Distribution Agreement

In presenting this Thesis as a partial fulfillment of the requirements for an advanced degree from Emory University, I hereby grant to Emory University and its agents the non-exclusive license to archive, make accessible, and display my Thesis in whole or in part in all forms of media, now or hereafter known, including display on the world wide web. I understand that I may select some access restrictions as part of the online submission of this Thesis. I retain all ownership rights to the copyright of the Thesis. I also retain the right to use in future works (such as articles or books) all or part of this Thesis.

Signature of Student Date

PARENTAL LANGUAGE OF INTERVIEW AND PRIMARY LANGUAGE SPOKEN AT HOME: ASSOCIATIONS TO NATIONAL QUALITY FORUM (NQF) QUALITY MEASURES AMONG U.S. ASIAN AND HISPANIC CHILDREN, A CROSS-SECTIONAL STUDY USING NSCH 2007

BY

Bonnie DeLor, PharmD, BCPS
Degree to be awarded: M.P.H.
Career MPH

Michael Kramer, PhD	Date
Kevin Sullivan, PhD	Date
Melissa Alperin, MPH, MCHES Chair, Career MPH Program	Date

PARENTAL LANGUAGE OF INTERVIEW AND PRIMARY LANGUAGE SPOKEN AT HOME: ASSOCIATIONS TO NATIONAL QUALITY FORUM (NQF) QUALITY MEASURES AMONG U.S. ASIAN AND HISPANIC CHILDREN, A CROSS-SECTIONAL STUDY USING NSCH 2007

BY

Bonnie DeLor, PharmD, BCPS
Degree to be awarded: M.P.H.
Career MPH

Thesis Committee Chair: Michael Kramer, PhD

An abstract of
A Thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements of the degree of
Master of Public Health in the Career MPH program
2013

Abstract

PARENTAL LANGUAGE OF INTERVIEW AND PRIMARY LANGUAGE SPOKEN AT HOME: ASSOCIATIONS TO NATIONAL QUALITY FORUM (NQF) QUALITY MEASURES AMONG U.S. ASIAN AND HISPANIC CHILDREN, A CROSS-SECTIONAL STUDY USING NSCH 2007

BY

Bonnie DeLor, PharmD, BCPS

Background. Limited English language proficiency (LEP) in the U.S. is increasing as the number of minority individuals from immigrant populations rise. LEP has been linked to child health status and access disparities. Several language metrics have been used to examine the association between language proficiency and child health disparities however no gold standard exists.

Objective. The primary objective of this study was to compare the strength of association between two measures of LEP (language of interview and primary language spoken at home) to Nationally validated child health quality indicators.

Methods. A cross-sectional study utilizing data from the 2007 National Survey of Children's Health compared select National Quality Forum (NQF) quality indicator performance based on both language metrics. Data were derived from Asian and Hispanic children in 9 states.

Results. Multivariable analysis demonstrated a significant association between history of physical activity for both language measures. Non-English language of interview had greater than 2 times the odds of lower physical activity (OR = 2.31, 95% CI: 1.15, 4.23) and non-English primary language spoken at home nearly 6 times the odds of lower physical activity (OR = 5.59, 95% CI: 2.48, 12.59). Of the remaining 8 NQF quality measures, including current or consistent insurance, the only significant association after multivariable analysis was between primary language spoken at home and receipt of family-centered care (OR = 2.09, 95% CI: 1.14, 3.83). In the secondary analysis both physical activity and lack of family-centered care remained significant in Hispanic children in multivariable models for both language metrics.

Conclusions. Our study does not provide data that leads to a strong preference of one metric over the other. Previous work comparing primary language spoken at home to level of English language proficiency found that parents providing an assessment of their English language ability was more useful than use of English language spoken at home. However the metrics and study population used were different from the current study and therefore further validation using similar quality measures and study population is warranted.

PARENTAL LANGUAGE OF INTERVIEW AND PRIMARY LANGUAGE SPOKEN AT HOME: ASSOCIATIONS TO NATIONAL QUALITY FORUM (NQF) QUALITY MEASURES AMONG U.S. ASIAN AND HISPANIC CHILDREN, A CROSS-SECTIONAL STUDY USING NSCH 2007

BY

Bonnie DeLor, PharmD, BCPS
M.P.H., Emory University, 2013
PharmD, Wayne State University, 1990

Thesis Committee Chair: Michael Kramer, PhD

A Thesis submitted to the Faculty
of the Rollins School of Public Health of Emory University
in partial fulfillment of the requirements of the degree of
Master of Public Health in the Career MPH program
2013

ACKNOWLEDGEMENTS

I wish to thank my family for all the support and sacrifices they made to help me live my dream.

A special thank you to Dr. Michael Kramer for his boundless guidance and support, I could not have asked for a better mentor.

Table of Contents

Chapter I: Introduction

Child health care disparity research has taken prominence as a key tool in our National efforts to improve the health of the U.S. public and build a better health care system. As the racial and ethnic landscape across America continues to shift, important gaps in health status and access need to be monitored, identified and remediated swiftly. The Hispanic and Asian populations are two of the fastest growing minority populations.(1-3) In 2011, the U.S. Census Bureau reported that 17% of the U.S. population were Hispanic and 5% were Asian, a good portion of whom are not U.S. born.(4) The Asian population is one of the largest immigrant populations in the U.S. with over half of the population represented as foreign born in U.S. Census Bureau data compared to 36% of the Hispanic population.(5, 6)

In immigrant populations, English language ability is felt to be one of the best proxy measures of acculturation.(7, 8) It serves as an indicator for communication and health care access barriers, it is related to cultural influences on health care and is a proxy for socio-economic factors that influence care such as insurance coverage and poverty level. Impaired English language ability is linked to a number of process and outcomes issues including health care provider communication challenges(9, 10) , higher cost of care and longer ER visits(11), avoided health care visits due to appointment scheduling, transportation and cost barriers(12) and reduced preventive care visits. (13).

Approximately 50% of the foreign born minority population speak only English at home or a language other than English however speak English very well.(14) This is in contrast to 95% of the U.S. native born population. Both culture and language influence and reflect how immigrant populations interact with the health care system. Therefore language is often used in disparity

research as a measure of acculturation to assist with explaining health and health service gaps between U.S. born individuals and other race/ethnicities where a portion of their population originates from outside the U.S.

Language variables that are used within the child health survey literature include primary language spoken at home, self-report of English language proficiency, and language in which research interview was conducted.(12, 15-18) Language measures have proven to be important predictors of health status, care access and resource utilization.(12, 15-18) Despite their widespread use, only a few studies have compared these measures and suggest that different language variables may not be equivalent in their ability to detect differences in health quality indicators within and between racial and ethnic populations.(12, 19) Understanding the different associations of language measures with health indicators may provide insight into public health measurement selection in disparity research.

To our knowledge no previous analysis has compared the performance of these two language measures associations of child health with either language of interview or primary language spoken at home. This study intends to compare these measures within the same study population, looking at the level of association to national standards of child health and health quality endorsed by the National Quality Forum (NQF). (20) Our null hypothesis maintains that the two language metrics have similar number of significant associations with select indicators of child health quality.

The objectives of this study are to (a) to compare the strength of association between two measures of LEP (language of interview and primary language spoken at home) to Nationally validated child health quality indicators in Hispanic and Asian Children from 9 states in the U.S.

using a National cross-sectional child health survey (b) to evaluate Asian and Hispanic population separately to determine if differences exist in NQF measures between English and their non-English counterparts using both language metrics.

Chapter II: Literature Evaluation

Population Characteristics Relative to Disparity Research

Since 2000, the Asian population has been the fastest growing population with a consistent one quarter of the population under the age of 18.(1, 21) The population is projected to double in the period between 2012 and 2060.(2) Child health disparity data in the Asian population has been less available than other racial minorities for a couple of potential reasons. Our knowledge about the Asian population has been biased by a historic belief that this group already has health parity due to a positive socio-demographic profile which has led to the race/ethnic group often referred to as the "model-minority" population.(22, 23) Additionally data in the Asian population have a number of well known limitations that include intra-racial aggregation leading to potentially inaccurate extrapolation across ethnic subpopulations, limited availability of Asian language of survey, as well small sample sizes leading to challenges with studying and reporting.(22, 24)

The Hispanic population likewise is rapidly growing and is responsible for much of the growth in the U.S. population.(2) By 2060, it is expected that 1 in every 3 Americans will be Hispanic.(2) Approximately one third of the Hispanic population is under the age of 18 in contrast to one fifth of the non-Hispanic white population.(25, 26) Disparity research in the Hispanic population is more abundant than Asian population data and survey instruments generally tend to offer a Spanish version which facilitates inclusion of non-English participants

however like the Asian population inter-racial aggregation can lead to imprecise inferences about the race as a whole.(27-30)

The rapid growth of both of these populations combined with their numeric contribution to current and future portions of the U.S. population place them in an important position for examining health care equity issues and creating interventions where disparities exist.

For child health research, health and wellness data is often obtained through parental response to survey questions which carries with it potential subjective biases and is also reliant on communication ability of the parent. In both Asian and Hispanic households when a non-English language is spoken at home the adult household members are less likely to speak English "very well". For example when the primary language at home is non-English, 78% of Hispanic and 74% Asian children speak English "very well" in contrast to only 51% of adults between 18 and 44 years of age in either of the respective groups.(31)

Child health studies demonstrate disparities in both Asian and Hispanic groups for measures of access, health status, satisfaction with care, and health care quality and also reveal inter-racial differences across measures. Studies which have looked at the association of race to various outcomes commonly compare racial and ethnic minorities to the non-Hispanic white child population. Noted differences in health, access and use between U.S. Hispanic or Asian children and their non-Hispanic White counterparts exists that either point to a health advantage or demonstrate health care disparities for the minority population.

Asian and Hispanic Child Health Status, Access and Utilization Data

The table below provides a brief snapshot of the child health disparity data for Asian and Hispanic children. A more in-depth review of the literature follows in the discussion below.

Table 1. Child Health Disparity Snapshot by Race (32, 33)

Health Characteristic		Asian±	Hispanic±
Health Status			
	Self-Reported Health	ND	Less favorable
	Chronic Conditions	ND/favorable	Favorable/ND except dental, Asthma, Overwt/obese
Access			
	Insurance Coverage	ND/favorable	Less favorable
	Specialty Care	Less favorable	Less favorable
Utilization			
	Has usual source of care (USC)	Less favorable/ND	Less favorable/ND
	Medical Prevention Visits	Less favorable	Less favorable/ND
	Dental Prevention Visits	Less favorable/ND	Less favorable/ND
	Receipt of Mental Health Care	Less favorable	ND
	Receipt of RX in previous yr	Less favorable	Less favorable

± Compared to non-Hispanic white children
ND = no difference

Studies evaluating parent-reported overall child health, have demonstrated consistently lower odds for Hispanic children to report excellent/very good health compared to the non-Hispanic white population (will be referred to as "white(s)" for the remainder of the paper).(32-34) For example one study noted Hispanic children were 1.84 times as likely to not report excellent/very good health status as their white counterparts (95% confidence interval [CI] 1.62-2.10).(32) Differences in health status for Asian Americans versus whites have been measured a number of ways with sometimes inconsistent results across studies owing likely to the previously mentioned methodological limitations. Overall parent-report of health status in aggregated racial analyses demonstrated worse health status for Asian children compared to white children in the middle

age range of 6-11 years (OR= 5.15; 95% C.I. 1.27, 20.84) however the balance of studies have found no difference between the two racial groups.(32-34) Asian subpopulation analysis, either categorizing children by their parents country of origin or the child's ethnic subpopulation, have presented mixed results, showing either worse physical health in young Asians children or no significant difference when all age groups are studied collectively.(35, 36)

Other health status indicators have shown favorable outcomes for Asian children indicating they are less likely to miss school due to illness(36), less likely or no difference in having a learning disability,(32, 33, 36) less likely or no difference in being overweight/obese or having a chronic health condition than their white counterparts.(32, 33, 36) It is unclear from the data within these studies if the decreased likelihood of reporting a health condition was a true health advantage for Asian children compared to whites or if it was potentially due to impaired access in Asian children therefore lower opportunity for disease discovery.

Hispanic child health status indicators differ from Asian children. They are reported to have worse dental condition and more likely to be overweight, and/or report having asthma than whites.(32) However Hispanic children are less likely to have ADHD or ear infections and do not have any difference from their white counterparts relative to a number of other chronic conditions such as diabetes, neurobehavioral issues, digestive or skin allergies.(32)

Multivariable analysis looking at various indicators of access to care in Asian children have shown there is no difference or favorable status in having medical or dental insurance compared to whites. (32, 33, 36) In contrast, Hispanic children who are less likely to have insurance.(32, 37) Both Asian and Hispanic children report difficulties obtaining specialty care (32) while

Asian children report problems with their health-plan, transportation problems and appointment scheduling for dental care.(32, 33)

Studies conducted looking at multiple indicators of utilization have found no difference in having a usual source of care for Asian children (36) however the balance of the studies suggest Asian and Hispanic American children are significantly less likely to have a usual source of care or previous health visit in the prior year.(32, 33, 36, 37) Studies have reported Asian American children more likely to have no mental health care in past year (32, 33) while Hispanic children report no difference from whites on mental health care use.(32). Inconsistent data exists for receipt of dental care in the previous year for either Asian or Hispanic children.(32, 33, 37) Neither group was as likely to have received a prescription compared to their white counterparts.(32, 33)

Role of Language in Disparity Research

To better understand racial/ethnic variations in health care, subpopulation analysis looking at the contribution of socio-demographic and economic differences between groups have been studied.(34, 37, 38) Additionally, measures attempting to capture cultural influences have been applied to explain group differences in health within populations containing a high proportion having immigrant status. This is particularly true for both the Asian and Hispanic race. The Asian population maintains the highest proportion of their population being foreign born of all races in the US, with 56% of Asians born outside the US, while over one third of Hispanics are non-U.S. born.(5, 6) Therefore measures of acculturation are included in models to try to explain the disparities in immigrant populations.

