



# Understanding the Health Needs of Diverse Groups of Asian and Native Hawaiian or Other Pacific Islander Medicare Beneficiaries

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## Introduction

Asians and Native Hawaiians or Other Pacific Islanders (NHOPI) are two distinct and growing populations in the United States. Among those aged 65 and over in 2050, 7.1 percent of the population are projected to be Asian and 0.3 percent are projected to be NHOPI.<sup>1</sup> Given the rich diversity of these groups and their expected growth, it will become important to understand the health needs of these aging populations.

Identifying appropriate targets to improve health care quality and reduce health disparities requires sufficient data to permit analyses of detailed racial groups. In 2011, the U.S. Department of Health and Human Services (HHS) adopted data collection standards that included additional granularity for Asian and NHOPI racial groups on population surveys. These standards strengthen federal data collections by providing guidance on collecting additional demographic data to improve our understanding of healthcare disparities. To understand the health needs of diverse Asian and NHOPI groups it will become increasingly important to have nationally representative data sources that provide granular data for each of these distinct groups.

Since 2013, the Centers for Medicare & Medicaid Services (CMS) Medicare Health Outcomes Survey (HOS) has been collecting data on the health status of detailed Asian and NHOPI groups who are enrolled in Medicare Advantage and Medicare Advantage Prescription Drug Plans. This brief presents findings from the 2013-2015 HOS Baseline Cohorts 16, 17, and 18 for Asian and NHOPI beneficiaries. The HOS is a longitudinal survey that measures Medicare Advantage Organization (MAO) plans' success in maintaining or improving beneficiaries' physical and mental health.<sup>2</sup> The three cross-sectional cohorts included Medicare beneficiaries enrolled

## Key Findings:

- Among Medicare beneficiaries, the rate of positive depression screen was more than two times greater for both Other Asians (25.2%) compared to Japanese (9.6%) and for Samoans (42.3%) compared to Native Hawaiians (19.6%).
- Nearly half of NHOPI (49.4%) and 33.7% of Asian beneficiaries reported having fair or poor health. Significant differences were observed across NHOPI groups ranging from 36.9% for Native Hawaiians to 55.7% for Other Pacific Islanders. Also, significant differences were observed across Asian groups, ranging from 24.5% for Japanese to 43.9% for Vietnamese beneficiaries.
- The rate of poor sleep quality was two-fold higher for Other Asians (26%) than Filipinos (13.2%) and nearly two-fold higher for Other Pacific Islanders (33.6%) than Native Hawaiians (16.3%).
- Among Medicare beneficiaries, the prevalence of obesity was four times greater for NHOPI (41.2%) than among Asians (10%). Among NHOPI beneficiaries, more than 7 out of 10 Samoans were classified as obese.

Data source: The 2013-2015 Medicare Health Outcomes Survey (HOS) Baseline Cohorts 16, 17, and 18

in MAOs who are age 65 and over, as well as disabled beneficiaries under 65 years old. Asian beneficiaries (n= 23,721) included Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Other Asian, and Multi-Asian. NHOPI beneficiaries (n= 2,849) included Native Hawaiian, Guamanian or Chamorro, Samoan, Other Pacific Islander, and Multi-Pacific Islander. Health status results presented in this brief include self-rated general health status, days with activity limitations, rates of depression, prevalence of obesity, and two measures of sleep health. Additional research findings on diverse Asian and NHOPI beneficiaries can be found in the companion [national report available on the CMS Office of Minority Health website](#).

**Keywords:** Health Disparities, Health Outcomes Survey, Medicare, Health Status, Detailed groups, Asian, NHOPI.

# Results

Figure 1: Demographic distribution of Asian and NHOPI detailed groups

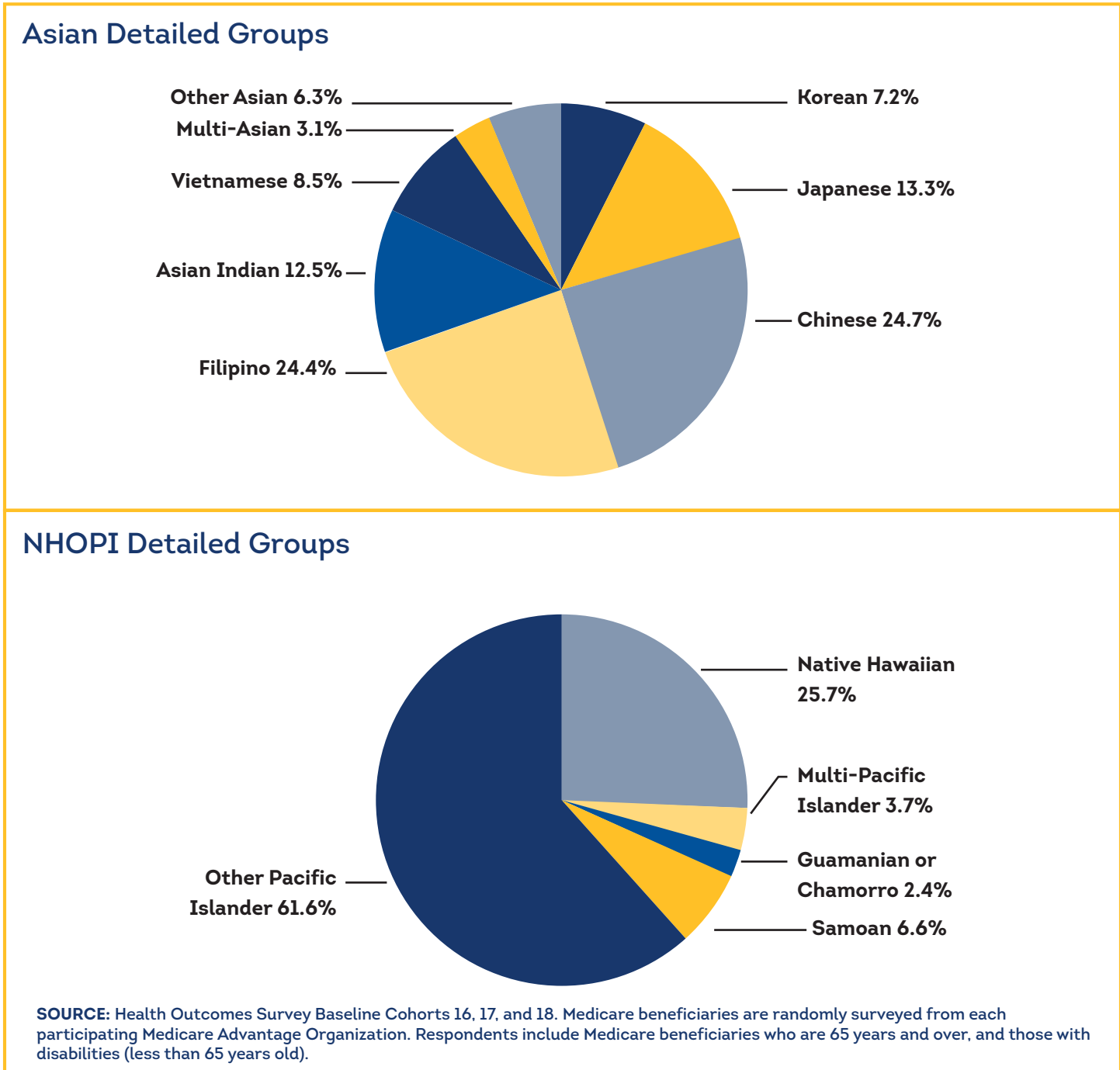
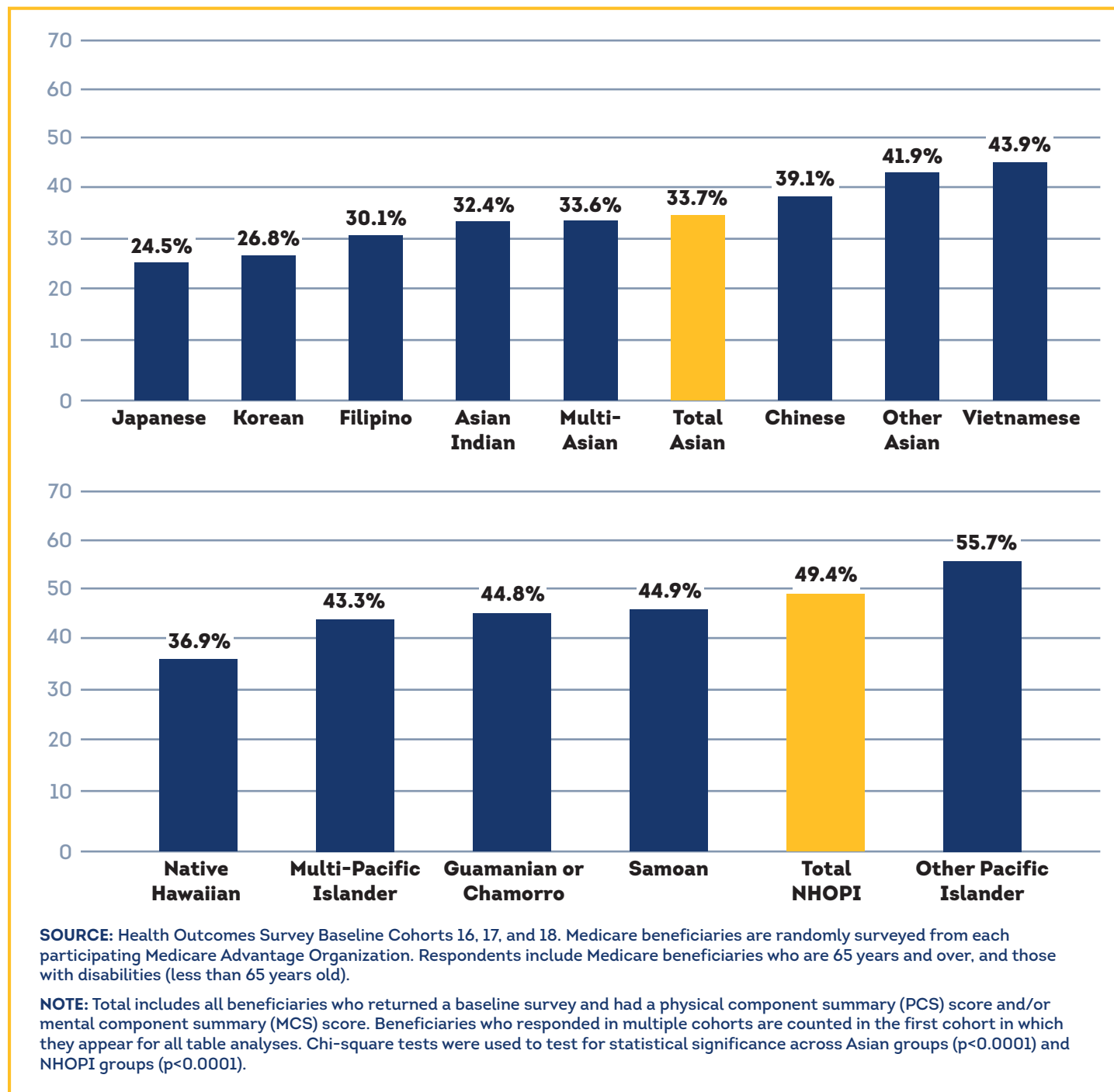


