act incentivizes all health care providers to have EHR by 2014 (60). HHS plans to target racial/ethnic minority communities for EHR adoption through partnerships with the National Health Information Technology Collaborative and the "HHS Health Information Technology Plan to End Health Disparities" (61). EHRs have already been used to successfully provide stable diabetes (46) and cardiovascular disease (26) estimates for Asian subgroups, with the advantage of larger sample sizes when

compared to self-report telephone surveys such as NHIS and CHIS. However, clinical organizations are not subject to the HHS reporting standards, and most still collect race ethnicity data using Office of Management and Budget classifications (which aggregate Asians) to report to state and federal agencies. Race/ethnicity collection according to the U.S. Census Standard and new HHS standards (which disaggregates Asians) has been successfully implemented in large health care organizations (62), and the accuracy of this data collection has been confirmed (63). EHR data, combined with disaggregated Asian subgroup data, may offer a novel cost effective solution to the study of Asian American subgroups.

Recommendations to improve the collection of and interpretation of Asian-American health data to reduce the errors associated with omission, aggregation, and extrapolation include (1) collection of race/ethnicity data by Asian-American subgroup, (2) oversampling of Asian Americans by subgroup, (3) reporting of data by separate Asian-American subgroups, and (4) acknowledgement of heterogeneity among Asian Americans when interpreting data.

Oversampling

- National surveys should oversample Asian Americans and ensure representation across the six largest subgroups of country of origin.
- Sampling should recognize the wide range of socioeconomic status and demographic characteristics among Asian American subgroups.

Collection and Reporting of Data by Subgroup

- Race information should always be collected for each individual Asian-American subgroup, including on EHRs.
- Self-reported race is the gold standard.
- Existing studies should be expanded to include at least the six largest Asian-American subgroups.
- Asian-American subgroups should be identified on death certificates, hospital discharge information, and population-based studies.
- Additional training should be provided for coroners on classification of race on death certificates to improve the currently high race misclassification rates in Asian American subgroups.
- Data should always be reported for each Asian American subgroup.

Acknowledgement of Heterogeneity

- Even if small sample sizes limit conclusions regarding subgroups, research publications should always report on the specific subgroups included in the larger Asian-American group and not extrapolate findings from one Asian subgroup to the whole Asian group.
- Asian Americans are an extremely heterogeneous group, comprised of subgroups with diverse cultures, languages, immigration histories, and sociodemographic

characteristics. This heterogeneity should always be acknowledged in the interpretation of findings.

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Selected Abbreviations and Acronyms

CHIS	California Health Interview Survey
EHR	Electronic Health Records
FDA	Food and Drug Administration
HHS	Department of Health and Human Services
LEP	limited English proficient
NHANES	National Health and Nutrition Examination Survey
NHIS	National Health Interview Survey
NHW	non-Hispanic white

Table 1
Demographic characteristics of Asian subgroups in the United States (3)

Subgroup	Total population (margin of error)	Foreign-born population (%)	Bachelor's degree or greater* (%)	Median household income (margin of error)	Speak English less than "very well" (64)
Asian Indian	2,495,998 (±40,554)	1,828,381 (73.3%)	1,174,852 (70.1%)	\$90,528 (±1,539)	419,161 (22.2%)
Chinese	3,077,783 (±42,257)	2,133,367 (69.3%)	1,119,349 (52.1%)	\$68,202 (±1,607)	1,156,236 (46.0%)
Filipino	2,425,697 (±36,981)	1,608,949 (66.3%)	837,167 (48.0%)	\$79,840 (±1,157)	352,437 (22.2%)
Japanese	710,063 (±18,966)	407,034 (57.3%)	265,778 (46.3%)	\$61,743 (±1,448)	84,658 (24.8%)
Korean	1,344,267 (±26,878)	977,262 (72.7%)	466,816 (49.8%)	\$53,887 (±2,431)	461,241 (46.1%)
Vietnamese	1,431,980 (±32,667)	984,626 (68.8%)	266,734 (27.8%)	\$55,667 (±1,302)	670,120 (54.8%)

* Based on the population >25 years of age.

Table 2
Health and human services data collection standards for race, ethnicity, and primary language (9)

Ethnicity data standard	Categories
Are you of Hispanic, Latino/a, or Spanish origin (One or more categories may be selected)	These categories roll-up to the Hispanic or Latino category of the Office of Management and Budget (OMB) standard
<ul style="list-style-type: none"> a. ___ No, not of Hispanic, Latino/a, or Spanish origin b. ___ Yes, Mexican, Mexican American, Chicano/a c. ___ Yes, Puerto Rican d. ___ Yes, Cuban e. ___ Yes, another Hispanic, Latino, or Spanish origin 	
Race data standard	Categories
What is your race? (One or more categories may be selected)	These categories are part of the current OMB standard
<ul style="list-style-type: none"> a. ___ White b. ___ Black or African American c. ___ American Indian or Alaska Native 	
<ul style="list-style-type: none"> d. ___ Asian Indian e. ___ Chinese f. ___ Filipino g. ___ Japanese h. ___ Korean i. ___ Vietnamese j. ___ Other Asian 	These categories roll-up to the Asian category of the OMB standard
<ul style="list-style-type: none"> k. ___ Native Hawaiian l. ___ Guamanian or Chamorro m. ___ Samoan n. ___ Other Pacific Islander 	These categories roll-up to the Native Hawaiian or Other Pacific Islander category of the OMB standard
Data standard for primary language	
How well do you speak English? (5 years old or older)	
<ul style="list-style-type: none"> a. ___ Very well b. ___ Well c. ___ Not well d. ___ Not at all 	

Table 3
Collection, analysis, and reporting of Asian-American health

Survey characteristics	Benchmarks	Opportunity for advancement
Classification of Asian subgroups	American Community Survey (ACS) BRFSS REACH 2010 California Health Interview Survey (CHIS) Current Population Survey (CPS) Decennial Census Early Childhood Longitudinal Study (ECLS) Medical Expenditure Panel Survey (MEPS) National Health and Examination Survey (NHANES) 2011 National Health Interview Survey (NHIS) National Household Survey on Drug Abuse (NHSDA) National Latino and Asian American Study (NLAAS) National Vital Statistics System	Behavioral Risk Factor Surveillance Survey (BRFSS) Medicare Current Beneficiary Survey (MCBS) The National Household Education Survey (NHES) National Immunization Survey (NIS) National Registry of Myocardial Infarction (NRFMI) National Survey of Family Growth (NSFG) Surveillance, Epidemiology and End Results (SEER) Survey of Income and Program Participation (SIPP)
Offered in Asian Languages	ACS BRFSS REACH 2010 CHIS CPS Decennial Census ECLS NHANES 2011 NHIS NLAAS	BRFSS MEPS NHES NHSDA NIS NSFG SIPP
Sampling methodology and adequate sample size of Asian-American subgroups	ACS CHIS Decennial Census ECLS National Vital Statistics System	BRFSS BRFSS REACH 2010 CPS MCBS MEPS NHANES NHES NHIS NHSDA NIS NLAAS NRFMI NSFG SEER SIPP