Acculturation has been defined numerous ways depending on the discipline of origin but in general represents the influence of one culture on another's cultural behaviors or lifestyles.(39, 40) In epidemiologic cross-sectional studies this is generally viewed as a linear process and speaks to the difference in health groups based on specific measures of acculturation at a specific point in time.(39, 40) Acculturation tools in Asian and Hispanic studies range from summative scales or single item, non-scale related indices.(40, 41) Popular items used in population health surveys tend to reflect non-scale measure preference due to availability and practicality. The most commonly used items in health status and health service utilization studies are proxy measures of acculturation such as nativity, generational status, time in the U.S. and language.(40, 41) Due to the complexity of assessing acculturation and its association to various health indicators no clear gold standard appears to be promoted.(40-43)

Language measures such as primary language spoken at home, self-reported English language proficiency and language of interview have all been studied relative to their association to child health and health care outcomes. Population based public health data on child health are often derived using parent or primary care giver response. Data from the American Community Survey indicate that 41% of Asian children and 52% of Hispanic children have at least one parent with limited English language proficiency.(44) Nearly 17% of Asian children and 24% of Hispanic children reside in a linguistically isolated household defined as a household where no one over the age of 13 speaks English nor do they speak a language other than English in the household and are able to speak English well.(44) Children from limited English speaking parent homes experience a number of health care process, structure and outcome variances.

Primary language spoken at home is often used as a dichotomized variable: English or non-English. Studies looking at multiple indicators of health and access found children in non-

English primary language (NEPL) households were more likely to report negative health status related to self-reported physical and dental health however had lower odds or no difference in developmental, behavioral or social delay and were less likely to report chronic health conditions.(15, 16) Additionally, NEPL children had several access and utilization gaps such as lack of or inconsistent insurance (15, 16), less likely to receive care via a medical home(15), lack a usual source of care (15, 16), and lack preventive medical, specialty or dental care compared to English-language proficient (EPL) counterparts.(16) When results were analyzed by race, Asian Pacific Islander (API) children were less likely to have negative health status indicators or had no difference compared NELP whites except for reporting a higher likelihood of not having excellent/very good teeth condition.(16) The only significant access issue for NEPL API children versus NEPL white children demonstrated a nearly13 times greater odds of having unmet dental care needs (OR=12.88; 95% CI 2.70,61.51) and relative to utilization of services were more likely to not have a medical visit in the previous year (OR=2.91; 95% CI 1.40, 6.05) and more likely to not receive a prescription if needed (OR=5.58; 95% CI 1.26,24.72) and/or to require interpreter service (OR=0.4; 95% CI 0.01, 0.20).(16) Outcomes for NEPL Hispanic children showed slightly different results indicating language spoken at home imparts different disparities by race.(16) Interestingly Hispanic children were 3 times more likely than NELP white children to require interpreter services (OR=3.35; 95% CI 1.24, 8.99) which differs from the previously reported API children data.

A combined measure of language spoken at home and self-report of language proficiency if the parent reported non-English language primary household has also been used as a measure of language barrier to health, health care access and utilization. These studies categorized respondents as English speaking if they indicated English was the primary language spoken at

home.(45) If respondent did not primarily speak English at home or were interviewed in a language other than English they were asked to rate their English language ability as very well, fairly well or not well. Compared to children with ELP parents, children whose parents report limited English language proficient (those describing themselves as speaking English not well or not at all and language other than English at home) are more likely to be uninsured and seek care or medications outside of the U.S. Unlike the data from the previous studies using language spoken at home, this study found no difference in usual source of care indicator or health care provider visit in the previous 12 months for any degree of language proficiency described. Limited English language proficiency was associated with children being less likely to have visited an ER in the previous year, less likely to delay or abstain from seeking care and less likely to report health care discrimination.(45)

Another language measure used less commonly is language of interview.(17, 18) A cross-sectional survey conducted in Hispanic children in Arizona demonstrated children whose parents were interviewed in Spanish were more likely to be in fair or poor health, less likely to have a usual source of care or medical visit in the previous year and no difference in use of emergency care or having a disability than their counterparts whose parents chose to be interviewed in English.(17) Another study evaluated the association of language of interview and access indicators in children with special needs. Children whose parents were not interviewed in English were significantly more likely to not receive needed support services, lacked a usual source of care, were less likely to have a personal health care provider, and less likely to have family-centered care. Additionally they were more than 11 times as likely to have inadequate insurance (OR=11.29; 95% CI 7.21, 17.46), and significantly more problems receiving needed

specialty referral, more likely to pay $500 or more annually out-of-pocket and have work impact to one of their family members as a result of caring for the child.(18)

Limited data exists on how different measures of language associate with health outcomes across racial/ethnic groups. Comparison of primary language spoken at home to self-report of English language proficiency in a northeast urban community produced disparate results in measures of access, health status and health care utilization.(12) For example in multivariable analysis health status differences were seen with parental limited English proficiency (LEP) but not with primary language spoke at home. In fact when primary language spoken at home was used, no status or access issues were identified except for reduced odds of children not being brought in due to inconvenient clinic hours for children both in non-English language and bilingual homes. Parental LEP was associated with a child being three times as likely to report fair/poor health status in children (OR=3.04; 95% CI 2.00, 4.60) and double the odds of at least one bed day for illness in the past year (OR=2.15; 95% CI 1.39, 3.32). For indicators of access and utilization, children of parents reporting LEP versus those of English proficient parents, were at approximately 2 to 4 times higher odds of reporting barriers in six of nine measures evaluated. The authors suggest that parental language proficiency might be a more precise measure of language barrier than language spoken at home. However other authors have pointed that self-described level of language proficiency may introduce measurement bias due to the subjective nature of the derived variable and proposed that language of interview may be a better measurement.(19)

What is apparent in the literature to date is there are no clear gold standard for language measures and the studies using language metrics in association to health status, access and quality have been assessed against a diverse set of outcome measures. Additionally there is

some suggestion that not all language metrics will reveal all potential disparities. In view of the common use of population cross-sectional studies to assess health care disparities and frequent use of language measures as explanatory variables for minority populations with a demonstrable immigrant component, it seems prudent to assess the relative value of different language variables to detecting inequalities. This study intends to compare these measures within the same study population, looking at the level of association to national standards of child health and health quality endorsed by the National Quality Forum (NQF). Our hypothesis is that non-English compared to English language of interview will demonstrate stronger associations to NQF quality metrics in Asian and Hispanic children compared to non-English/English primary language spoken at home. This is based on one study where 70.5% of non-U.S. born Asian adults interviewed in a language other than English reported to not speak English "well/not at all" compared to only 7.6% in those interviewed in English.(19) In contrast U.S. Census data indicate for those who report primary language at home that is other than English, 32% report speaking English "less than very well".(31)

Chapter III: Methods

A cross-sectional study was conducted utilizing the 2007 National Survey of Children's Health (NSCH) to compare the association of parental language of interview versus primary language spoken at home to select NQF measures of child health.

Population

The study included Asian and Hispanic children 0 to 17 years of age. The sample of children was restricted to NSCH respondents from 9 states where children identified as single race of Asian accounted for at least 5% of the child population within a state.(46) NSCH only reports

Asian race from these states to reduce risk of deductive disclosure of individual respondents. The nine states were California, Hawaii, Maryland, Massachusetts, Nevada, New Jersey, New York, Virginia and Washington.(46)

Research Design

The NSCH is a national random sampled telephone survey of households with children birth through 17 years of age conducted by the National Center for Health Statistics of the Centers for Disease Control and Prevention (CDC).(47) The purpose of the survey design is to provide national and state level prevalence data on child and parent physical and emotional health. One child is selected from each eligible household to serve as the subject of the survey responses. Surveys are completed by the child's parent or primary caregiver. There are 11 sections to the survey, which asks a broad range of questions ranging from health status and functional ability assessment questions, health access and insurance coverage, family interaction, parental health and community/neighborhood attributes.(48) The survey was conducted between April 2007 and July 2008, resulting in 91,642 completed surveys.

In addition to offering English and Spanish versions of the survey, the 2007 NSCH offered translation services for the survey that extended the potential reach into Asian population. The survey was translated into Mandarin, Cantonese, Vietnamese, and Korean.(46) Individuals indicating a language other than English or Spanish were directed to a translation service provider to assess eligibility for survey completion. Eligibility was determined by the household containing the eligible children and if one of the four Asian languages were spoken in the household.

The non-publically available database was used to capture both Asian race and language of interview variable which was not reported in the publically available source.

Dependent Variables

Select child health and health care quality measures endorsed by the National Quality Forum (NQF) were used as the primary outcome variables. National quality indicators have been developed to create consistency in measuring state, local and national performance.(20) Therefore understanding how various language metrics are associated with these measures will potentially provide insight into future language measure selection. Quality measures selected by the NQF are evaluated and endorsed based on reliability and validity, ability to use in non-tested settings and importance of the measure for quality improvement purposes.(20) The measures endorsed from the 2007 NSCH which used for this study include: four measures of physical and oral health; eight measures of quality of care and two measures of insurance coverage. A brief overview of indicators is listed below. Appendix I contains a detailed description of the dependent variables and age groups to which they apply.

Physical and Oral Health

BMI Class: Dichotomized: "Healthy" (Healthy Weight – 5th to 85th Percentile) "Not Healthy" (Overweight, Obese - $\geq$ 85th Percentile)

Children exposed to secondhand smoke: Dichotomized: "No" (Non-smoking household or Smoker present but not in house) "Yes" (Smoker present and smokes inside house)

Child with decayed teeth or cavities: "Yes/No"

Children who engage in weekly physical activity: Dichotomized: "No" (0 days, 1-3 days) "Yes" (4-6 days or Everyday)

Quality of Care (Dichotomized: "Yes/No")

Children who receive preventive medical visits

Children who receive preventive dental care

Children who receive family-centered care

Measure of medical home for children and adolescents

Children who receive effective care coordination of healthcare services when needed

Children who had problems obtaining referrals when needed

Children with a usual source of care when sick

Children whose parent(s) completed a standardized developmental screening tool

Access: (Dichotomized: "Yes/No")

Current health insurance

Consistent health insurance

Independent Variables

Primary Language in household: Dichotomized: English versus Non-English

Language conducted in English: Dichotomized: English versus Non-English

Covariates

The following covariates were included in the adjusted model to control for other factors known to influence health status, quality and access.

Child race/ethnicity: Hispanic Only and Asian Only

Sex: Male, Female (other coded as missing)

Age Categories were used for demographic analysis: 0-5 years, 6-11 years, 12-17 years. Age as a continuous variable was used in the adjusted logistic regression models.

Generational Status defined as:

1st generation = child born outside of US and at least 1 parent born outside of US

2nd generation = child born in US and at least 1 parent born outside of the US

3rd generation = child and both parents born in the US (reference)

Highest educational level obtained by parent(s):

Dichotomized post-high school yes/no

Poverty level defined as:

At or below 100% poverty

Above 100% to at or below 199% poverty level

Above 200% to at or below 399% poverty level

Above or at 400% poverty level (reference)

Total kids in household: 1, 2, 3, 4+

Family structure defined as:

Two parent, step family

Single mother, no father present

Other family type

Two parent, biological or adopted (reference)

Employment status: Anyone in the household employed at least 50 weeks out of the past 52 weeks? Yes/No

Parent's marital status defined as:

Not married and not living together as partners

Living together as partners

Married (reference)

Analysis

Statistical analysis was conducted using appropriate procedures in SAS to account for the NSCH complex sampling design (PROC SURVEYFREQ and PROC SURVEYLOGISTIC). Each sampling unit was assigned a sampling weight to reflect the selection probability and adjusted for non-response, coverage based on land line availability or multiple phone lines and sub-sampling by age-eligibility.(46) Sampling reflects non-institutionalized U.S. children under the age of 18. Questions with response of "don't know or "refused to answer" will be set to "missing". Missing values were not included in the analysis.

A Chi-square test of independence was used to describe the differences in the distribution of the socio-demographic characteristics between English and non-English language spoken at home and English and non-English language of interview. Socio-demographic characteristics among Asian and Hispanic children were also compared. An alpha of 0.05 was used to determine statistical significance. Total children and the weighted frequency that represents the state prevalence estimates and standard error of the percentage are presented.

Multivariable logistic regression was used to test the association between each outcome and language of interview as well as each outcome and primary language spoken at home. A stable model was used for all adjusted odds ratios and included all covariates to allow for a equal comparison of both language metrics on each dependent variable. The final models used to evaluate the association between the NQF insurance indicators and each language metric did not contain the insurance covariates. The number of statistically significant associations revealed for each language metric was used to determine which is a better metric of LEP when assessing child health quality disparities. Statistical significance was determined for the adjusted

OR of each association if the 95% confidence interval that did not contain the null value and Wald Chi-square *P* value <0.05.

Chapter IV. Results

Socio-demographic Characteristics by Language Measure

Table 2 and Table 3 shows the distribution of socio-demographic characteristics of children based on English language of interview or primary language spoken at home. Approximately one third of respondents were interviewed in a language other than English. Forty-seven percent reported a language other than English as the primary language spoken at home. The distribution by race for language of interview was significantly different. Among children whose parents were interviewed in a language other than English, 91.8% were Hispanic and 8.2% were Asian compared to English interview where 45% were Asian and 55% were Hispanic ($P < 0.0001$). The distribution by race was not significantly different between English and non-English language household with approximately two thirds of each group reported as Hispanic ($P = 0.94$).

There were no statistically significant differences in the distribution by sex, family structure, or parental marriage and cohabitation status among either language measure. There are significant differences in the distribution of children by generational status, parental educational attainment, poverty level , employment , current insurance status and insurance type between English and non-English for both language metrics.