Figure 1 shows the distribution of detailed groups among Asian and NHOPI beneficiaries. Combined, all groups in the Asian Detailed Groups chart comprise the “Total Asian” group found in subsequent bar graphs. Similarly, all groups in the NHOPI Detailed Groups chart combine to represent the “Total NHOPI” group.

**Figure 2: Self-rated fair or poor general health among Asian and NHOPI Medicare beneficiaries**

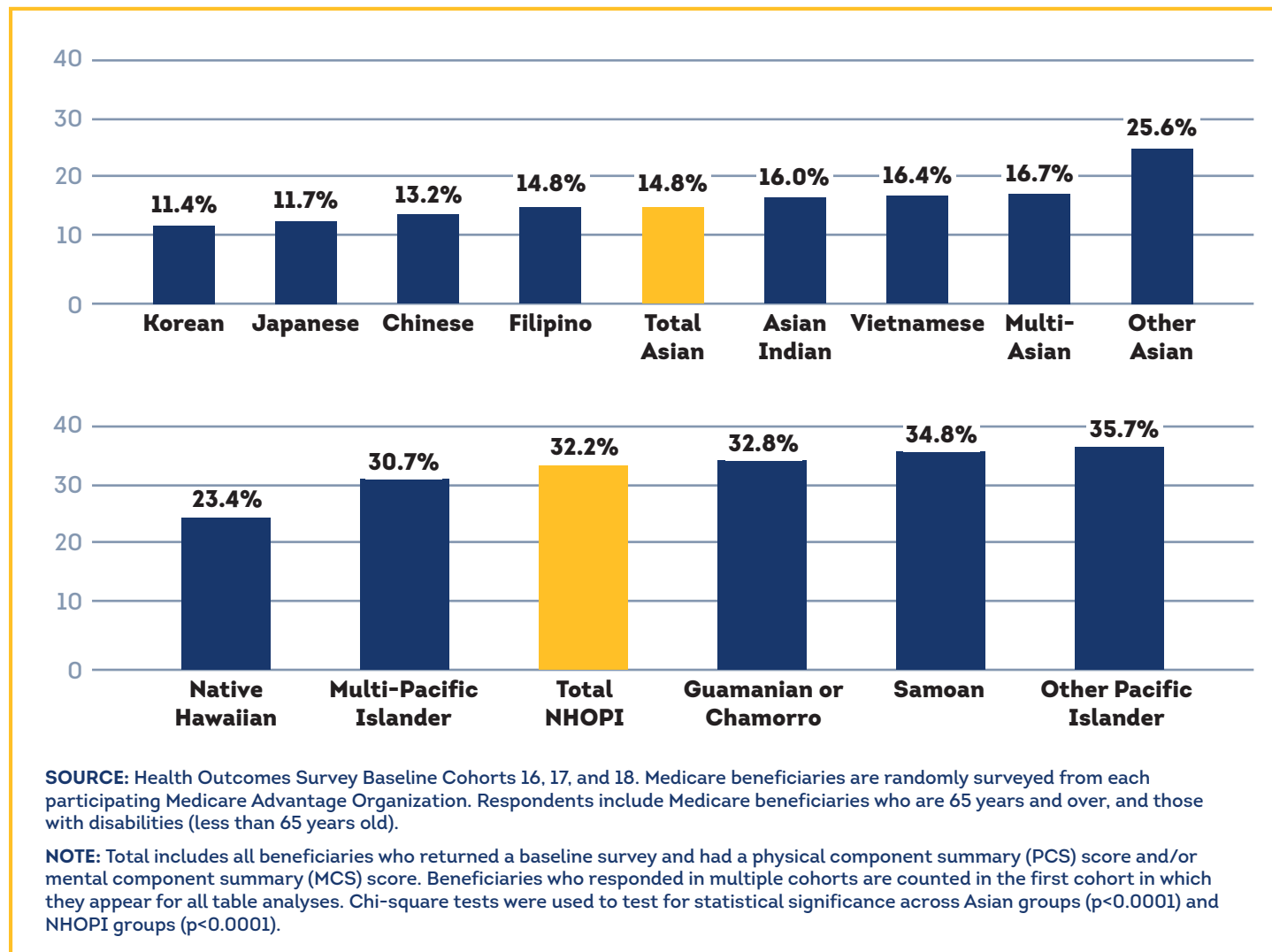


Self-rated general health status is a valid and reliable method for assessing health across different populations.<sup>3</sup> Individuals with fair or poor general health are known to be at increased risk for future hospitalization, use of mental health services, and mortality.<sup>4,5</sup>

For overall self-rated general health in Figure 2, nearly one-third of Asians (33.7 percent) reported fair or poor health. There were significant differences in self-reported general health among Asian groups. Nearly a quarter of Japanese beneficiaries (24.5 percent) and over two out of five Vietnamese (43.9 percent) and Other Asian (41.9 percent) beneficiaries self-reported fair or poor general health.

Nearly half of NHOPI beneficiaries (49.4 percent) rated their health as fair or poor. Significant differences were reported across NHOPI groups, with 36.9 percent of Native Hawaiian and 55.7 percent of Other Pacific Islander beneficiaries reporting fair or poor general health.

**Figure 3: Asian and NHOPI Medicare beneficiaries reporting 14-30 days with activity limitations**

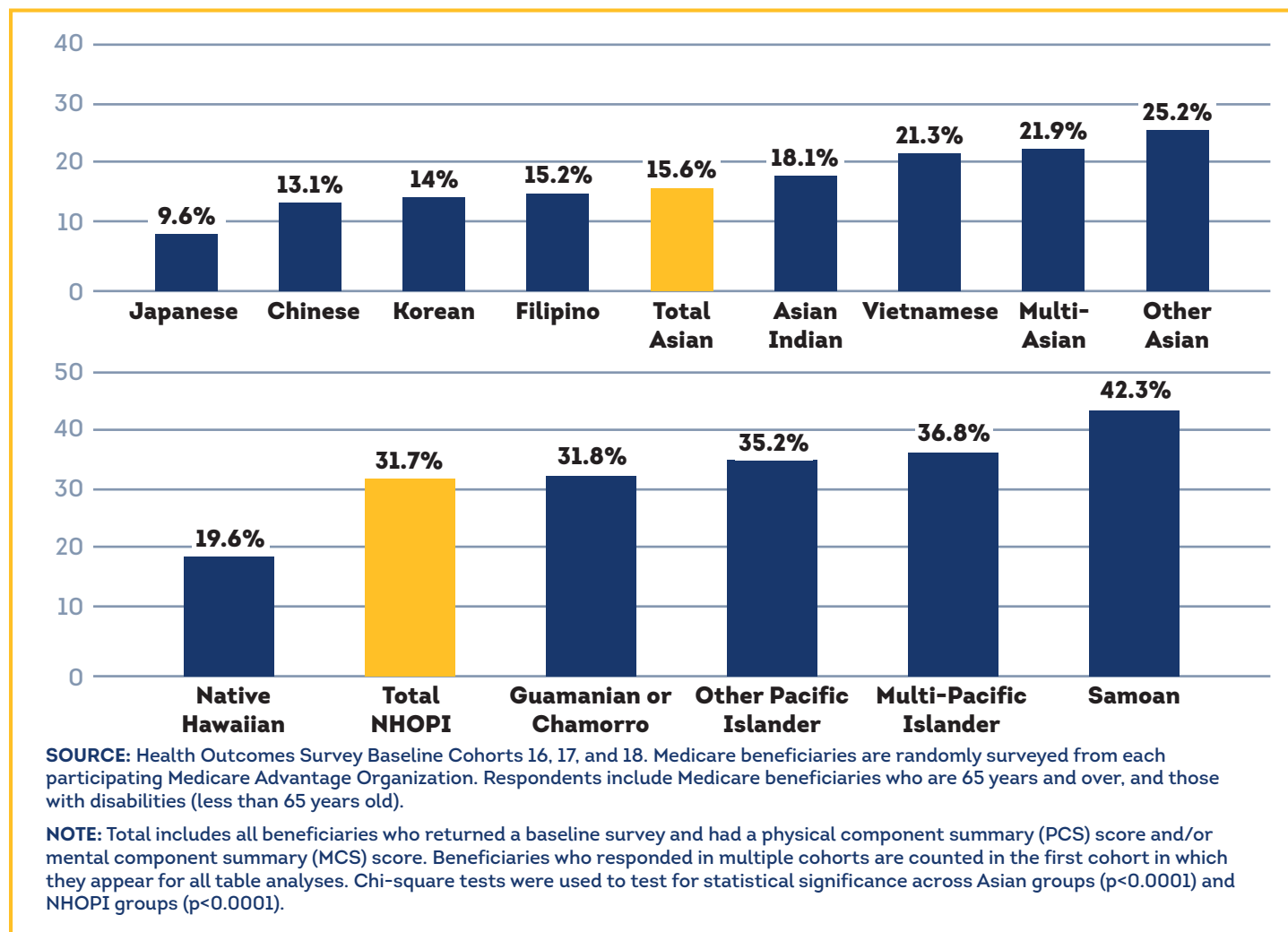


Days with activity limitations is a self-reported HOS measure of the number of days during the past 30 days when poor physical or mental health kept the beneficiary from usual activities.

Figure 3 shows the percentages of beneficiaries who reported 14-30 days with activity limitations by Asian (14.8 percent) and NHOPI (32.2 percent) groups. Significant differences were found across Asian groups who reported 14-30 days with activity limitations. Among Asian groups, 11.4 percent of Koreans and 25.6 percent of Other Asians reported 14-30 days with activity limitations.

For NHOPI beneficiaries, there were also significant differences in days with activity limitations. A nearly 12 percentage point difference was observed between Native Hawaiians (23.4 percent) and Other Pacific Islanders (35.7 percent) who reported 14-30 days with activity limitations.

**Figure 4: Prevalence of positive depression screen among Asian and NHOPI Medicare beneficiaries**



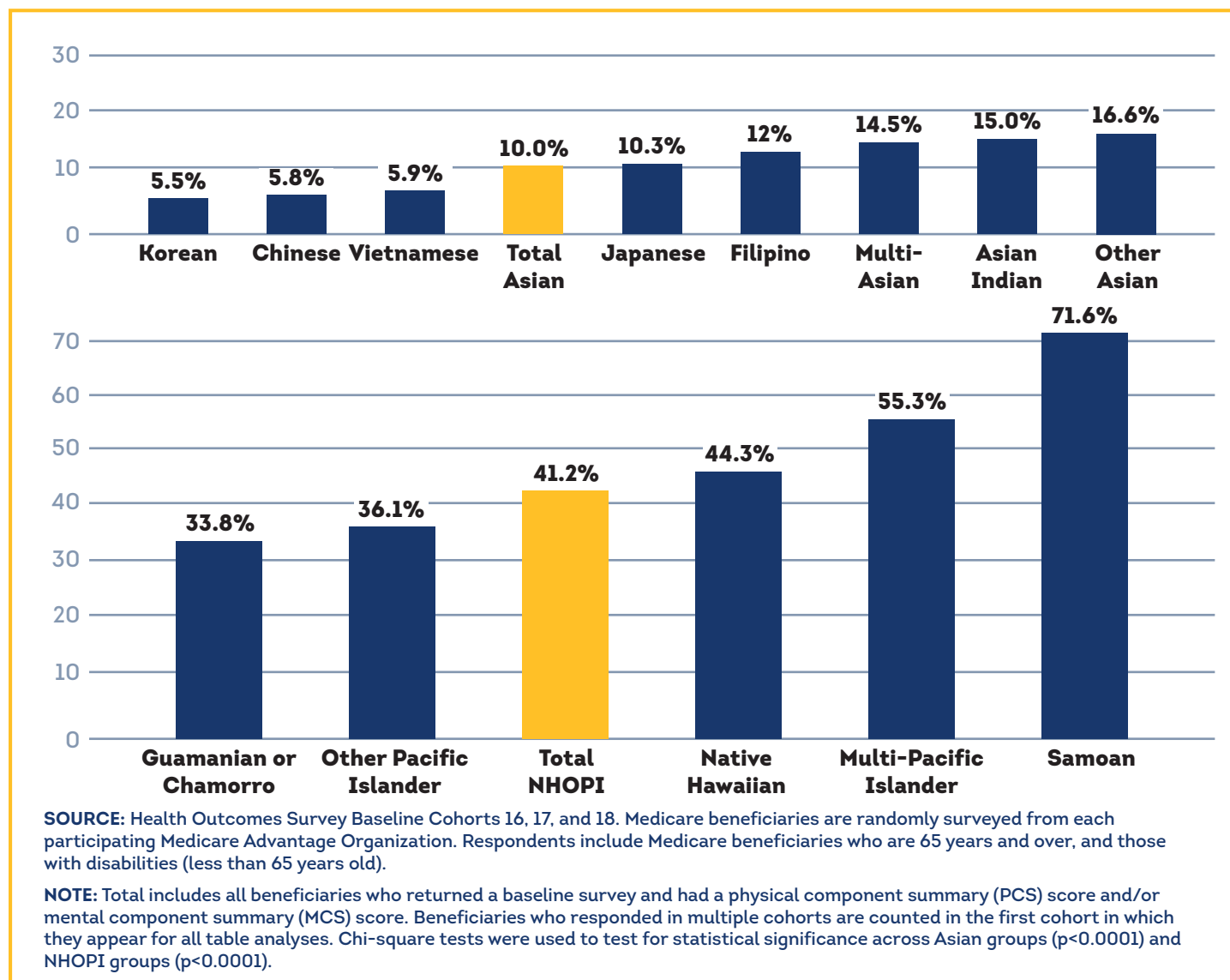
The HOS includes two questions that serve as a screening measure for depression. Each question is assigned points depending on the response given, from zero (“not at all”) to three (“nearly every day”). A Medicare beneficiary is considered to have a positive depression screen when he or she scores three points or greater on the combined total points of the two depression questions.