Non-English language of interview and primary language spoken at home were more likely to be 1st or 2nd generation, have parents with high school or lower education, live in lower income

households, have one or both parents with impaired employments status, and be currently uninsured. English language of interview and primary language spoken at home were more likely to have private insurance, while the distribution by insurance type amongst non-English language was most likely to reflect public insurance.

The distribution by age amongst non-English and English primary language at home is significantly different ($P = 0.1$) however the distribution by language of interview was not different ($P = 0.53$). Similarly non-English language of interview was more likely to report 3 or more children in the household versus English language of interview ($P < 0.01$). The distribution of total children in the household was not different between English and non-English primary language spoken at home. Seventy percent of non-English language of interview compared to 81% of English language of interview were reported to have parents that were legally married ($P = 0.02$). Likewise those children whose parents were interviewed in English were more likely to report having consistent health insurance ($P = 0.0005$). No significant differences were seen between English and non-English primary language spoken at home.

Socio-demographic Characteristics by Race

Table 4 describes the distribution of socio-demographic characteristics based on race. There were no statistically significant differences between Hispanic and Asian children relative to primary language spoken at home, age distribution, or sex. Hispanic children were more likely to be U.S. born with U.S. born parents ($P < 0.0001$). Asian children were more likely to come from households with parents who had greater than a high school education ($P < 0.0001$), higher percentage of children in higher income households ($P < 0.0001$) and have no interruption to parental employment in the previous year ($P = 0.01$). Ninety percent of Asian children come

from households where parents are legally married compared to 69% of Hispanic children ($P < 0.0001$). Other household structure differences were significantly different as well. Ninety-two percent of Asian households were reported to have two biologic/adopted parents, compared to 69% percent of Hispanic households ($P < 0.0001$). The distribution of total number of children in the households also significantly differed between Asian and Hispanic children, with Asian children reporting higher percentage of the population with 1 or 2 children in the household ($P = 0.0016$).

Regarding measures of access such as current insurance coverage and consistent insurance coverage, significant differences exist between the two racial groups. Ninety-six percent of Asian children were currently insured compared to 87% of Hispanic children ($P < 0.0001$), similarly 95% of Asian children had consistent insurance over the previous year compared to 79% of Hispanics ($P < 0.0001$). The distribution by insurance type also was significantly different, with Asian children more likely to carry private versus public insurance (77.5% vs 18.8%) compared to Hispanic children where 46.7% had public insurance versus 40.3% private insurance ($P < 0.0001$).

Association of Language Measures to NQF Indicators (Table 5 and Table 6)

Physical and Oral Health

Bivariate analysis showed language of interview was associated with higher odds of a child being overweight or obese (OR = 2.72, 95% CI: 1.18, 6.28) and five times more likely than English speaking counterparts to have physical activity less than 4 times per week (OR = 5.17, 95% CI: 2.88, 9.26). There was no significant association to BMI in the primary language spoken at home however 4 times higher odds of physical activity less than 4 times per week (OR

= 4.13, 95% CI: 2.42, 7.05). Multivariable analysis adjusting for nine covariates demonstrated significant association between history of physical activity for both language measures, with non-English language of interview reporting more than 2 times the odds of lower physical activity (OR = 2.31, 95% CI: 1.15, 4.23) and non-English primary language spoken at home nearly 6 times the odds of lower physical activity compared to English counterparts (OR = 5.59, 95% CI: 2.48, 12.59). No association to exposure to household smoke or presence of dental decay was seen with either language measure in either unadjusted or adjusted analysis.

Quality of Care

Bivariate and multivariable analysis showed no significant associations to preventive medical visits, effective care coordination, referrals or completion of developmental screens to either language measure. Non-English language of interview and primary language at home showed significant associations to lack of having a medical home and usual source of care when sick, however after adjusting for covariates, neither language measures was significantly associated with either quality measure.

Bivariate analysis showed an association to non-English language and lack of receipt of preventive medical visits in the previous year, however multivariable adjustment was not significant. Of the six quality of care measures the only significant association seen after multivariable analysis was seen with primary language spoken at home and receipt of family-centered care. Non-English primary language homes were 2 times as likely to not receive family-centered care than English language primary homes (OR= 2.09, 95% CI: 1.14, 3.83).

Insurance Status

Significant associations of non-English language interview were seen to having current as well as consistent health insurance on bivariate analysis however once adjustment was conducted no significant association was seen. Non-English primary language at home was significantly associated with not having current insurance on bivariate analysis but was no longer significant once the covariates were added to the model.

Secondary Analysis by Race

Table 7 shows NQF indicator performance by race. Significant differences between Asian and Hispanics were demonstrated for 2 of the 4 physical and oral health measures and both insurance measures. Forty-three percent of Hispanics compared to 23% of Asians had BMI's $\geq$ the 85th percentile by age ($P = 0.02$). Among Hispanics 28% reported recent (previous 6 month) history of dental decay or cavities versus 18% of Asian children ($P = 0.04$)

Table 8 and Table 9 show the adjusted analysis for each race looking at the association of each language measure to each NQF quality indicator. Among the Asian population, no association between either non-English language of interview or non-English primary language spoken at home was seen to any NQF quality indicator. In Hispanic children, non-English language of interview and non-English primary language at home were associated with a higher odds of having activity less than 4 days per week. Non-English interview was associated with nearly 7 times the risk of lower activity level (OR = 6.93, 95% CI: 2.62, 18.4) and non-English language spoken at home was associated with 5 times the risk of lower activity (OR = 5.0, 95% CI: 2.12, 11.79). The only quality of care measure that showed significant association to non-English language was receipt of family-centered care among Hispanic children. Hispanic children whose

parents were interviewed in a non-English language had more than twice the odds of lacking family-centered care (OR = 2.72; 95% CI: 1.07, 6.91) Similarly, non-English spoken at home was associated with nearly 3 times greater odds of not receiving family-centered care as their English language at home counterparts (OR = 2.96, 95% CI:1.15, 7.62).

Chapter V: Discussion and Public Health Significance

Summary and Conclusions

The primary purpose of this cross-sectional study was to compare the association of two language metrics on nationally validated child health quality indicators in two of the largest and fastest growing minority populations in the U.S. Three key findings from the primary analysis indicate that non-English language of interview and non-English primary household language in Asian and Hispanic child populations have similar socio-demographic characteristics which display multiple socio-economic vulnerabilities and include lower educational attainment, household financial resources, employment status and impaired health insurance. In contrast to primary language at home, the distribution of total number of children in the household, legal marital status of the parents and consistency of health insurance was significantly different between English and non-English language of interview.

The second key finding was that other than age and sex, key socio-demographic measures were significantly different between Asian and Hispanic children. A higher proportion of Hispanic children were described as 3rd generation, had parents with lower educational attainment, higher prevalence of interrupted parental employment, had a higher proportion of their households described as not having two biological/adopted parents, lower economic status, and a higher proportion of number of children in the household. Additionally, a lower percentage of the

Hispanic population was found to be currently or consistently insured. All of which have are important determinants of health.(27, 34, 49, 50)

Finally multivariable analysis revealed only 1 measure of health status was associated with both language metrics in a population of Asian and Hispanic children from 9 states. One additional measure of quality was associated with language of interview however no significant association was seen for the same measure when using language of interview. This suggests that neither metric, when controlling for the same covariates, is more likely than the other to be associated with disparities. However, they may best serve as a measure (albeit not perfect) of acculturation. Due to the additional finding significant association to provision of family-centered care, primary language spoken at home may have a slight advantage.

A secondary analysis was completed to assess NQF quality indicator performance differences between both racial groups and to compare both language metrics to the association of NQF indicators within each racial group. Asian children had a lower percentage of their population categorized as overweight/obese, and lower percentage with reported teeth decay/cavities, an lower percentage lacking insurance or without consistent insurance. Among the Asian population, neither language metric demonstrated a difference between English and non-English speaking counterparts. Among the Hispanic population both measures demonstrated that non-English speaking children were more likely to have lower reported physical activity and less likely to receive family centered care.

These data differ from other studies using language to describe health disparities. Study characteristics, outcome variables, and populations varied. Language of interview was used to evaluate non-English language Hispanics to their English speaking counterparts and to non-

Hispanic whites.(17) In both comparisons non-English language interview children were less likely to have a usual source of care or medical visit in the previous year, this association to non-English language of interview was not seen in our study when comparing within the Hispanic population. The study was limited to Arizona and did not incorporate any other acculturation measures. Language of interview was also studied in a nationally representative sample of children with special health care needs and similarly displayed an association to non-English language with lacking usual source of care, lack of family-centered care, inadequate insurance, issues obtaining referrals.(18) Additional measures of acculturation were not considered, answers were taken via either English or Spanish survey only and the population reflected children identified as having special health care needs.

A nationwide study looking at primary language spoken at home compared non-English language spoken at home in Hispanic children to non-Hispanic whites. In this study children from non-English primary language homes were less likely to have a usual source of care, medical home, consistent or concurrent insurance.(15) These associations were not seen in our study. However similar to our study non-English speakers were less likely to receive family-centered care. The study controlled for socio-economic variables and immigrant status.

As mentioned previously, few data exists to guide public health professionals on which language metric to include in population based survey's. One study compared primary language spoken at home to self-report of "level" of language proficiency and reported that using level of English language ability is a better predictor of disparities particularly for individuals who describe their language ability as "not well or not at all". (12) However another study pointed that self-described level of language proficiency may introduce measurement bias due to the subjective

nature of the derived variable and proposed that language of interview may be a better measurement.(19)

NSCH does not collect data on degree of parental self-reported language proficiency however does provide the two language metrics used for the current study to allow comparison of the metrics in similar child populations using nationally validate quality measures. The inclusion of Asian language of interview provided a unique opportunity to study the two metrics in the two fastest growing populations where language measures a complex interaction between the individual and the health care system.

However our study failed to provide evidence that leads to a strong preference of one metric over the other. One potential explanation may be that the most vulnerable of these populations are not included, that being the illegal immigrants or refugees where language is likely to pose the most significant barrier.(15) Additionally, neither of these measures may be sensitive enough to identify those individuals where the degree of language impairment influences care and access issues. Yu et al compared individuals who reported primary language at home to those who did not and further sub-divided language ability for non-English homes into 3 subcategories: speaks English "very", "well", "not well/not at all". Individuals in the lowest proficiency group were noted to have significant differences relative to 4 of the 7 measures, speaks English "well" was associated with 3 of the 7 measures and non-English language of interview or non-English language spoken at home but speaks English "very well" only was associated with seeking health care and/or prescriptions help from other countries.(45) Likewise, a dose response for degree of parental language proficiency and the association to specific access and care measures was seen but not for all measures investigated.(12) As parental language proficiency decreased, the odds of a child having fair/poor health went from 2.6 times for language ability rated as well to 5.2

times for language ability rated as “not at all”. Dose response was also seen for increased odds of bed days for illness and not obtaining care for the child due to issues with care affordability. When compared to parents who had the highest English language proficiency, those describing either “well” or “not very well” had adjusted OR’s significant for seven of 11 outcome and access measures. Those describing “not at all” revealed significant associations in 9 of 11 measures.

In an attempt to look for possible reasons for the low number of associations described in our study the mechanisms by which language influences health and health outcomes was evaluated. Three mechanisms have been proposed by which language poses a barrier to health care which highlight the complexity of using language as a single measure of acculturation.(18, 51) Language ability is linked to key socio-demographic characteristics that can influence health access. As seen with our study, non-English language interview or primary household is associated with lower educational attainment, lower household income, fragmented employment, and lack of insurance. All of these variables have independently been associated with poor health access and outcomes and therefore were controlled for in multivariable analysis.(27, 34, 36, 52) However, as noted by Cheng et al, these factors may actually lie within the causal pathway between language and health quality indicators and therefore their inclusion in the model may mask the impact of language on these quality indices.(53) For example, impaired language ability may lead to lower employment status, lower income and impaired insurance coverage. If this is the case we might expect our levels of association to be biased towards the null in adjusted models. For language of interview the associations to BMI, family centered care, medical home, and usual source of care went from significant to insignificant once the models were adjusted with covariates that included income, employment and poverty level. For

Primary Language Spoken as Home, preventive dental visits, medical home and usual source of care became insignificant after adjustment.

Language also is related to culture and as a measure of acculturation reflects cultural identity however in any model using language as a proxy for acculturation a certain amount of cultural beliefs and perceptions cannot be captured by language proxy alone. Protective factors such as living in a racial/ethnic enclave that supports enculturation and mitigates socio-economic barriers often experienced by U.S. minority groups.(54) These factors were not captured in our analysis.

Finally language ability can serve as a marker for communication ability. Studies have demonstrated that low language ability is often associated with low health literacy which is linked to the ability of individuals to navigate the health care system. A study of adults in California revealed that approximately 45% of those with LEP also reported low health literacy. In contrast only 14% of English proficient adults reported low health literacy.(55) However in adjusted models looking at poor health, "LEP only" predicted poor health status similar to the combination of LEP and low health literacy in the total population, Latino's, Vietnamese and those categorized as "other". In Chinese adults only the combination of low health literacy and low English proficiency predicted poor health. Children must rely on their parents and guardians to be able to understand and implement health information and the how to access the health care system. Health literacy measures were not available in the NSCH database and therefore not included however it may be important to consider for certain health outcomes in racial/ethnic sub- analyses. However ideally, the ability to find one metric that can predict in the most situations should be the goal for population databases.