Figure 4 shows individuals with a positive depression screen who may be at risk for depressive disorders. Additionally, depression is significantly associated with other psychological dysfunction, as well as the presence of common chronic medical conditions, such as diabetes.<sup>6,7</sup>

Nearly 16 percent of Asians (15.6 percent) screened positive for depression. However, the prevalence of a positive depression screen was significantly different across Asian groups, ranging from 9.6 percent for Japanese beneficiaries to 25.2 percent for Other Asian beneficiaries.

Compared to Asian beneficiaries, 31.7 percent of NHOPI beneficiaries screened positive for depression. The rate of positive depression screen was 19.6 percent for Native Hawaiians compared to 42.3 percent for Samoans, and significantly different across NHOPI groups.

**Figure 5: Prevalence of obesity among Asian and NHOPI Medicare beneficiaries**



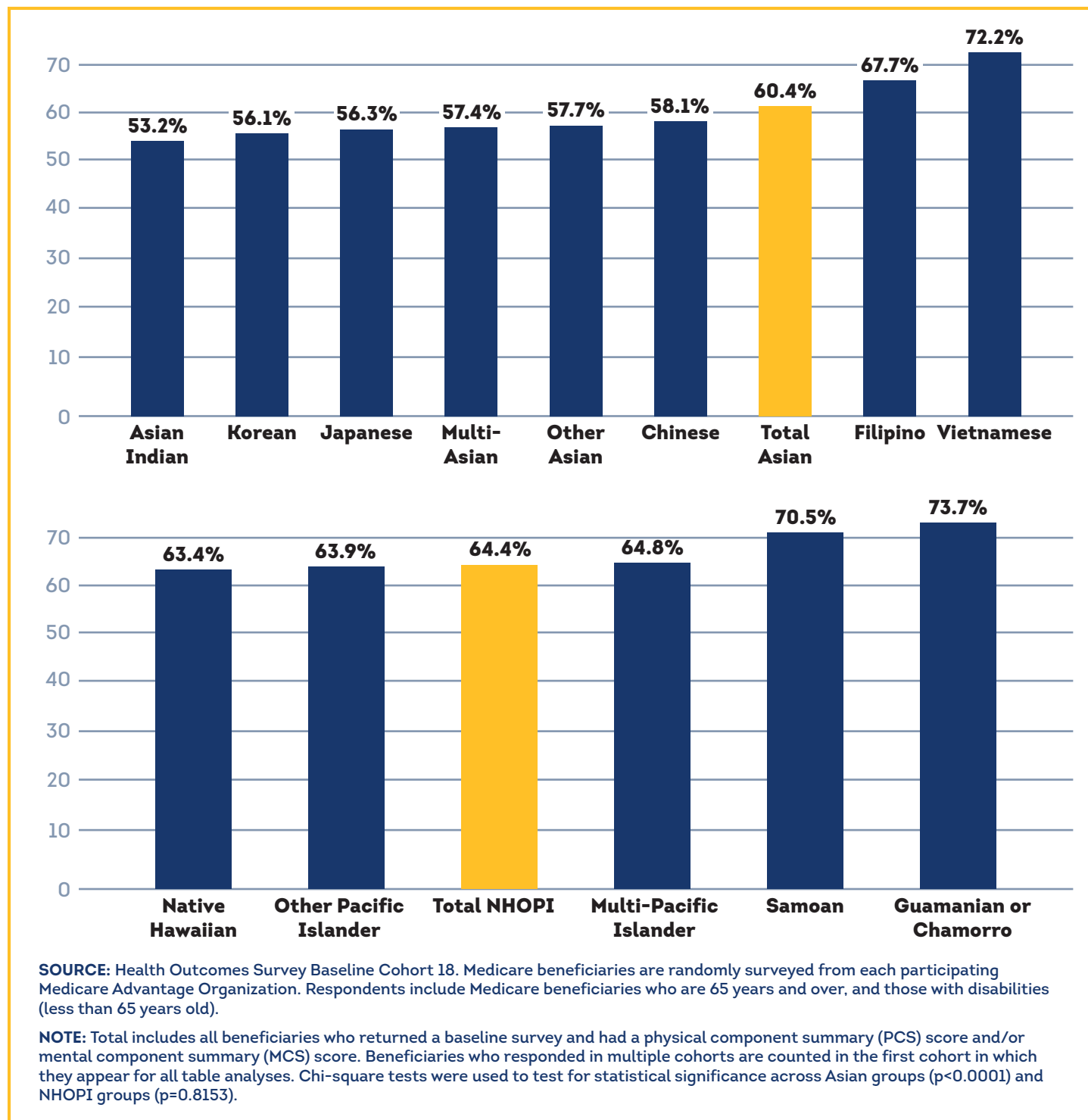
Self-reported height and weight values are used to calculate Body Mass Index (BMI), a measure that correlates with the amount of body fat in adult men and women. A BMI of 30 or higher is considered obese and increases risk for several chronic conditions including: hypertension, dyslipidemia, Type 2 diabetes, coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep apnea, and some cancers.<sup>8</sup>

Figure 5 shows that 10 percent of Asians were obese, but with significant differences across groups. Less than 6 percent of Koreans (5.5 percent), Chinese (5.8 percent), and Vietnamese (5.9 percent) were obese compared to nearly 17 percent of Other Asians (16.6 percent) being classified as obese.

The prevalence of obesity among NHOPI beneficiaries (41.2 percent) was four-times higher than among Asian beneficiaries (10.0 percent). The distribution of obesity across NHOPI beneficiaries varied significantly, ranging from 33.8 percent for Guamanian or Chamorro to 71.6 percent for Samoan beneficiaries.



**Figure 6: Asian and NHOPI Medicare beneficiaries reporting less than ideal average sleep duration (< 7 hours) during past month, HOS Baseline Cohort 18**



Two new sleep questions in the HOS Baseline Cohort 18, focus on “habitual” (i.e., past month) sleep duration (“Less than 5 hours,” “5-6 hours,” “7-8 hours,” or “9 or more hours”), and quality (“Very good,” “Fairly good,” “Fairly bad,” or “Very bad”) in order to capture more chronic sleep disturbances. There is substantial evidence linking insufficient sleep duration and poor sleep quality to mental and physical health morbidity and mortality.