The availability of language services may be an unmeasured variable that may be accounting for low number of significant associations to language metrics and quality indicators. These data were derived from only 9 states where sufficient numbers of Asian children allowed for racial identification. According to the U.S. Census Bureau the majority of states included in this study have greater than 20% of their states population from non-English language homes.(56) Three of the nine states had 10-19.9% of their population speaking non-English language at home. Fourteen other non-study states have comparable composition however the remaining 28 states have with <10% of their population from Non-English language primary households. Additionally, 40% or more of the population from these 9 states speak English less than very well. The implications are that there is a potential that language services are developed more than states reporting lower proportion on non-English households and may explain the limited associations between language and outcomes in this study. In 2007 only 12 states reimbursed providers for language services.(57) Of these 3 were among the states included in this study. A 4th state from the study frame was reviewing methods to implement reimbursement. However data about the availability and access to language services for health care was not obtained and therefore the assumption that language service availability influenced results cannot be validated.

Limitations

While one of the strengths of the analysis is looking at language measures in the two populations most likely to have their health impacted by language barriers, the inability to separate Hispanic and Asian race by ethnicity is a potential limitation. Data have demonstrated there is a great deal of heterogeneity in outcomes between various ethnic groups who are categorized as Hispanic and

Asian race and results many not be accurately extrapolated to all subpopulations. The NSCH 2007 did not capture race by ethnicity.

The 2007 NSCH expanded the reach into the Asian population by creating translated interviews in four of the main Asian languages. While this likely enhanced the ability to recruit, small sample sizes in states outside of those presented in this study, limited the ability to disclose Asian race in the public data set at the National level and therefore this analysis can only be said to represent the health and health care of Asians and Hispanics within those states studied.

The primary goal was to provide a stable model for adjusted odds ratios to allow comparison between the two language metric however tests of interaction were completed. In 23 of the 28 models run interaction was seen with one or more covariates. No consistency was seen in the modifying variables was seen between models. None of the children health studies using language metrics as a primary independent variable discussed interaction. If the goal of the research is to provide the most accurate association between language metrics and specific outcomes, then effect modification should be considered and reported accordingly.

Data are based on parental report and not validated through objective measurements (e.g. height and weight used to calculate BMI). Additionally the BMI was dichotomized by collapsing the categories into "healthy" versus "overweight/obese". Therefore "underweight" was not considered.

Implications and Recommendations

A number of national health initiatives have been undertaken to improve our understanding of disparities and act on health care system improvements. The key issues surrounding data quality

and integrity are addressed in the Health and Human Service Action Plan to Reduce Racial and Ethnic Disparities.(58) Data serves as the foundation to disparity research and previously mentioned issues surrounding racial and ethnic identification can impact the ability to detect important gaps in quality and access. Additionally, the plan acknowledges the important influence that language plays in striding towards health care parity and calls for national data collection standards that include language.(58) The IOM recommends collecting 2 measures of language which include asking the patient for a self-assessment of language proficiency and the spoken language preferred for healthcare.(59) The committee defines LEP as speaking English "less than very well".(59) Language spoken at home is viewed as insight into the individuals culture which the IOM suggests can be collected in addition to the level of self-perceived English proficiency.

Previous work comparing primary language spoken at home to level of English language proficiency found that parents providing an assessment of their English language ability was more useful than use of English language spoken at home. Based on the HHS recommendations and previous studies, it appears that it is the level of proficiency that may provide the greatest insight into disparities secondary to linguistic challenges. While Primary Language Spoken at Home and Language of Interview may not identify the most linguistically vulnerable population they still serve as a valuable measure of acculturation. This study indicates that these two language measures demonstrate similar levels of association to standardized child health quality metrics and likely can be used interchangeably depending on availability.

Table 2. Characteristics of children based on Language of Interview

Characteristic	Language of Interview: Non-English			Language of Interview: English			Total			
	n=644	*34.3%*	*SE*	n=2066	*65.7%*	*SE*			*SE*	*P value*
Race										
Asian	71	*8.2%*	*2.1*	1042	*44.7%*	*3.1*	*1113*	*32.2%*	*2.3*	<0.0001
Hispanic	573	*91.8%*	*2.1*	1024	*55.3%*	*3.1*	*1597*	*67.8%*	*2.3*	
Age										
0-5 years	272	*42.9%*	*4.9*	707	*37.5%*	*3.0*	*979*	*39.4%*	*2.6*	0.53
6-11 years	200	*30.3%*	*4.1*	669	*35.6%*	*3.0*	*869*	*33.8%*	*2.5*	
12-17 years	172	*26.8%*	*4.2*	690	*26.9%*	*2.6*	*862*	*26.8%*	*2.2*	
% Male	354	*45.1%*	*4.7*	1049	*48.2%*	*3.1*	*1403*	*47.1%*	*2.6*	*0.58*
Generational Status										
1st Generation	118	*17.8%*	*3.9*	101	*5.3%*	*1.1*	*219*	*9.3%*	*1.5*	<0.0001
2nd Generation	334	*80.9%*	*4.0*	821	*53.2%*	*3.5*	*1155*	*62.1%*	*2.9*	
3rd Generation	5	*1.3%*	*1.1*	736	*41.5%*	*3.5*	*741*	*28.6%*	*2.7*	
Highest Level of Household Education										
High School Graduate or Less	435	*76.3%*	*3.9*	310	*23.0%*	*2.9*	*745*	*41.3%*	*2.7*	*<0.0001*
Greater than High School Graduate	194	*23.7%*	*3.9*	1712	*97.0%*	*2.9*	*1906*	*58.7%*	*2.7*	
Poverty Level										
At or below 100% poverty	316	*55.1%*	*4.8*	163	*10.2%*	*1.8*	*479*	*25.6%*	*2.4*	<0.0001
Above 100% to at or below 199% poverty level	188	*21.7%*	*3.6*	276	*17.9%*	*2.6*	*464*	*19.2%*	*2.1*	
Above 200% to at or below 399% poverty level	108	*18.4%*	*3.9*	622	*28.6%*	*2.8*	*730*	*25.1%*	*2.3*	
Above or at 400% poverty level	32	*4.8%*	*1.8*	1005	*43.3%*	*3.0*	*1037*	*30.1%*	*2.3*	
Total Kids in Household										
1	207	*14.2%*	*2.3*	899	*22.6%*	*2.0*	*1106*	*19.7%*	*1.6*	*<0.0099*
2	252	*34.6%*	*4.4*	823	*41.8%*	*3.0*	*1075*	*39.3%*	*2.5*	
3	131	*35.4%*	*4.9*	245	*28.2%*	*3.3*	*376*	*30.7%*	*2.7*	
4+	54	*15.8%*	*4.0*	99	*7.4%*	*1.5*	*153*	*10.3%*	*1.7*	
Family Structure										
Two Parent Step Family	20	*6.0%*	*2.6*	103	*6.9%*	*2.0*	*123*	*6.6.%*	*1.6*	*0.34*
Single Mother, No Father	135	*18.1%*	*3.4*	277	*10.8%*	*1.5*	*412*	*13.3%*	*1.5*	
Other	23	*4.2%*	*2.2*	101	*3.8%*	*1.1*	*124*	*4.0%*	*1.0*	

Two Parent, biological or adopted	464	*71.7%*	*4.3*	1584	*78.5%*	*2.5*	*2048*	*76.1%*	*2.2*	
At least one household member employed ≥ 50 weeks in the previous year	412	*64.1%*	*4.6*	1887	*90.6%*	*1.5*	*2299*	*81.5%*	*2.0*	*<0.0001*
Parents Marital/Cohabitation Status										
No parents in household	11	*1.7%*	*0.9*	40	*2.1%*	*0.7*	*51*	*1.9%*	*0.6*	*0.9*
Neither married or cohabitating	109	*17.1%*	*3.4*	263	*10.5%*	*1.7*	*372*	*12.8%*	*1.6*	
Cohabitating	101	*12.4%*	*3.1*	122	*8.0%*	*1.9*	*223*	*9.5%*	*1.6*	
Married	421	*68.8%*	*4.3*	1638	*79.4%*	*2.5*	*2059*	*75.8%*	*2.2*	
Parents Legally Married	421	*70.0%*	*4.3*	1638	*81.1%*	*2.5*	*2059*	*77.3%*	*2.2*	0.02
Consistently of Health Insurance in the Previous 12 Months	430	*77.6%*	*3.8*	1865	*87.1%*	*2.2*	*2295*	*83.8%*	*1.9*	*0.02*
Currently insured	467	*83.1%*	*3.3*	1945	*93.6%*	*1.3*	*2412*	*90.0%*	*1.4*	*0.0005*
Insurance Type										
Public Insurance (Medicaid, SCHIP)	306	*69.7%*	*4.0*	333	*21.1%*	*2.5*	*639*	*37.9%*	*2.6*	*<0.0001*
Private Health Insurance	143	*13.2%*	*2.6*	1584	*72.5%*	*2.7*	*1727*	*52.0%*	*2.7*	
Currently Uninsured	171	*17.0%*	*3.3*	115	*6.4%*	*1.4*	*286*	*10.1%*	*1.5*	

n reflects total children (unweighted response). Percentages reflect weighted prevalence of children in 9 states studied
SE: Standard error of the weighted percentage

Table 3. Characteristics of children based on Primary Language Spoken at Home

Characteristic	Primary Language Spoken at Home									
	Non-English			English			Total			
	n=963	*47.2%*	*SE*	n=1754	*52.8%*	*SE*			*SE*	*P value*
Race										
Asian	344	*32.5%*	*3.6*	774	*32.1%*	*3.1*	*1118*	*32.3%*	*2.4*	0.94
Hispanic	619	*67.5%*	*3.6*	980	*67.9%*	*3.1*	*1599*	*67.7%*	*2.4*	
Age										
0-5 years	440	*47.3%*	*4.0*	542	*32.6%*	*3.3*	*982*	*39.6%*	*2.6*	0.01
6-11 years	289	*29.4%*	*3.4*	582	*37.7%*	*3.4*	*871*	*33.8%*	*2.5*	
12-17 years	234	*23.3%*	*3.3*	630	*29.7%*	*3.0*	*864*	*26.6%*	*2.2*	
% Male	511	*44.3%*	*3.9*	896	*49.3%*	*3.5*	*1407*	*46.9%*	*2.6*	*0.33*
Generational Status										
1st Generation	159	*16.0%*	*2.9*	60	*3.4%*	*0.9*	*219*	*9.3%*	*1.5*	<0.0001
2nd Generation	556	*83.5%*	*2.9*	601	*43.2%*	*3.8*	*1157*	*62.1%*	*2.9*	
3rd Generation	11	*0.5%*	*0.2*	731	*53.4%*	*3.8*	*742*	*28.6%*	*2.7*	
Highest Level of Household Education										
High School Graduate or Less	479	*62.3%*	*3.7*	268	*22.6%*	*3.1*	*747*	*41.4%*	*2.7*	*<0.0001*
Greater than High School Graduate	466	*37.7%*	*3.7*	1445	*77.4%*	*3.1*	*1911*	*58.6%*	*2.7*	
Poverty Level										
At or below 100% poverty	330	*42.4%*	*4.0*	149	*10.6%*	*2.0*	*479*	*25.6%*	*2.4*	<0.0001
Above 100% to at or below 199% poverty level	243	*22.5%*	*3.3*	223	*16.4%*	*2.8*	*466*	*19.2%*	*2.1*	
Above 200% to at or below 399% poverty level	200	*21.6%*	*3.4*	531	*28.5%*	*3.2*	*731*	*25.3%*	*2.3*	
Above or at 400% poverty level	190	*13.5%*	*2.1*	851	*44.5%*	*3.4*	*1041*	*29.9%*	*2.3*	
Total Kids in Household										
1	361	*18.9%*	*2.3*	747	*20.6%*	*2.1*	*1108*	*19.8%*	*1.6*	*0.71*
2	391	*37.6%*	*3.7*	689	*40.6%*	*3.3*	*1080*	*39.2%*	*2.5*	
3	153	*31.4%*	*4.1*	223	*30.0%*	*3.7*	*376*	*30.7%*	*2.8*	

4+	58	*12.1%*	*3.0*	95	*8.8%*	*1.9*	*153*	*10.3%*	*1.7*	
Family Structure										
Two Parent Step Family	23	*4.6%*	*1.9*	100	*8.4%*	*2.5*	*123*	*6.6%*	*1.6*	*0.55*
Single Mother, No Father	162	*14.3%*	*2.5*	253	*12.4%*	*1.9*	*415*	*13.3%*	*1.5*	
Other	36	*3.8%*	*1.6*	88	*4.2%*	*1.4*	*124*	*4.0%*	*1.1*	
Two Parent, biological or adopted	740	*77.3%*	*3.2*	1313	*75.0%*	*3.1*	*2053*	*76.1%*	*2.2*	
At least one household member employed $\geq$ 50 weeks in the previous year	691	*71.4%*	*3.5*	1612	*90.3%*	*1.9*	*2303*	*81.4%*	*2.0*	*<0.0001*
Parents Marital/Cohabitation Status										
No parents in household	14	*1.5%*	*0.8*	37	*2.3%*	*0.8*	*51*	*1.9%*	*0.6*	*0.29*
Neither married or cohabitating	125	*12.9%*	*2.5*	248	*12.8%*	*2.1*	*373*	*12.8%*	*1.6*	
Cohabitating	118	*12.4%*	*2.7*	108	*7.0%*	*2.0*	*226*	*9.6%*	*1.6*	
Married	703	*73.2%*	*3.5*	1359	*77.9%*	*2.8*	*2062*	*75.7%*	*2.2*	
Parents Legally Married	703	*74.3%*	*3.5*	1359	*79.8%*	*2.8*	*2062*	*77.2%*	*2.2*	0.22
Consistently of Health Insurance in the Previous 12 Months	710	*81.1%*	*2.9*	1592	*86.2%*	*2.7*	*2302*	*83.8%*	*1.9*	*0.20*
Currently insured	764	*85.8%*	*2.5*	1655	*93.7%*	*1.6*	*2419*	*90.0%*	*1.4*	*0.01*
Insurance Type										
Public Insurance (Medicaid, SCHIP)	363	*56.8%*	*3.9*	279	*21.0%*	*2.7*	*642*	*38.0%*	*2.6*	*<0.0001*
Private Health Insurance	375	*28.9%*	*3.4*	1356	*72.7%*	*3.0*	*1731*	*51.9%*	*2.7*	
Currently Uninsured	193	*14.3%*	*2.5*	93	*6.3%*	*1.6*	*286*	*10.1%*	*1.5*	

n reflects total children (unweighted response). Percentages reflect weighted prevalence of children in 9 states studied

SE: Standard error of the weighted percentage

Table 4. Characteristics of Children by Race, 9 States

Characteristic	Asian			Hispanic			Total			
	n=1119	*32.2%*	*SE*	n=1601	*67.8%*	*SE*			*SE*	*P value*
English Language										
Interview	1042	*91.2%*	*2.1*	1024	*53.6%*	*3.3*	*2066*	*65.7%*	*2.6*	<0.0001
Primary Language Spoken At Home	774	*52.6%*	*4.3*	980	*53.0%*	*3.3*	*1754*	*52.8%*	*2.6*	0.94
Age										
0-5 years	380	*37.6%*	*4.1*	603	*40.3%*	*3.3*	*983*	*39.4%*	*2.6*	0.20
6-11 years	359	*39.4%*	*4.3*	513	*31.0%*	*2.9*	*872*	*33.7%*	*2.5*	
12-17 years	380	*23.0%*	*2.9*	485	*28.7%*	*3.0*	*865*	*26.9%*	*2.2*	
% Male	557	*46.0%*	*4.2*	851	*47.6%*	*3.3*	*1408*	*47.1%*	*2.6*	*0.78*
Generational Status										
1st Generation	116	*11.3%*	*2.1*	103	*8.1%*	*2.0*	*219*	*9.3%*	*1.5*	<0.0001
2nd Generation	582	*76.8%*	*3.2*	577	*53.7%*	*3.9*	*1159*	*62.2%*	*2.9*	
3rd Generation	263	*12.0%*	*2.5*	479	*38.2%*	*3.8*	*742*	*28.5%*	*2.7*	
Highest Level of Household Education										
High School Graduate or Less	126	*18.4%*	*3.7*	621	*52.3%*	*3.3*	*747*	*41.2%*	*2.7*	*<0.0001*
Greater than High School Graduate	981	*81.6%*	*3.7*	933	*47.7%*	*3.3*	*1914*	*58.7%*	*2.7*	
Poverty Level										
At or below 100% poverty	68	*12.6%*	*3.4*	411	*31.6%*	*3.1*	*479*	*25.5%*	*2.4*	<0.0001
Above 100% to at or below 199% poverty level	151	*13.2%*	*3.2*	315	*22.0%*	*2.7*	*466*	*19.2%*	*2.1*	
Above 200% to at or below 399% poverty level	308	*24.3%*	*3.7*	424	*25.6%*	*2.9*	*732*	*25.2%*	*2.3*	
Above or at 400% poverty level	592	*49.8%*	*4.2*	451	*20.7%*	*2.6*	*1043*	*30.1%*	*2.3*	
Total Kids in Household										
1	509	*27.3%*	*3.2*	601	*16.1%*	*1.7*	*1110*	*19.7%*	*1.5*	*0.0016*
2	479	*45.9%*	*4.2*	602	*36.3%*	*3.1*	*1081*	*39.4%*	*2.5*	
3	104	*21.1%*	*4.4*	272	*35.2%*	*3.4*	*376*	*30.6%*	*2.7*	
4+	27	*5.7%*	*2.4*	126	*12.4%*	*2.3*	*153*	*10.3%*	*1.7*	
Family Structure										
Two Parent Step Family	23	*1.0%*	*0.4*	100	*9.2%*	*2.3*	*123*	*6.6%*	*1.6*	*<0.0001*
Single Mother, No Father	89	*5.2%*	*1.2*	326	*17.2%*	*2.2*	*415*	*13.3%*	*1.5*	
Other	45	*2.2%*	*0.7*	79	*4.8%*	*1.5*	*124*	*4.0%*	*1.0*	
Two Parent, biological or adopted	961	*91.6%*	*1.4*	1094	*68.8%*	*3.1*	*2055*	*76.1%*	*2.2*	

At least one household member employed ≥ 50 weeks in the previous year	1013	*88.1%*	*2.4*	1293	*78.3%*	*2.7*	*2306*	*81.5%*	*2.0*	*0.01*
Parents Marital/Cohabitation Status										
No parents in household	9	*1.0%*	*0.5*	42	*2.4%*	*0.8*	*51*	*1.9%*	*0.6*	*<0.0001*
Neither married or cohabitating	81	*4.3%*	*1.1*	292	*16.8%*	*2.3*	*373*	*12.8%*	*1.6*	
Cohabitating	30	*5.0%*	*2.6*	196	*11.7%*	*2.1*	*226*	*9.5%*	*1.6*	
Married	997	*89.7%*	*2.8*	1068	*69.2%*	*2.9*	*2065*	*75.8%*	*2.2*	
Parents Legally Married	997	*90.6%*	*2.8*	1068	*70.9%*	*2.9*	*2065*	*77.3%*	*2.2*	<0.0001
Currently Insured	1057	*96.4%*	*0.8*	1365	*87.1%*	*2.0*	*2422*	*90.0%*	*1.4*	*<0.0001*
Consistently of Health Insurance in the Previous 12 Months	1026	*95.1%*	*0.9*	1279	*78.7%*	*2.7*	*2305*	*83.9%*	*1.9*	*<0.0001*
Insurance Type										
Public Insurance (Medicaid, SCHIP)	139	*18.8%*	*3.3*	504	*46.7%*	*3.3*	*643*	*37.9%*	*2.6*	*<0.0001*
Private Health Insurance	892	*77.5%*	*3.4*	841	*40.3%*	*3.2*	*1733*	*52.0%*	*2.6*	
Currently Uninsured	56	*3.7%*	*0.8*	230	*13.0%*	*2.1*	*286*	*10.1%*	*1.5*	

n reflects total children (unweighted response). Percentages reflect weighted prevalence of children in 9 states studied

SE: Standard error of the weighted percentage

Table 5. Association of Select NQF Child Health Quality Indicators to Language of Interview

Characteristic	Unadjusted Odds Ratio			Adjusted Odds Ratio		
	Odds Ratio	95% C.I.[†]	*P value*[‡]	Odds Ratio	95% C.I.[†]	*P value*[‡]
Physical and Oral Health						
BMI ≥ 85th Percentile	2.72	(1.18, 6.28)	0.02	0.82	(0.24, 2.78)	0.75
Exposure to Household Smoke	0.28	(0.08, 1.02)	*0.05*	0.39	(0.02, 7.30)	*0.53*
Child with h/o decayed teeth/cavities	1.44	(0.833, 2.49)	*0.19*	0.84	(0.36, 1.94)	*0.68*
Child with hx of physical activity ≤ 3times/wk	5.17	*(2.88, 9.26)*	*<0.0001*	5.59	*(2.48, 12.59)*	*<0.0001*
Quality of Care						
Children who did not receive preventive medical visits	0.95	*(0.52, 1.73)*	*0.87*	0.78	*(0.30, 2.05)*	*0.62*
Children who did not receive preventive dental visits	1.57	*(0.92, 2.69)*	*0.10*	0.81	*(0.36, 1.78)*	*0.59*
Children who did not receive family-centered care	1.83	*(1.12, 2.98)*	*0.02*	1.40	*(0.66, 2.95)*	*0.38*
Lacks medical home	2.18	*(1.31, 3.63)*	*0.0028*	1.23	*(0.60, 2.51)*	*0.57*
Children who did not receive effective care coordination when needed	0.62	*(0.30, 1.30)*	*0.21*	0.45	*(0.16, 1.28)*	*0.13*
Children who had problems obtaining referrals when needed	2.79	*(0.60, 12.86)*	*0.19*	1.33	*(0.27, 6.51)*	*0.73*
Children without a usual source of care when sick	3.60	*(1.77, 7.33)*	*0.0004*	1.30	*(0.53, 3.21)*	*0.57*
Children whose parent(s) did not complete std developmental screen	0.93	*(0.36, 2.4)*	*0.88*	0.84	*(0.26, 2.73)*	*0.77*
Access						
No Current health insurance	3.00	*(1.59, 5.66)*	*0.0007*	1.32	*(0.53, 3.30)*	*0.55*
Children without consistent health insurance coverage in past 12m	1.95	*(1.10, 3.46)*	*0.02*	0.53	*(0.19, 1.47)*	*0.22*

The model includes: age, race, gender, generational status, total kids in household, employment status of parents in past year, legal marital status of parents, insurance. Note models with insurance as dependent variable do not include insurance covariate.

[†] C.I. Confidence interval

‡ Wald Chi-Square *P* value

Table 6. Association of Select NQF Child Health Quality Indicators to Primary Language Spoken at Home

Characteristic	Unadjusted Odds Ratio			Adjusted Odds Ratio		
	Odds Ratio	95% C.I.†	*P value*‡	Odds Ratio	95% C.I.†	*P value*‡
Physical and Oral Health						
BMI ≥ 85th Percentile	1.57	(0.72, 3.43)	*0.26*	*0.76*	*(0.26, 2.20)*	*0.61*
Exposure to Household Smoke	0.50	(0.18, 1.39)	*0.18*	*0.42*	*(0.10, 1.82)*	*0.24*
Child with h/o decayed teeth/cavities	1.11	0.66, 1.88)	*0.69*	*0.88*	*(0.45, 1.74)*	*0.72*
Child with hx of physical activity ≤ 3times/wk	4.13	*(2.42, 7.05)*	*<0.0001*	2.31	*(1.15, 4.23)*	*0.02*
Quality of Care						
Children who did not receive preventive medical visits	0.74	*(0.37, 1.32)*	*0.28*	0.40	*(0.13, 1.24)*	*0.11*
Children who did not receive preventive dental visits	1.82	*(1.10, 3.02)*	*0.02*	1.33	*(0.75, 2.38)*	*0.33*
Children who did not receive family-centered care	2.11	*(1.34, 3.30)*	*0.0012*	2.09	*(1.14, 3.83)*	*0.02*
Lacks medical home	2.03	*(1.29, 3.21)*	*0.0023*	1.73	*(0.96, 3.10)*	*0.07*
Children who did not receive effective care coordination when needed	0.57	*(0.28, 1.12)*	*0.10*	0.43	*(0.17, 1.14)*	*0.09*
Children who had problems obtaining referrals when needed	1.50	*(0.52, 4.34)*	*0.45*	2.77	*(0.80, 9.56)*	*0.11*
Children without a usual source of care when sick	2.68	*(1.29, 5.60)*	*0.01*	1.19	*(0.46, 3.15)*	*0.72*
Children whose parent(s) did not complete std developmental screen	1.41	*(0.58, 3.41)*	*0.45*	1.42	*(0.52, 3.88)*	*0.49*
Access						
No Current health insurance	2.46	*(1.27, 4.78)*	*0.01*	1.66	*(0.67, 4.13)*	*0.27*
Children without consistent health insurance coverage in past 12m	1.46	*(0.82, 2.58)*	*0.20*	0.57	*(0.24, 1.37)*	*0.21*

The model includes: age, race, gender, generational status, total kids in household, employment status of parents in past year, legal marital status of parents, insurance. Note models with insurance as dependent variable do not include insurance covariate.

† C.I. Confidence interval

‡ Wald Chi-Square *P* value

Table 7. Select NQF Child Health Quality Indicators Performance by Race

Characteristic	Asian			Hispanic			Total			
	n=1119	*32.2%*	*SE*	n=1601	*67.8%*	*SE*			*SE*	*P value*
Physical and Oral Health										
BMI ≥ 85th Percentile	100	*23.3%*	*5.9*	215	*43.0%*	*5.6*	*315*	*36.5%*	*4.3*	0.02
Exposure to Household Smoke	25	*1.4%*	*0.5*	43	*1.3%*	*0.3*	*68*	*1.3%*	*0.3*	0.90
Child with h/o decayed teeth/cavities	213	*17.8%*	*3.6*	352	*27.9%*	*3.2*	*565*	*24.8%*	*2.5*	0.04
Child with hx of physical activity ≤ 3times/wk	293	*39.2%*	*5.2*	444	*47.8%*	*4.1*	*737*	*45.0%*	*3.3*	0.20
Quality of Care										
Children who did not receive preventive medical visits	118	*12.8%*	*3.1*	171	*9.6%*	*1.7*	*289*	*10.6%*	*1.5*	*0.33*
Children who did not receive preventive dental visits	215	*18.0%*	*2.4*	366	*24.9%*	*3.0*	*581*	*22.8%*	*2.3*	0.07
Children who did not receive family-centered care	446	*47.5%*	*4.4*	679	*47.3%*	*3.4*	*1125*	*47.4%*	*2.7*	0.97
Lacks medical home	535	*50.4%*	*4.3*	840	*57.9%*	*3.4*	*1375*	*55.5%*	*2.7*	0.18
Children who did not receive effective care coordination when needed	120	*30.0%*	*5.9*	257	*38.3%*	*5.0*	*377*	*36.1%*	*4.0*	0.28
Children who had problems obtaining referrals when needed	23	*15.4%*	*4.7*	64	*22.5%*	*6.8*	*87*	*20.4%*	*5.0*	0.37
Children without a usual source of care when sick	72	*8.2%*	*2.9*	186	*15.5%*	*2.5*	*258*	*13.1%*	*1.9*	*0.09*
Children whose parent(s) did not complete std developmental screen	261	*84.0%*	*4.6*	365	*81.6%*	*4.1*	*626*	*82.2%*	*3.3*	0.70
Access										
No Current health insurance	56	*3.6%*	*0.8*	230	*12.9%*	*2.0*	*286*	*10.0%*	*1.4*	<0.0001
Children without consistent health insurance coverage in past 12m	83	*4.9%*	*0.9*	318	*21.3%*	*2.7*	*401*	*16.1%*	*1.9*	*0.0001*

n reflects total children (unweighted response). Percentages reflect weighted prevalence of children in 9 states studied