Figure 6 and Figure 7 show percentages of Asian and NHOPI beneficiaries reporting less than the ideal 7-8 hours of sleep, and fairly bad or very bad overall sleep quality over the past month. Figure 6 shows that 60.4 percent of Asians reported less than the ideal 7-8 hours of sleep in the past month, compared to 64.4 percent of NHOPI. There were significant differences for less than ideal sleep duration across Asian groups, ranging from 53.2 percent of Asian Indian to 72.2 percent of Vietnamese beneficiaries reporting less than ideal sleep duration. Among NHOPI, rates of less than ideal sleep ranged from 63.4 percent of Native Hawaiian to 73.7 percent of Guamanian or Chamorro beneficiaries. However, there were no significant differences for sleep duration across NHOPI groups.

**Figure 7: Asian and NHOPI Medicare beneficiaries reporting fairly bad or very bad sleep quality, HOS Baseline Cohort 18**

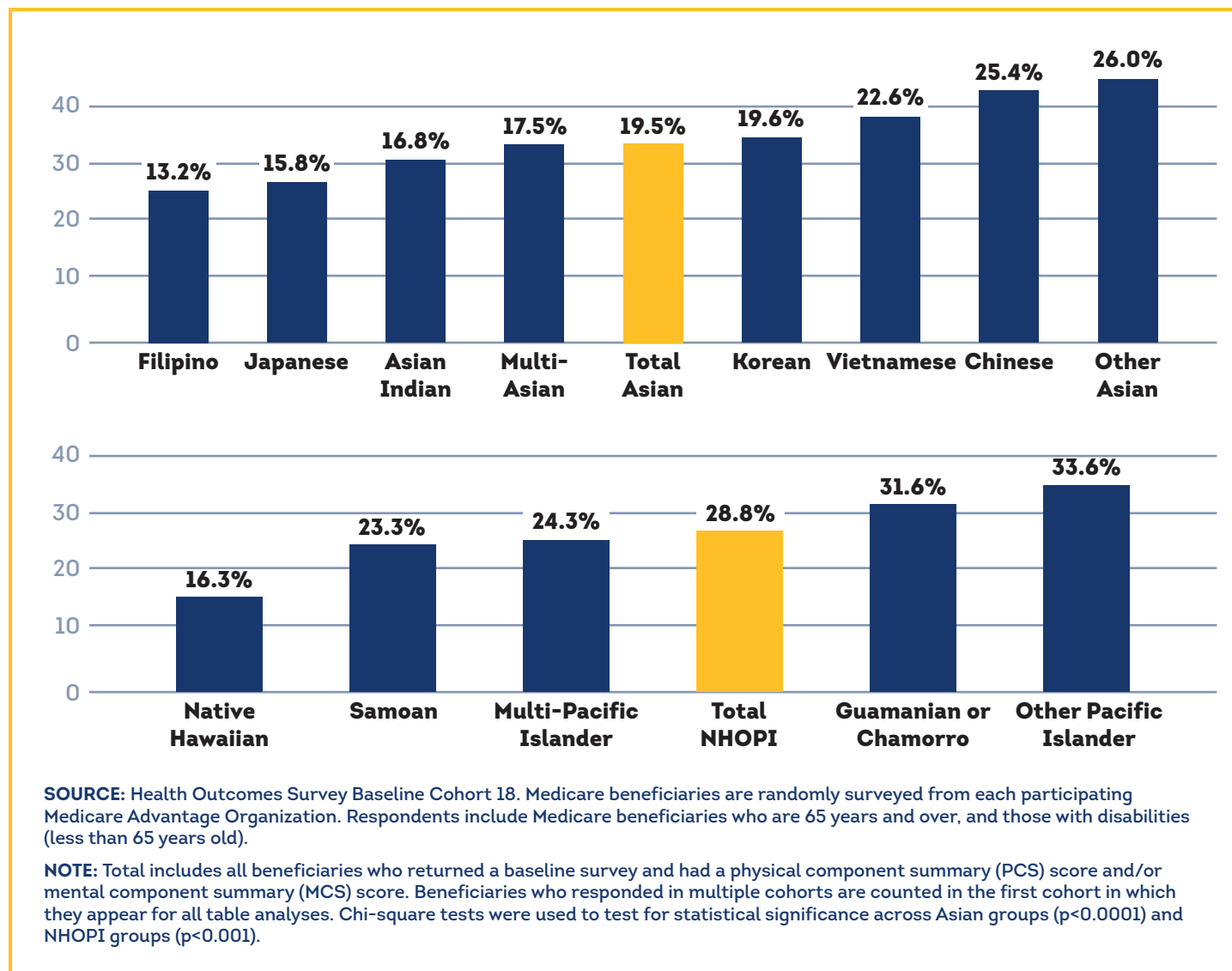


Figure 7 shows that 19.5 percent of Asian and 28.8 percent of NHOPI beneficiaries reported fairly bad or very bad overall sleep quality in the past month in the HOS Baseline Cohort 18. Significant differences were reported across Asian groups for the worst categories of sleep duration. Among Asian groups, 13.2 percent of Filipino and 26.0 percent of Other Asian beneficiaries reported fairly bad or very bad overall sleep quality. Among NHOPI beneficiaries, there were also significant differences in sleep quality, with rates ranging from 16.3 percent of Native Hawaiian to 33.6 percent of Other Pacific Islanders reporting fairly bad or very bad overall sleep quality.

## Conclusion

This data highlight provides an enhanced understanding of the health needs of diverse groups of Asian and NHOPI Medicare beneficiaries. The brief presents results from the HOS by detailed groups of Asian and NHOPI beneficiaries for self-rated general health, days with activity limitations, depression, prevalence of obesity, and two measures of sleep health. Data from the 2013-2015 HOS Baseline Cohorts 16, 17, and 18 demonstrate that within Asian and NHOPI groups there was significant variation in health status across the measures for Asians and NHOPI, with the exception of sleep duration which was not significantly different for NHOPI groups. Nearly half of NHOPI beneficiaries (49.4 percent) rated their health as fair or poor with significant differences reported across NHOPI groups, ranging from 36.9 percent for Native Hawaiians to 55.7 percent for Other Pacific Islanders. Compared to Asian beneficiaries, nearly twice as many NHOPI beneficiaries (31.7 percent) screened positive for depression. The rate of positive depression screen was more than two times greater for Samoans (42.3 percent) compared to Native Hawaiians (19.6 percent), and significantly different across NHOPI groups. Less than the ideal 7-8 hours average sleep duration in the past month was reported by 60.4 percent of Asian and 64.4 percent NHOPI beneficiaries, with significant differences for Asian groups only. Fairly bad or very bad sleep quality in the past month was reported by 19.5 percent of Asian and 28.8 percent of NHOPI beneficiaries. Significant differences in the lowest sleep quality were found within both Asian and NHOPI groups.

The HHS demographic data collection standards provide additional granularity for Asian and NHOPI racial groups, Hispanic or Latino ethnicity, sex, primary language, and disability status collected in population health surveys. This added level of detail enhances the ability of public health professionals to identify and monitor the health of diverse population groups. The findings presented in this data highlight demonstrate that stratifying health data for detailed Asian and NHOPI groups reveals unique and significant differences otherwise masked by aggregate analyses. The Medicare HOS provides CMS with an important data resource for examining the health needs of diverse groups of Medicare Advantage beneficiaries.

## Definitions

### Adult Resident Population

Medicare Advantage beneficiaries age 18 and older.

### General Health

General health status is a self-reported measure of health perception with response categories of “excellent,” “very good,” “good,” “fair,” or “poor.” For this analysis, a binary general health variable was created and classified as: 1) excellent or very good or good and 2) fair or poor.

### Healthy Days Measures

“Days with activity limitations” is a self-reported measure of the number of days during the past 30 days when poor physical or mental health kept the beneficiary from doing usual activities. Healthy Days Measures provide key information on the functional status of vulnerable sub-populations, and are used to assess the Health-Related Quality of Life<sup>9</sup> (HRQOL) across the U.S. For this analysis, a binary healthy days measure was created and classified as: 1) none or 1-13 unhealthy days and 2) 14-30 unhealthy days.

### Depression

The HOS includes two questions that serve as a screening measure for depression. The questions require the beneficiary to qualify the statements “little interest or pleasure in doing things in past two weeks” as well as “feeling down, depressed, or hopeless in past two weeks.” Each question is assigned points depending on the response given, from 0 (“not at all”) to 3 (“nearly every day”). A Medicare beneficiary is considered to have a positive depression screen when he or she scores three points or greater on the combined total points of the two depression questions.

### Body Mass Index

Body mass index (BMI) is a measure that approximates the amount of body fat in an individual and is calculated through self-reported height and weight. BMI is calculated by dividing weight in pounds (lb.) by height in inches (in.) squared and multiplying by a conversion factor of 703 ( $BMI = [\text{weight in pounds}/(\text{height in inches})^2] \times 703$ ).<sup>10</sup> BMI follows a standard categorization that includes underweight (below 18.50), normal weight (18.50-24.99), overweight (25.00-29.99), and obese (30.00 and above).

### Sleep Measures

Two new sleep questions in the HOS 3.0 were drawn from the Pittsburgh Sleep Quality Index (PSQI). The questions focus on “habitual” (i.e., past month) sleep duration and quality, rather than past week measures, in order to capture more chronic sleep disturbances. The PSQI has a high test-retest reliability and good validity in patients with insomnia.<sup>11</sup> For this analysis, binary indicators were created for both sleep duration and sleep quality. Sleep duration was classified as: 1) less than 5 hours or 5-6 hours and 2) 7-8 hours or 9 or more hours. Sleep quality was classified as: 1) very good or fairly good and 2) fairly bad or very bad.

## Data Sources and Methods

The Medicare Health Outcomes Survey (HOS) is a national survey that measures health plans' success in maintaining or improving beneficiaries' physical and mental health.<sup>2</sup> The HOS is the first patient-reported outcomes survey used in Medicare managed care. Each spring a random sample of Medicare beneficiaries is drawn and surveyed from each participating Medicare Advantage Organization (MAO) with a minimum of 500 enrollees (i.e., a survey is administered to a different baseline cohort, or group, each year). Two years later, the baseline respondents are surveyed again (i.e., follow up measurement). The HOS is a patient-reported survey with mail and, in those instances when beneficiaries fail to respond, telephone components. In April 2013, following the implementation of the HHS Data Collection Standards for Race, Ethnicity, Sex, Primary Language, and Disability Status, the HOS became the first large scale CMS survey to collect expanded measures of race, ethnicity, sex, primary language, and disability status. More information about the HOS is available at [www.HOSonline.org](http://www.HOSonline.org).

These analyses describe the health of Asians and Native Hawaiian or NHOPI respondents pooling survey data from the 2013-2015 HOS Baseline Cohorts 16, 17, and 18. The HOS health status items were collected with the HOS 2.5 instrument for Cohort 16 and Cohort 17, and the HOS 3.0 instrument for Cohort 18. The eligible sample for these analyses was derived from beneficiaries who completed the HOS survey in Baseline Cohort 16 (n= 272,936), Baseline Cohort 17 (n= 261,638), and Baseline Cohort 18 (n= 256,735). For the purposes of this report, a completed survey is defined as one that could be used to calculate a physical component summary (PCS) score or mental component summary (MCS) score. Eligible respondents (n= 791,309) included both beneficiaries age 65 years and over (n= 663,119) and beneficiaries under age 65 years, who were classified as disabled (n= 128,190). In this data highlight, age under 65 is used as a robust proxy for disability status, and successfully identifies 99.9 percent of beneficiaries in this sample who are classified by CMS administrative data as disabled with, and disabled without End Stage Renal Disease (ESRD). For those beneficiaries who were respondents in more than one baseline cohort (n= 35,056), their first complete survey was used for these analyses. Of the remaining respondents in Baseline Cohorts 16–18 (n= 756,253), the analytic sample was drawn from beneficiaries who selected one or more Asian categories (n= 23,721) or one or more NHOPI race categories (n= 2,849) from the HOS self-reported race question. Excluded from the analytic sample were respondents who chose an Asian or NHOPI category and any other race (n= 3,625). In this report, results are presented by Asian and NHOPI totals and stratified by Asian and NHOPI groups. The Asian group includes beneficiaries who self-identified as Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, or Other Asian. The Multi-Asian category includes respondents who selected more than one Asian racial group. The NHOPI group includes beneficiaries who self-identified as Native Hawaiian, Guamanian or Chamorro, Samoan, or Other Pacific Islander. Respondents who selected more than one NHOPI category were classified as Multi-Pacific Islander. Using the Chi-square test, statistically significant differences across groups are noted (p-value <0.05). Appendix tables are provided to show demographic characteristics by Asian and NHOPI groups.

## Limitations

The analyses presented in this data highlight use cross-sectional baseline data, not the longitudinal data that are available in the HOS. Therefore, trends and changes in health status are not presented in this data highlight.

Disabled beneficiaries (less than 65 years old) are included in the analytic sample and all results presented for both Asian and NHOPI respondents. Disabled beneficiaries often report lower health status compared to beneficiaries age 65 years and over across most HOS health status measures. Analyses that use data aggregated from both disabled and older respondents should be interpreted with caution as a higher proportion of disabled respondents may result in lower health status estimates for some groups. Future descriptive analyses should consider stratifying results by age when response sizes permit. In addition, any predictive modeling of health status measures should control for disability status using the age category of under 65 years.

The available sample sizes for some NHOPI groups, such as Guamanian or Chamorro, Samoan, and Multi-Pacific Islander, were small relative to other groups, such as Native Hawaiian and Other Pacific Islander. Low sample sizes reduce statistical power to detect differences by detailed racial groups. Additionally, when response sizes for any table cell are less than 11, they are not reportable per CMS guidelines to protect beneficiary privacy.<sup>12</sup>

## References

1. U.S. Census Bureau. *An Aging Nation: The Older Population in the United States*. 2014. Available from: <https://www.census.gov/prod/2014pubs/p25-1140.pdf>.
2. Haffer, S.C. and S.E Bowen, *Measuring and Improving Health Outcomes in Medicare: The Medicare HOS Program*. Health Care Financing Review, Summer 2004. 25(4): p. 1-3. Available from: <https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/HealthCareFinancingReview/Downloads/04summerpg1.pdf>.
3. Office of Disease Prevention and Health Promotion. U.S. Department of Health and Human Services. *Health-Related Quality of Life and Well-Being*. Available from: <https://www.healthypeople.gov/2020/about/foundation-health-measures/Health-Related-Quality-of-Life-and-Well-Being>.
4. Ware, J.E., M. Kosinski, and S.D. Keller, *SF-36 Physical and Mental Health Summary Scales: A User's Manual*. 1994, Boston: The Health Institute.
5. Bailis, D.S., A. Segall, and J.G. Chipperfield, *Two views of self-rated general health status*. Social Science & Medicine, 2003. 56: p. 203-217.
6. Anderson, R.J., K.E. Freedland, R.E. Clouse, and P.J. Lustman, *The prevalence of comorbid depression in adults with diabetes: a meta-analysis*. Diabetes Care, 2001. 24: p. 1069-1078.
7. Hitchcock, P.H., J.W. Williams, J. Unutzer, J. Worchel, S. Lee, J. Cornell, W. Katon, L.H. Harpole, and E. Hunkeler, *Depression and comorbid illness in elderly primary care patients: impact on multiple domains of health status and well-being*. Annals of Family Medicine, 2004. 2(6): p. 555-562.
8. Division of Nutrition, Physical Activity, and Obesity. National Center for Chronic Disease Prevention and Health Promotion. Centers for Disease Control and Prevention. *Overweight and Obesity*. 2017; Available from: [www.cdc.gov/nccdphp/dnpa/obesity/index.htm](http://www.cdc.gov/nccdphp/dnpa/obesity/index.htm).
9. Division of Population Health. National Center for Chronic Disease Prevention and Health Promotion. Centers for Disease Control and Prevention. *Health-Related Quality of Life (HRQOL) Concepts*. 2016; Available from: [www.cdc.gov/hrqol/concept.htm](http://www.cdc.gov/hrqol/concept.htm).
10. Division of Nutrition, Physical Activity, and Obesity. National Center for Chronic Disease Prevention and Health Promotion. Centers for Disease Control and Prevention. *About Adult BMI*. 2015; Available from: [https://www.cdc.gov/healthyweight/assessing/bmi/adult\\_bmi/index.html](https://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html).
11. Backhaus J, Junghanns K, Broocks A, Riemann D, Hohagen F. *Test-retest reliability and validity of the Pittsburgh Sleep Quality Index in primary insomnia*. Journal of Psychosomatic Research. 2002. 53(3): p. 737-740.
12. Centers for Medicare & Medicaid Services. *Privacy Information for Researchers*. 2015; Available from: <https://www.cms.gov/Research-Statistics-Data-and-Systems/Computer-Data-and-Systems/Privacy/Researchers.html>.