SE: Standard error of the weighted percentage

Table 8. Association of Select NQF Child Health Quality Indicators to Language of Interview by Race (compared to English counterparts)

Characteristic	Asian Non-English			Hispanic Non-English		
	Adjusted Odds Ratio	95% C.I.†	*P value*‡	Adjusted Odds Ratio	95% C.I.†	*P value*‡
Physical and Oral Health						
BMI ≥ 85th Percentile	4.30	(0.94, 20.05)	*0.06*	0.40	(0.10, 1.54)	0.18
Exposure to Household Smoke	2.11	(0.50, 8.84)	*0.31*	0.290	(0.024, 3.51)	0.33
Child with h/o decayed teeth/cavities	2.11	(0.68, 6.60)	*0.20*	0.63	(0.24, 1.64)	0.34
Child with hx of physical activity ≤ 3times/wk	2.70	*(0.85, 8.58)*	*0.09*	6.93	*(2.61, 18.4)*	*0.0001*
Quality of Care						
Children who did not receive preventive medical visits	2.28	*(0.71, 7.32)*	*0.93*	0.96	*(0.23, 2.92)*	*0.95*
Children who did not receive preventive dental visits	0.32	*(0.07, 1.37)*	*0.12*	0.99	*(0.33, 3.0)*	0.99
Children who did not receive family-centered care	0.81	*(0.23, 2.90)*	*0.71*	2.72	*(1.07, 6.91)*	*0.04*
Lacks medical home	0.65	*(0.19, 2.25)*	*0.50*	1.97	*(0.80, 4.86)*	*0.14*
Children who did not receive effective care coordination when needed	0.29	*(0.06, 1.48)*	*0.14*	0.44	*(0.13, 1.56)*	*0.20*
Children who had problems obtaining referrals when needed	NE			1.48	*(0.23, 9.66)*	*0.68*
Children without a usual source of care when sick	1.41	*(0.39, 5.12)*	*0.60*	2.84	*(0.79, 10.23)*	*0.11*
Children whose parent(s) did not complete std developmental screen	NE			0.71	*(0.13, 3.89)*	*0.69*
Access						
No Current health insurance	2.28	*(0.54, 9.61)*	*0.26*	1.06	*(0.35, 3.24)*	*0.91*
Children without consistent health insurance coverage in past 12m	2.50	*(0.75, 8.36)*	*0.14*	0.34	*(0.12, 1.05)*	*0.06*

The model includes: age, gender, generational status, total kids in household, employment status of parents in past year, legal marital status of parents, insurance. Note models with
insurance as dependent variable do not include insurance covariate.

† C.I. Confidence interval

‡ Wald Chi-Square *P* value

NE: Not estimable due to small sample size

Table 9. Association of Select NQF Child Health Quality Indicators to Language Spoken at Home by Race (compared to English counterparts)

Characteristic	Asian Non-English			Hispanic Non-English		
	Adjusted Odds Ratio	95% C.I.†	*P value*‡	Adjusted Odds Ratio	95% C.I.†	*P value*‡
Physical and Oral Health						
BMI ≥ 85th Percentile	2.40	(0.57, 10.02)	*0.23*	0.60	(0.15, 2.48)	0.48
Exposure to Household Smoke	0.20	(0.03, 1.51)	*0.12*	0.29	(0.02, 3.51)	0.33
Child with h/o decayed teeth/cavities	1.72	(0.71, 4.18)	*0.23*	0.52	(0.20, 1.32)	0.17
Child with hx of physical activity ≤ 3times/wk	1.05	*(0.42, 2.56)*	*0.91*	5.00	*(2.12, 11.79)*	0.0002
Quality of Care						
Children who did not receive preventive medical visits	0.77	*(0.27, 2.21)*	*0.62*	0.28	*(0.06, 1.43)*	0.13
Children who did not receive preventive dental visits	1.10	*(0.53, 2.27)*	*0.80*	1.45	*(0.54, 3.89)*	0.47
Children who did not receive family-centered care	1.60	*(0.76, 3.37)*	*0.21*	2.96	*(1.15, 7.62)*	0.02
Lacks medical home	1.27	*(0.62, 2.59)*	*0.51*	2.04	*(0.86, 4.82)*	0.11
Children who did not receive effective care coordination when needed	0.95	*(0.27, 3.31)*	*0.94*	0.28	*(0.79, 1.02)*	0.05
Children who had problems obtaining referrals when needed	NE			1.94	*(0.31, 11.97)*	0.48
Children without a usual source of care when sick	0.55	*(0.18, 1.72)*	*0.31*	1.83	*(0.57, 5.86)*	0.31
Children whose parent(s) did not complete std developmental screen	2.73	*(0.75, 9.87)*	*0.13*	0.77	*(0.16, 3.77)*	0.75
Access						
No Current health insurance	2.73	*(0.75, 9.87)*	*0.13*	1.59	*(0.50, 5.06)*	0.44
Children without consistent health insurance coverage in past 12m	2.68	*(0.72, 9.99)*	*0.14*	0.37	*(0.13, 1.10)*	0.07

The model includes: age, gender, generational status, total kids in household, employment status of parents in past year, legal marital status of parents, insurance. Note models with insurance as dependent variable do not include insurance covariate.

† C.I. Confidence interval

‡ Wald Chi-Square p-value

NE: Not estimatble due to small sample size

References

1. Hoeffel EM, Rastogi S, Kim MO, et al. The Asian Population: 2010. In: Commerce USDo, ed. *2010 Census Briefs*. Washington D.C.: U.S. Census Bureau, 2012.
2. United States Census Bureau. U.S. Census Bureau projections show a slower growing, older, more diverse nation a half century from now. Washington, DC: U.S. Department of Commerce, 2012.
3. Ennis SR, Rios-Vargas M, Albert NG. The Hispanic Population: 2010 [electronic article]. *2010 Census Briefs.* Advance Access: March 6, 2013.
4. U.S. Census Bureau. ACS DEMOGRAPHIC AND HOUSING ESTIMATES 2011 American Community Survey 1-Year Estimates [electronic article].
5. U.S. Census Bureau. Table 7. Nativity and citizenship status by sex, hispanic origin, and race: 2011 [electronic article]. *Current Population Survey, Annual Social and Economic Supplement, 2011*
6. U.S. Census Bureau. Table 4. Nativity and citizenship status by sex, for asian alone or in combination and white alone, not hispanic: 2011 [electronic article]. Advance Access: March 2013.
7. Cheng E, Chen A, Cunningham W. Primary Language and Receipt of Recommended Health Care Among Hispanics in the United States. *Journal of general internal medicine* 2007;22(2):283-8.
8. Woloshin S, Schwartz L, Katz S, et al. Is language a barrier to the use of preventive services? *Journal of general internal medicine* 1997;12(8):472-7.
9. Clemans-Cope L, Kenney G. Low income parents' reports of communication problems with health care providers: Effects of language and insurance. *Public health reports (Washington, DC : 1974)* 2007;122(2):206-16.
10. Flores G, Rabke-Verani J, Pine W, et al. The importance of cultural and linguistic issues in the emergency care of children. *Pediatric Emergency Care* 2002;18(4):271-84.
11. Hampers LC, Cha S, Gutglass DJ, et al. Language barriers and resource utilization in a pediatric emergency department. (0031-4005 (Print)).
12. Flores G, Abreu M, Tomany-Korman SC. Limited english proficiency, primary language at home, and disparities in children's health care: how language barriers are measured matters. *Public health reports (Washington, DC : 1974)* 2005;120(4):418-30.
13. Cohen AL, Christakis DA. Primary language of parent is associated with disparities in pediatric preventive care. (0022-3476 (Print)).
14. Grieco EM, Acosta YD, de la Cruz GP, et al. The foreign-born population in the United States: 2010 [electronic article]. *American Community Survey Reports.* Advance Access: March 3, 2013.
15. Avila RM, Bramlett MD. Language and Immigrant Status Effects on Disparities in Hispanic Children's Health Status and Access to Health Care. *Maternal and child health journal* 2012.
16. Flores G, Tomany-Korman SC. The language spoken at home and disparities in medical and dental health, access to care, and use of services in US children. *Pediatrics* 2008;121(6):e1703-14.
17. Kirkman-Liff B, Mondragon D. Language of interview: relevance for research of southwest Hispanics. *American journal of public health* 1991;81(11):1399-404.
18. Yu SM, Nyman RM, Kogan MD, et al. Parent's language of interview and access to care for children with special health care needs. *Ambulatory pediatrics : the official journal of the Ambulatory Pediatric Association* 2004;4(2):181-7.

19. Lee S, Nguyen HA, Tsui J. Interview language: a proxy measure for acculturation among Asian Americans in a population-based survey. *Journal of immigrant and minority health / Center for Minority Public Health* 2011;13(2):244-52.
20. National Quality Forum. Child health and health care quality measures from the NSCH and NS-CSHCN endorsed for use by The National Quality Forum [electronic article]. Advance Access: March 6, 2013.
21. United States Census Bureau. The Asian alone or in combination population in the United States (Table 1) 2011. (http://www.census.gov/population/race/data/ppl-ac11.html). (Accessed).
22. Islam NSP, Khan S, Kwon S, et al. Methodological Issues in the Collection, Analysis, and Reporting of Granular Data in Asian American Populations: Historical Challenges and Potential Solutions. *Journal of Health Care for the Poor and Underserved* 2010;21(4):1354-81.
23. Chen MS, Jr., Hawks BL. A debunking of the myth of healthy Asian Americans and Pacific Islanders. *American journal of health promotion : AJHP* 1995;9(4):261-8.
24. Holland AT, Palaniappan LP. Problems with the collection and interpretation of Asian-American health data: omission, aggregation, and extrapolation. *Annals of epidemiology* 2012;22(6):397-405.
25. U.S. Census Bureau. Table 8. Hispanic Population by Age and Sex1: 2011 [electronic article]. *US Census Bureau, Current Population Survey, Annual Social and Economic Supplement, 2011.* Advance Access: March 2013.
26. U.S. Census Bureau. Table 9. Non-Hispanic White Alone Population by Age and Sex1: 2011 [electronic article]. *US Census Bureau, Current Population Survey, Annual Social and Economic Supplement, 2011.* Advance Access: March 2013.
27. Flores G, Bauchner H, Feinstein AR, et al. The impact of ethnicity, family income, and parental education on children's health and use of health services. (0090-0036 (Print)).
28. Flores G F-AEBO, et al. The health of latino children: Urgent priorities, unanswered questions, and a research agenda. *JAMA : the journal of the American Medical Association* 2002;288(1):82-90.
29. Lara M, Gamboa C, Kahramanian MI, et al. ACCULTURATION AND LATINO HEALTH IN THE UNITED STATES: A Review of the Literature and its Sociopolitical Context. *Annual Review of Public Health* 2005;26(1):367-97.
30. Perez VH, Fang H, Inkelas M, et al. Access to and Utilization of Health Care by Subgroups of Latino Children. *Medical Care* 2009;47(6):695-9 10.1097/MLR.0b013e318190d9e4.
31. U.S. Census Bureau. Language spoken at home [electronic article]. *US Census Bureau, 2011 American Community Survey.* Advance Access: March 2013.
32. Wen M. Racial and ethnic differences in general health status and limiting health conditions among American children: parental reports in the 1999 national survey of America's families. *Ethnicity & health* 2007;12(5):401-22.
33. Lau M, Lin H, Flores G. Racial/ethnic disparities in health and health care among U.S. adolescents. *Health services research* 2012;47(5):2031-59.
34. Flores G, Tomany-Korman SC. Racial and ethnic disparities in medical and dental health, access to care, and use of services in US children. *Pediatrics* 2008;121(2):e286-98.
35. Huang KY, Calzada E, Cheng S, et al. Physical and mental health disparities among young children of Asian immigrants. *The Journal of pediatrics* 2012;160(2):331-6 e1.
36. Yu SM, Huang ZJ, Singh GK. Health Status and Health Services Utilization Among US Chinese, Asian Indian, Filipino, and Other Asian/Pacific Islander Children. *Pediatrics* 2004;113(1):101-7.