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This data highlight was written under contract number [HHSM-500-2016-00039G] by Douglas Ritenour, Jael Rodriguez, Laura Giordano, and Beth Gualtieri, at the Health Services Advisory Group in collaboration with Shondelle Wilson-Frederick at the CMS Office of Minority Health.

## Suggested Citation

Ritenour, D, Rodriguez, J, Wilson-Frederick, S, Giordano, L, and Gualtieri, B. Understanding the Health Needs of Diverse Groups of Asian and Native Hawaiian or Other Pacific Islander Medicare Beneficiaries. CMS OMH Data Highlight No. 10. Baltimore, MD. 2017.

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## Appendix

**Table 1: Asian Beneficiary Demographics, HOS Baseline Cohorts 16, 17, and 18**

Demographics	Total Asian n (%)	Asian Indian n (%)	Chinese n (%)	Filipino n (%)	Japanese n (%)	Korean n (%)	Vietnamese n (%)	Other Asian n (%)	Multi-Asian n (%)
<b>Age</b>	1,701	263	242	388	194	95	189	230	100
<65	(7.2%)	(8.9%)	(4.1%)	(6.7%)	(6.1%)	(5.6%)	(9.4%)	(15.3%)	(13.6%)
65-69	6,748	1,074	1,691	1,401	670	567	693	437	215
	(28.5%)	(36.3%)	(28.9%)	(24.2%)	(21.2%)	(33.2%)	(34.4%)	(29.0%)	(29.2%)
70-74	5,936	840	1,346	1,509	553	523	600	385	180
	(25.0%)	(28.4%)	(23.0%)	(26.1%)	(17.5%)	(30.6%)	(29.8%)	(25.6%)	(24.5%)
75-79	4,237	466	1,126	1,142	492	319	318	249	125
	(17.9%)	(15.7%)	(19.2%)	(19.8%)	(15.6%)	(18.7%)	(15.8%)	(16.5%)	(17.0%)
80-84	2,875	219	844	781	549	132	155	125	70
	(12.1%)	(7.4%)	(14.4%)	(13.5%)	(17.4%)	(7.7%)	(7.7%)	(8.3%)	(9.5%)
85+	2,224	100	605	558	705	71	59	80	46
	(9.4%)	(3.4%)	(10.3%)	(9.7%)	(22.3%)	(4.2%)	(2.9%)	(5.3%)	(6.3%)
<b>Gender</b>	10,834	1,674	2,834	2,066	1,262	839	1,086	758	315
Male	(45.7%)	(56.5%)	(48.4%)	(35.8%)	(39.9%)	(49.2%)	(53.9%)	(50.3%)	(42.8%)
Female	12,887	1,288	3,020	3,713	1,901	868	928	748	421
	(54.3%)	(43.5%)	(51.6%)	(64.3%)	(60.1%)	(50.9%)	(46.1%)	(49.7%)	(57.2%)
<b>Marital Status</b>	14,500	2,176	3,944	3,144	1,488	1,200	1,319	844	385
Married	(61.6%)	(74.1%)	(67.9%)	(54.8%)	(47.4%)	(70.7%)	(66.3%)	(56.5%)	(53.3%)
Widowed	2,729	233	555	598	481	219	265	256	122
	(11.6%)	(7.9%)	(9.6%)	(10.4%)	(15.3%)	(12.9%)	(13.3%)	(17.1%)	(16.9%)
Divorced or Separated	4,831	434	1,091	1,584	829	213	253	287	140
	(20.5%)	(14.8%)	(18.8%)	(27.6%)	(26.4%)	(12.6%)	(12.7%)	(19.2%)	(19.4%)
Never Married	1,464	94	221	407	339	65	154	108	76
	(6.2%)	(3.2%)	(3.8%)	(7.1%)	(10.8%)	(3.8%)	(7.7%)	(7.2%)	(10.5%)
<b>Education</b>	6,861	724	2,286	1,630	355	273	807	598	188
Did Not Graduate HS	(29.7%)	(25.1%)	(39.8%)	(28.8%)	(11.5%)	(16.3%)	(41.5%)	(42.6%)	(26.7%)
High School Graduate	4,959	443	1,108	983	1,144	371	516	239	155
	(21.5%)	(15.4%)	(19.3%)	(17.4%)	(36.9%)	(22.1%)	(26.5%)	(17.0%)	(22.0%)
Some College	3,975	338	763	979	834	290	387	224	160
	(17.2%)	(11.7%)	(13.3%)	(17.3%)	(26.9%)	(17.3%)	(19.9%)	(16.0%)	(22.7%)
4 Yr College Degree +	7,315	1,376	1,587	2,062	766	743	237	343	201
	(31.7%)	(47.8%)	(27.6%)	(36.5%)	(24.7%)	(44.3%)	(12.2%)	(24.4%)	(28.6%)

Continuation of Table 1 ->

Demographics	Total Asian n (%)	Asian Indian n (%)	Chinese n (%)	Filipino n (%)	Japanese n (%)	Korean n (%)	Vietnamese n (%)	Other Asian n (%)	Multi-Asian n (%)
<b>Annual Household Income</b>									
Less than \$10,000	4,608 (20.6%)	549 (19.7%)	1,305 (23.7%)	1,175 (21.5%)	240 (8.2%)	302 (18.4%)	484 (25.1%)	388 (26.9%)	165 (24.4%)
\$10,000-\$19,999	4,646 (20.8%)	464 (16.7%)	1,400 (25.4%)	983 (18.0%)	383 (13.1%)	371 (22.6%)	652 (33.8%)	286 (19.9%)	107 (15.8%)
\$20,000-\$29,999	2,547 (11.4%)	315 (11.3%)	568 (10.3%)	579 (10.6%)	382 (13.0%)	232 (14.2%)	236 (12.2%)	153 (10.6%)	82 (12.1%)
\$30,000-\$49,999	3,194 (14.3%)	410 (14.7%)	627 (11.4%)	791 (14.5%)	582 (19.8%)	306 (18.7%)	202 (10.5%)	198 (13.7%)	78 (11.5%)
\$50,000 or More	3,802 (17.0%)	637 (22.9%)	831 (15.1%)	760 (13.9%)	878 (29.9%)	309 (18.9%)	116 (6.0%)	172 (11.9%)	99 (14.6%)
Don't Know	3,580 (16.0%)	408 (14.7%)	787 (14.3%)	1,170 (21.4%)	468 (16.0%)	119 (7.3%)	239 (12.4%)	244 (16.9%)	145 (21.5%)
<b>English Proficiency</b>									
Very Well	5,245 (31.4%)	948 (46.9%)	630 (15.5%)	1,659 (39.2%)	1,318 (56.8%)	183 (16.3%)	70 (5.1%)	230 (21.9%)	207 (40.8%)
Less than very well	11,450 (68.6%)	1,074 (53.1%)	3,435 (84.5%)	2,579 (60.9%)	1,001 (43.2%)	941 (83.7%)	1,300 (94.9%)	819 (78.1%)	301 (59.3%)
<b>English Spoken at Home<sup>4</sup></b>									
Yes	2,709 (47.7%)	436 (57.8%)	313 (19.2%)	748 (66.4%)	740 (93.4%)	147 (35.7%)	83 (21.1%)	144 (38.9%)	98 (49.5%)
No	2,970 (52.3%)	319 (42.3%)	1,320 (80.8%)	378 (33.6%)	52 (6.6%)	265 (64.3%)	310 (78.9%)	226 (61.1%)	100 (50.5%)
<b>Medicaid Status</b>									
Medicaid	9,684 (40.8%)	1,160 (39.2%)	2,613 (44.6%)	2,542 (44.0%)	371 (11.7%)	516 (30.3%)	1,297 (64.4%)	845 (56.1%)	340 (46.2%)
Non-Medicaid	14,032 (59.2%)	1,801 (60.8%)	3,240 (55.4%)	3,235 (56.0%)	2,792 (88.3%)	1,190 (69.8%)	717 (35.6%)	661 (43.9%)	396 (53.8%)