37. Shi L, Stevens GD. Disparities in access to care and satisfaction among U.S. children: the roles of race/ethnicity and poverty status. *Public health reports (Washington, DC : 1974)* 2005;120(4):431-41.
38. Berdahl T, Owens PL, Dougherty D, et al. Annual Report on Health Care for Children and Youth in the United States: Racial/Ethnic and Socioeconomic Disparities in Children's Health Care Quality. *Academic Pediatrics* 2010;10(2):95-118.
39. Palinkas LA, Pickwell SM. Acculturation as a risk factor for chronic disease among Cambodian refugees in the United States. *Social Science & Medicine* 1995;40(12):1643-53.
40. Salant T, Lauderdale DS. Measuring culture: a critical review of acculturation and health in Asian immigrant populations. *Social science & medicine (1982)* 2003;57(1):71-90.
41. Thomson MD, Hoffman-Goetz L. Defining and measuring acculturation: A systematic review of public health studies with Hispanic populations in the United States. *Social Science & Medicine* 2009;69(7):983-91.
42. Alegria M. The challenge of acculturation measures: What are we missing? A commentary on Thomson & Hoffman-Goetz. *Social Science & Medicine* 2009;69(7):996-8.
43. Carter-Pokras O, Bethune L. Defining and measuring acculturation: A systematic review of public health studies with hispanic populations in the united states. A commentary on Thomson and Hoffman-Goetz. *Social Science & Medicine* 2009;69(7):992-5.
44. The Urban Institute. Data from the Integrated Publich Use Microdata Series datasets drawn from the 2007 and 2008 American Community Survey [electronic article].
45. Yu SM, Huang ZJ, Schwalberg RH, et al. Parental English Proficiency and Children's Health Services Access. *American journal of public health* 2006;96(8):1449-55.
46. Blumberg SJ, Foster EB, Frasier AM, et al. Design and operation of the National Survey of Children's Health, 2007 [electronic article]. *Vital Stat 1 (55).*
47. Child and Adolescent Health Measurement Initiative (CAHMI). 2007 National Survey of Children's Health. SAS Code for data users: Child Health Indicators and Subgroups. [electronic article].
48. Child and Adolescent Health Measurement Initiative (CAHMI). DRC Indicator Dataset: 2007 National Survey of Children's Health [electronic article]. Advance Access: March 1, 2013.
49. Gerald L. Social determinants of health. *North Carolina medical journal* 2012;73(5):353-7.
50. Braveman P, Egerter S. Overcoming obstacles to health: Report from the Robert Wood Johnson Foundation to the Commission to Build a Healthier America. [electronic article]. Advance Access: March 20, 2013.
51. Woloshin S, Schwartz LM, Katz SJ, et al. Is language a barrier to the use of preventive services? (0884-8734 (Print)).
52. Shone LP, Dick AW, Klein JD, et al. Reduction in racial and ethnic disparities after enrollment in the State Children's Health Insurance Program. *Pediatrics* 2005;115(6):e697-705.
53. Cheng Em Fau - Chen A, Chen A Fau - Cunningham W, Cunningham W. Primary language and receipt of recommended health care among Hispanics in the United States. (1525-1497 (Electronic)).
54. Mendoza FS. Health disparities and children in immigrant families: a research agenda. *Pediatrics* 2009;124 Suppl 3:S187-95.
55. Sentell T, Braun KL. Low health literacy, limited English proficiency, and health status in Asians, Latinos, and other racial/ethnic groups in California. *Journal of health communication* 2012;17 Suppl 3:82-99.

56. Shin HB, Kominski RA. Language Use in the United States: 2007 [electronic article]. *American Community Survey Reports.* Advance Access: March 24, 2013.
57. Youdelman M. Medicaid/SCHIP Reimbursement Models for Language Services (2007 Update) [electronic article]. Advance Access: March 26, 2013.
58. U.S. Department of Health and Human Services, Office of Minority Health. A nation free of disparities in health and health care [electronic article]. *HHS Action Plan to Reduce Racial and Ethnic Health Disparities.* Advance Access: February 15 2013.
59. Institute of Medicine. IOM Subcommittee on Standardized Collection of Race/Ethnicity Data for Healthcare Quality. Race, Ethnicity, and Language Data: Standardization for Health Care Quality Improvement [electronic article]. Advance Access: March 25, 2013.

Appendix I. NQF Quality Indicators: Dependent Variables

Health Domain Measured/ NQF Description	**NSCH Description**	**NQF Target Age**
Physical and Oral Health		
Child Overweight or Obesity Status Based on Body-Mass-Index (BMI)	Derived. BMI for age classification for sample child	10 - 17 yrs
Children who are exposed to secondhand smoke in the home	Indicator value. Whether tobacco smoker lives in household and, if so, exposure to second smoke inside home (non smoking household/smoker present but no smoking in household/smoker present and smoking occurs inside)	0 - 17 yrs
Children who have dental decay or cavities	To the best of your knowledge, did [SC] have decayed teeth or cavities within the past 6 months?	1 - 17 yrs
Children who engage in weekly physical activity	Indicator value. Physical activity, number of days in past week	6 - 17 yrs
Quality of Care		
Children who receive preventive medical visits	Indicator value. Visited a health care professional for preventive services, past 12 months	0 - 17 yrs
Children who receive preventive dental care	Indicator value. Visited a dentist for preventive services, past 12 months, age 1-17	1 - 17 yrs
Children who receive family-centered care	Indicator value. Children whose health care providers meet all criteria for family centered care, had at least one health service in past 12 months	0 - 17 yrs
Measure of medical home for children and adolescents	Indicator value. Children whose health care meets criteria for all 5 components of medical home: personal doctor or nurse, usual source of care, family centered care, getting referrals when needed, and effective care coordination when needed	0 - 17 yrs
Children who receive effective care coordination of healthcare services when needed	Indicator value. Received effective care coordination help when needed	0 - 17 yrs
Children who had problems obtaining referrals when needed	Indicator value. Problems getting referrals needed to see doctors or receive services, past 12 months	0 - 17 yrs
Children with a usual source of care when sick	Indicator value. Children who have a usual place for care when sick or need health advice	0 - 17 yrs
Children whose parent(s) completed a standardized developmental screening tool	Indicator value. Received complete standardized developmental and behavioral screening during a health care visit, age 10 months-5 years	10m - 5 yrs
Insurance (Access Indicator)		
Children who have adequate insurance for optimal health	Current health insurance coverage - currently insured or not currently insured	0 - 17 yrs
Children with consistent health insurance coverage in the past 12 months	Consistency of insurance coverage during past 12 months	0 - 17 yrs