**SOURCE:** Health Outcomes Survey Baseline Cohorts 16, 17, and 18 (n=756,253). Medicare beneficiaries are randomly surveyed from each participating Medicare Advantage Organization. Respondents include both seniors (≥65 years old) and beneficiaries with disabilities (< 65 years old).

**NOTE:** Due to rounding, sum of cells may not equal 100 percent.

Total includes all beneficiaries who returned a baseline survey and had a physical component summary (PCS) score and/or mental component summary (MCS) score. Beneficiaries who responded in multiple cohorts are counted in the first cohort in which they appear for all table analyses.

Beneficiaries less than 65 years old are classified as disabled.

English language is measured by two different questions across this 3 cohort sample: "How well do you speak English (very well, well, not well, or not at all)?" for Cohort 16 and Cohort 17 respondents, and "What language do you mainly speak at home (English, Spanish, Chinese, some other language)?" for Cohort 18.

## Appendix

**Table 2: NHOPI Beneficiary Demographics, HOS Baseline Cohorts 16, 17, and 18**

Demographics	Total NHOPI n (%)	Native Hawaiian n (%)	Guamanian or Chamorro n (%)	Samoan n (%)	Other Pacific Islander n (%)	Multi-Pacific Islander n (%)
<b>Age</b>	816	174	17	67	511	47
<65	(28.6%)	(23.8%)	(24.6%)	(35.5%)	(29.1%)	(44.8%)
65-69	756	169	20	51	488	28
	(26.5%)	(23.1%)	(29.0%)	(27.0%)	(27.8%)	(26.7%)
70-74	580	175	14	37	339	15
	(20.4%)	(23.9%)	(20.3%)	(19.6%)	(19.3%)	(14.3%)
75-79	361	119	*	20	206	*
	(12.7%)	(16.3%)		(10.6%)	(11.7%)	
80-84	208	63	*	*	131	*
	(7.3%)	(8.6%)			(7.4%)	
85+	128	32	*	*	80	*
	(4.5%)	(4.4%)			(4.6%)	
<b>Gender</b>	1,255	338	34	94	744	45
Male	(44.1%)	(46.2%)	(49.3%)	(49.7%)	(42.4%)	(42.9%)
Female	1,594	394	35	95	1,010	60
	(56.0%)	(53.8%)	(50.7%)	(50.3%)	(57.6%)	(57.1%)
<b>Marital Status</b>	1,086	282	26	93	646	39
Married	(39.0%)	(39.2%)	(40.0%)	(50.0%)	(37.7%)	(38.2%)
Widowed	705	153	17	29	479	27
	(25.3%)	(21.3%)	(26.2%)	(15.6%)	(27.9%)	(26.5%)
Divorced or Separated	*	174	*	48	358	19
		(24.2%)		(25.8%)	(20.9%)	(18.6%)
Never Married	*	110	*	16	232	17
		(15.3%)		(8.6%)	(13.5%)	(16.7%)
<b>Education</b>	1,264	173	21	75	968	27
Did Not Graduate HS	(46.4%)	(24.8%)	(32.3%)	(41.2%)	(57.6%)	(27.3%)
High School Graduate	863	344	24	67	382	46
	(31.7%)	(49.2%)	(36.9%)	(36.8%)	(22.7%)	(46.5%)
Some College	426	138	*	*	219	*
	(15.6%)	(19.7%)			(13.0%)	
4 Yr College Degree +	173	44	*	*	112	*
	(6.4%)	(6.3%)			(6.7%)	
<b>Annual Household Income</b>	871	150	16	49	621	35
Less than \$10,000	(32.8%)	(22.0%)	(26.2%)	(27.2%)	(37.9%)	(37.6%)
\$10,000-\$19,999	577	148	13	35	366	15
	(21.8%)	(21.7%)	(21.3%)	(19.4%)	(22.4%)	(16.1%)
\$20,000-\$29,999	256	76	*	21	149	*
	(9.7%)	(11.1%)		(11.7%)	(9.1%)	
\$30,000-\$49,999	*	99	11	23	119	*
		(14.5%)	(18.0%)	(12.8%)	(7.3%)	
\$50,000 or More	160	79	11	*	61	*
	(6.0%)	(11.6%)	(18.0%)		(3.7%)	
Don't Know	*	130	*	*	321	27
		(19.1%)			(19.6%)	(29.0%)

Continuation of Table 2 ->

Demographics	Total NHOPI n (%)	Native Hawaiian n (%)	Guamanian or Chamorro n (%)	Samoan n (%)	Other Pacific Islander n (%)	Multi-Pacific Islander n (%)
<b>English Proficiency</b>	857	362	26	46	382	41
Very Well	(43.6%)	(67.7%)	(54.2%)	(33.3%)	(32.5%)	(61.2%)
Less than very well	1,107	173	22	92	794	26
	(56.4%)	(32.3%)	(45.8%)	(66.7%)	(67.5%)	(38.8%)
<b>English Spoken at Home</b>	440	*	*	27	192	*
Yes	(57.1%)			(71.1%)	(38.5%)	
No	331	*	*	11	307	*
	(42.9%)			(29.0%)	(61.5%)	
<b>Medicaid Status</b>	1,630	312	30	108	1,116	64
Medicaid	(57.2%)	(42.6%)	(43.5%)	(57.1%)	(63.6%)	(61.0%)
Non-Medicaid	1,219	420	39	81	638	41
	(42.8%)	(57.4%)	(56.5%)	(42.9%)	(36.4%)	(39.1%)

\*Not reportable, to preserve beneficiary privacy.

**SOURCE:** Health Outcomes Survey Baseline Cohorts 16, 17, and 18 (n=756,253). Medicare beneficiaries are randomly surveyed from each participating Medicare Advantage Organization. Respondents include both seniors (>65 years old) and beneficiaries with disabilities (< 65 years old).

**NOTE:** Due to rounding, sum of cells may not equal 100 percent.

Total includes all beneficiaries who returned a baseline survey and had a physical component summary (PCS) score and/or mental component summary (MCS) score. Beneficiaries who responded in multiple cohorts are counted in the first cohort in which they appear for all table analyses.

Beneficiaries less than 65 years old are classified as disabled

English language is measured by two different questions across this 3 cohort sample: "How well do you speak English (very well, well, not well, or not at all)?" for Cohort 16 and Cohort 17 respondents, and "What language do you mainly speak at home (English, Spanish, Chinese, some other language)?" for Cohort 18.