Appendix II. SAS Code

```
OPTIONS NOFMTERR;
LIBNAME thesis 'H:\Thesis\Data';

/*create smaller database with only key variables*/;
data thesis1;
set thesis.nsch2007drc;
keep NSCHWT IDNUMR STATE MSA_STAT TOTKIDS4 AGEYR_CHILD age3_07 SEX RELATION PLANGUAGE K2Q01
K2Q01_D BMICLASS ind6_4_07
K2Q53 ind1_5_07 famcent ind4_8_07 carehelp ind4_9c_07 usuals ind4_16_07 unins_07 insyr_07
OTH_LANG K11Q02 hispanic
hisplang_07 K11Q30 K11Q31 K11Q32 K11Q33 EDUC_MOMR EDUC_DADR EDUC_RESPR povlev4_07
famstruct_07 K11Q504 hisplang_07
MARCOH_PAR MARSTAT_PAR ind6_03_07 ind6_3a_07 ind4_1_07 ind4_2_07 ind4_3_07 carecoor
ind4_9a_07 ind4_9d_07
ind4_9c_07 ind4_16_07 ind4_12_07 uninsyr_07 instype_07 race5_07 raceasia raceaian race_HI
ind6_4A_07 ind4_9b_07 K11Q50 ind6_4_07 racer
K11Q34AR K11Q35AR run;

proc contents data=thesis1;
run;

/*coded, formatted and labeled variables*/;

data thesis2;
set thesis1;
if K11Q34AR > 9                        then MomYrUS=0;
if K11Q34AR <10                        then MomYrUS=1;
if K11Q34AR in (.M, .)            then MomYrUS=.;
if K11Q31=0 and K11Q30=0 then parentFS=0;/*both parents not US born*/
if K11Q31=0 and K11Q30=1 then parentFS=0;/*1 parent US born*/
if K11Q31=1 and K11Q30=0 then parentFS=0;/*1 parent US born*/
if K11Q31=1 and K11Q30=1 then parentFS=1;/*Us born parents*/
if K11Q31 in (.L, .M, .P, 6, 7) then parentFS=.;
if K11Q30 in (.L, .M, .P, 6, 7) then parentFS=.;
if EDUC_DADR in (.L, .M, .P, 6, 7)then DadEd=.;
if EDUC_DADR=2 then DADEd=1;
if EDUC_DADR=1 then DADEd=1;
if EDUC_DADR=3 then DADEd=2;
if EDUC_MOMR in (.L, .M, .P, 6, 7)then MomEd=.;
if EDUC_MOMR=2 then MomEd=1;
if EDUC_MOMR=1 then MomEd=1;
if EDUC_MOMR=3 then MomEd=2;
if race5_07=1 and raceasia in (1, 2, 5) then race4=2;/*hispanic*/
if race5_07=5 and raceasia=3 then race4=1;/*asian*/
if race5_07=. and raceasia=3 then race4=1;/*asian*/
run;


data thesis3;
set thesis2;
if DadEd=. and MomEd=.           then ParEd=.;
if DadEd=2 and MomEd=2           then ParEd=2;
If DadEd=1 and MomEd=1           then ParEd=1;
If DadEd=2 and MomEd=1           then ParEd=2;
If MomEd=2 and DadEd=1           then ParEd=2;
```

```
If DadEd=2 and MomEd=.           then ParEd=2;
if MomEd=2 and DadEd=.           then ParEd=2;
if DadEd=1 and MomEd=.           then ParEd=1;
if MomEd=1 and DadEd=.           then ParEd=1;
If K11Q33=0 and parentFS=0  then Gen=1;/*child and parents not US born, 1st Gen*/
If K11Q33=1 and parentFS=0  then Gen=2;/*child born in US, 1 or both parents not, 2nd gen*/
If K11Q33=1 and parentFS=1 then Gen=3;/*child and both parents US born, 3rd gen*/
If K11Q33 in (.P, 6, 7) then Gen=.;
If K11Q33=. and parentFS=. then Gen=.;
If K11Q33=0 and parentFS=. then Gen=.;
If K11Q33=1 and parentFS=. then Gen=.;
if BMICLASS=.                          then BMI=.;
if BMICLASS=.M                         then BMI=.;
if BMICLASS=.N                         then BMI=.;
if BMICLASS=2                          then BMI=4;
if BMICLASS=1                          then BMI=1;
if BMICLASS=3                          then BMI=2;
if BMICLASS=4                          then BMI=3;
if K2Q53 in (., .L, .M, 6, 7)    then decay=.;
if K2Q53 = 0                           then decay=2;
if K2Q53 = 1                           then decay=1;
if decay=2                                   then decay1=0;
if decay=.                                   then decay1=.;
if decay=1                                   then decay1=1;
if SEX = .                                   then Gender=.;
if SEX = 1                                   then Gender=2;
if SEX = 2                                   then Gender=1;
if SEX in(6,7)                         then Gender=.;
if gender=1                                  then gender1=1;
if gender=.                                  then gender1=.;
if gender=2                                  then gender1=0;
if age3_07 = 1                         then agec=1;
if age3_07 = 2                         then agec=2;
if age3_07 = 3                         then agec=3;
if ind6_4_07 in (., 6, 7)        then smoke=.;
if ind6_4_07=0                         then smoke=2;
if ind6_4_07=1                         then smoke=1;
if ind1_5_07=.                         then active=.;
if ind1_5_07= 1                              then active=1;
if ind1_5_07=2                               then active=2;
if ind1_5_07=3                               then active=3;
if ind1_5_07=4                               then active=4;
if ind4_1_07=.                               then HCprev=.;
if ind4_1_07=1                               then HCprev=2;
if ind4_1_07=2                               then HCprev=1;
if HCprev=.                                        then HCprev1=.;
if HCprev=1                                        then HCprev1=1;
if HCprev=2                                        then HCprev1=0;
if ind4_2_07=.                               then dentprev=.;
if ind4_2_07=1                               then dentprev=2;
if ind4_2_07=2                               then dentprev=1;
if dentprev=.                                then dentprev1=.;
if dentprev=1                                then dentprev1=1;
if dentprev=2                                then dentprev1=0;
if ind4_9b_07=.                                    then fcc=.;
if ind4_9b_07=0                                    then fcc=1;
if ind4_9b_07=1                                    then fcc=2;
```

```
if fcc=.                                    then fcc1=.;
if fcc=1                                    then fcc1=1;
if fcc=2                                    then fcc1=0;
if ind4_8_07=.                              then MedHome=.;
if ind4_8_07=0                              then MedHome=1;
if ind4_8_07=1                              then MedHome=2;
if MedHome=.                                then MedHome1=.;
if MedHome=1                                then MedHome1=1;
if MedHome=2                                then MedHome1=0;
if usuals=.                                 then USC=.;
if usuals=1                                 then USC=1;
if usuals=0                                 then USC=2;
if usuals=.                                       then USC1=.;
if usuals=1                                       then USC1=0;
if usuals=0                                       then USC1=1;
if ind4_9d_07=.                                   then CC=.;
if ind4_9d_07=0                                   then CC=2;
if ind4_9d_07=1                                   then CC=3;
if ind4_9d_07=2                                   then cc=1;
if ind4_9c_07=.                                   then refer=.;
if ind4_9c_07=0                                   then refer=1;
if ind4_9c_07=1                        then refer=3;
if ind4_9c_07=2                                   then refer=2;
if ind4_16_07=.                                   then screen=.;
if ind4_16_07=1                                   then screen=2;
if ind4_16_07=2                                   then screen=1;
if screen=.                                       then screen1=.;
if screen=2                                       then screen1=0;
if screen=1                                       then screen1=1;
if unins_07=.                               then curins=.;
if unins_07=1                               then curins=2;
if unins_07=2                               then curins=1;
if curins=.                                       then curins1=.;
if curins=1                                       then curins1=1;
if curins=2                                       then curins1=0;
if uninsyr_07=.                                   then conins=.;
if uninsyr_07=0                                   then conins=2;
if uninsyr_07=1                                   then conins=1;
if conins=.                                       then conins1=.;
if conins=1                                       then conins1=1;
if conins=2                                       then conins1=0;
if PLANGUAGE in (6,7)                       then LSAH=.;
if PLANGUAGE=1                              then LSAH=2;
if PLANGUAGE=2                              then LSAH=1;
if LSAH=.                                         then LSAH1=.;
if LSAH=1                                         then LSAH1=1;
if LSAH=2                                         then LSAH1=0;
if OTH_LANG=.                               then interv=.;
if OTH_LANG=.M                                 then interv=.;
if OTH_LANG=0                               then interv=2;
if OTH_LANG=1                               then interv=1;
if interv=.                                       then interv1=.;
if interv=1                                       then interv1=1;
if interv=2                                       then interv1=0;
if LSAH1=0 and interv1=0                 then lang=0;
if LSAH1=1 and interv1=1                 then lang=1;
if LSAH1=1 and interv1=0                 then lang=2;
```

```
   if LSAH1=0 and interv1=1                then lang=2;
   if LSAH1=. or interv1=.                       then lang=.;
   if povlev4_07=.                                     then povlev=.;
   if povlev4_07=1                                     then povlev=1;
   if povlev4_07=2                                     then povlev=2;
   if povlev4_07=3                                     then povlev=3;
   if povlev4_07=4                                     then povlev=4;
   if famstruct_07=.                             then Family=.;
   if famstruct_07=1                             then Family=4;
   if famstruct_07=2                             then Family=1;
   if famstruct_07=3                             then Family=2;
   if famstruct_07=4                             then Family=3;
   if family=4                                         then family1=0;
   if family in (1,2,3)                    then family1=1;
   if K11Q50 in (.P, 6, 7)                       then employ=.;
   if K11Q50=0                                         then employ=1;
   if K11Q50=1                                         then employ=2;
   if MARCOH_PAR in (.M, .P, 6, 7)         then marital=.;
   if MARCOH_PAR=1                                     then marital=4;
   if MARCOH_PAR=4                                     then marital=1;
   if MARCOH_PAR=3                                     then marital=2;
   if MARCOH_PAR=2                                     then marital=3;
   if marital=.                                  then marital1=.;
   if marital in (1,2,3)                         then marital1=1;
   if marital=4                                  then marital1=0;
   if MARSTAT_PAR in (., .P, .M)                 then marital2=.;
   if MARSTAT_PAR=1                              then marital2=2;
   if MARSTAT_PAR in (2,3,4,5)                   then marital2=1;
   if MARSTAT_PAR in (., .P, .M)                 then marital3=.;
   if MARSTAT_PAR=1                              then marital3=0;
   if MARSTAT_PAR in (2,3,4,5)                   then marital3=1;
   if state in (5, 12, 20, 21, 32, 34, 35, 46, 48) then mykeep=1;/*target states*/
   else if state ^in (5, 12, 20, 21, 32, 34, 35, 46, 48) then mykeep=2;/*nontarget states*/
   if state in (5, 12, 20, 21, 32, 34, 35, 46, 48)  and race4 in (1,2) then mykeepAHT=1;
/*hispanics, asians in target states*/
   if state in (5, 12, 20, 21, 32, 34, 35, 46, 48)  and race4 ^in (1,2) then mykeepAHT=2;
/*all others in target states*/
   else if state ^in (5, 12, 20, 21, 32, 34, 35, 46, 48) then mykeepAHT=2;/* & all
others/other states*/
   if state in (5, 12, 20, 21, 32, 34, 35, 46, 48)  and race4=1 then mykeepAT=1; /*asians in
target states*/
   if state in (5, 12, 20, 21, 32, 34, 35, 46, 48)  and race4 ^in (1)  then mykeepAT=2;
/*nonAsians in target states*/
   else if state ^in (5, 12, 20, 21, 32, 34, 35, 46, 48) then mykeepAT=2;/* & all others/other
states*/
   if state in (5, 12, 20, 21, 32, 34, 35, 46, 48)  and race4=2 then mykeepHT=1; /*hispanics
in target states*/
   if state in (5, 12, 20, 21, 32, 34, 35, 46, 48)  and race4 ^in (2)  then mykeepHT=2;
/*nonHispanics in target states*/
   else if state ^in (5, 12, 20, 21, 32, 34, 35, 46, 48) then mykeepHT=2;/* & all others/other
states*/
   if BMI=.                                      then BMI1=.;
   if BMI=1                                      then BMI1=.;
   if BMI=4                                      then BMI1=0;
   if BMI=2                                      then BMI1=1;
   if BMI=3                                      then BMI1=1;
   if active=.                                         then active1=.;
```

```
   if active in(0, 1, 2)                    then active1=1;
   if active in (3,4)                       then active1=0;
   if ind6_4a_07=.                               then smoke1=.;
   if ind6_4a_07 in (1,2)                   then smoke1=0;
   if ind6_4a_07=3                               then smoke1=1;
   if cc=1                                       then cc1=.;
   if cc=.                                       then cc1=.;
   if cc=2                                       then cc1=1;
   if cc=3                                       then cc1=0;
   if refer=.                                    then refer1=.;
   if refer=1                                    then refer1=.;
   if refer=2                                    then refer1=1;
   if refer=3                                    then refer1=0;
   if totkids4=.                            then kids=.;
   if totkids4=1                            then kids=1;
   if totkids4=2                            then kids=2;
   if totkids4=3                            then kids=3;
   if totkids4=4                            then kids=4;
   Label MomYrUS='Number of years mom in Us: >= 10 or <10 yrs';
   Label marital2='Parents legally married - (2=yes or 1=other (separated, divorced, widowed,
never married)';
   Label marital3='Parents legally married 0=yes, 1=other';
   Label kids='Total number of kids in household: 1, 2, 3, 4+';
   Label decay1='Decay outcome:Has child had dental decay or cavities in past year';
   Label refer1='Referral Outcome: Child received care coordination if needed';
   Label cc1='Care Coordination Outcome: Child received care coordination if needed';
   Label race2='Race variable containing English speaking nonHipanic whites (ref); Asian;
Hispanic children';
   Label smoke1='Household Smoke Exposure Outcome: Smoker inside the household vs Not';
   Label active1='Activity Outcome: Active vs Inactive';
   Label BMI1='BMI Outcome: healthy vs overweight/obese';
   Label race1 = 'Child Race';
   Label mykeep = 'State of Residence with Asian population >= %5 Child Population';
   Label mykeepAHT = 'Asian and Hispanic children in 9 target states';
   Label mykeepAT = 'Asian children in 9 target states';
   Label mykeepHT = 'Hispanic children in 9 target states';
   Label ParEd = 'Highest household educational level of one or both parents';
   LABEL marital = 'Marital/Cohabitation Status of Childs Parents in the Household';
   Label marital1 = 'Marital/Cohabitation Status of childs parents in the household';
   Label Employ = 'Was anyone in household employed at least 50 weeks in the last year?';
   Label Family = 'Type of family structure';
   Label Family1 = 'Family structure';
   Label povlev = 'Household level of income expressed as percentage of FPL';
   Label interv = 'Primary language of interview: 1=non-English, 2=English';
   Label LSAH = 'Primary language spoken at home: 1=non-English, 2=English';
   Label interv1 = 'Primary language of interview: 1=non-English, 0=English';
   Label LSAH1 = 'Primary language spoken at home: 1=non-English, 0=English';
   Label conins = 'Child had consisten insurance coverage during prior year: 1= no, 2=yes';
   Label curins = 'Child currently has insurance: 1=no, 2=yes';
   Label conins1 = 'Child had consisten insurance coverage during prior year: 1= no, 0=yes';
   Label curins1 = 'Child currently has insurance: 1=no, 0=yes';
   Label Screen = 'Child (10m - 5yr) Received complete std develop/behav screen: 1=no, 2=yes';
   Label Screen1 = 'Child (10m - 5yr) Received complete std develop/behav screen: 1=no,
0=yes';
   Label Refer = 'Child had problems getting referrals when needed in previous year:1= no
need, 2= had problems, 3= no problems';
```

```
   Label CC = 'Child received effective care coordination help when needed: 1=no need, 2=did
not receive, 3=received';
   Label USC = 'Child has a usual source of care when needed: 1=no 2=yes';
   Label USC1 = 'Child has a usual source of care when needed: 1=no 0=yes';
   Label MedHome = 'Children whose hc needs meet all 5 components of a medical home: 1=no
2=2yes';
   Label MedHome1 = 'Children whose hc needs meet all 5 components of a medical home: 1=no
0=yes';
   Label fcc = 'Child whose providers meet criteria for FCC and who had service in prior year:
1=no 2= yes';
   Label fcc1 = 'Child whose providers meet criteria for FCC and who had service in prior
year: 0=yes 1=no';
   Label dentprev = 'Visited a dentist for preventive service in last year: 1=no 2= yes';
   Label dentprev1='Visited a dentist for preventive service in last year: 0=yes 1=no';
   Label HCprev = 'Visited a HC professional for preventive service in last year: 1=no 2=
yes';
   Label HCprev1 = 'Visited a HC professional for preventive services in last year: 1=no
0=yes,1 or more times';
   Label active = 'Physical activity of child in past week: 1=none, 2=1-3 days, 3=4-6 days,
4=everyday';
   Label smoke = 'Indicator 6.4. Living in household in which someone uses cigarettes, cigars,
or pipe tobacco';
   Label agec = 'Age of Child - 3 groups';
   Label Gender = 'SEX of Child: 1=female, 2=male';
   Label gender1 = 'Sex of Child: 0=male, 1=female';
   LABEL decay='Did child have decayed teeth or cavities within the past 6 months: 1=yes,
2=no'
   Label Gen='Generational Status: 1st generation=child plus >1 parent born outside of US, 2nd
generation=child born
   in US plus >=1 parent born outside of US, 3rd generation child born in US plus both parents
born in US (ref)';
   Label BMI='Derived.  BMI for age classification (10-17 yrs)for sample child where
1=underweight, 2=overweight, 3=obese,
   4=normal';
   run;

   proc format;
   value mu 0='0=> 9 years'
                1='1=<10 yrs';
   value pm 1='1=other status'
                2='2=Legally married';
   value pms      0='0=Legally married'
                1='1=Other status';
   value mkah     1='1=Asians & Hispanics in target stats'
                2='2=All other children';
   value mka      1='1=Asians in target states'
                2='2=All other children';
   value mkh      1='1=Hispanics in target states'
                2='2=All other children';
   value agc      1='1=less than 6'
                2='2=6-11 yrs old'
                3='3=12-17';
   value rce      1='1=Anglo'
                2='2=Asian'
                3='3=Hispanic';
   value tk 1='1=1 child'
                2='2=2 chilren'
```

```
              3='3=3 children'
              4='4=4 or more children';
value cc 1='1=Did not receive if needed'
              0='0=Received when needed';
value rc 1='1=Asian'
              2='2=Hispanic';
value hs 1='1=Smoker present inside household'
              2='2=No smoker inside household';
value pa 1='1=0-3 days week physical active'
              0='0=4 or more days per week physically active';
value bm 0='0=Healthy Weight (5th to 84th percentile for age')
              1='1=Overweight_Obese(>84th percentile for age)';
value mk 1='1=Target States'
              2='2=Non-target State';
value mka     1='1=Asian'
              2='2=Hispanic';
value mkh     1='1=Hispanic'
              2='2=Asian';
value ra 1='1=hispanic'
              2='2=nonhispanic black'
              3='3=asian'
              4='4=nonhispanic multiracial or other'
              5='5=nonhispanic white';
value pe 1='1=High School or less'
              2='2=Greater than HS';
value ms 1='1=no parents in household'
              2='2=Neither'
              3='3=Cohabitation'
              4='4=Married';
value msc     1='1=Other'
              0='0=Married';
value fsc     1='1=Other family'
              0='0=Two parent, biological or adopted';
value fs 1='1=Two parent, step family'
              2='2=Single mother, no father present'
              3='3=Other family type'
              4='4=Two parent, biological or adopted';
value pl 1='1=<100'
              2='2=100-199'
              3='3=200-399'
              4='4=400 or more';
value la 1='1=Non-English'
              2='2=English';
value lal     0='0=English'
              1='1=Non-English';
value ca 1='1=Not needed'
              2='2=Did not receive'
              3='3=Received';
value ny 1='1=No'
              2='2=Yes';
value ac 1='1=None'
              2='2=1-3 days'
              3='3=4-6 days'
              4='4=Everyday';
value sx 1='1=female'
              2='2=male';
value dc 1='1=Yes'
```

```
               2='2=No';
value GS 1='1=1st Generation'
               2='2=2nd Generation'
               3='3=3rd Generation,ref';
value BMC      1='1=Underweight'
               2='2=Overweight'
               3='3=Obese'
               4='4=Normal,ref';
value nylr     0='0=no,ref'
               1='1=yes';
value ynlr     0='0=yes, ref'
               1='1=no';
value mal      0='0=male'
               1='1=female';
run;

data thesis4;
set thesis3;
format gender1       mal.;
format MomYrUS       mu.;
format marital2            pm.;
format marital3            pms.;
format marital1            msc.;
format family1       fsc.;
format agec                agc.;
format kids                tk.;
format USC1 screen1 conins1 curins1    HCprev1 dentprev1 fcc1 MedHome1 ynlr.;
format cc1 refer1    cc.;
format race4         rc.;
format active1       pa.;
format BMI1                bm.;
format mykeep        mk.;
format mykeepAHT           mkah.;
format mykeepAT            mka.;
format mykeepHT            mkh.;
format race1         ra.;
format ParEd         pe.;
format marital       ms.;
format family        fs.;
format povlev        pl.;
format LSAH    interv      la.;
format LSAH1 interv1 lal.;
format CC refer            ca.;
format HCprev dentprev fcc MedHome USC screen curins conins employ ny.;
format active  ac.;
format gender  sx.;
format decay smoke   dc.;
format Gen           GS.;
format BMI           BMC.;
format decay1 smoke1 nylr.;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables momed;
```

```
run;


/*validating mykeep variables*/;
proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAT;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepHT;
run;


/*Table 1 characteristics of Primary Language Spoke at Home and Language of Interview
Populations*/;
proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*interv*race4/row col CL CHISQ;
run;


proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*LSAH*race4/row col CL ChiSq;
run;


proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*interv*marital2/row col CL CHISQ;
run;
```

```
proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*LSAH*marital2/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*interv*agec/row col CL CHISq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*LSAH*agec/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*interv*gender/row col CL CHISq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*LSAH*gender/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*interv*gen/row col CL CHISq;
run;
ODS RTF close;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*LSAH*gen/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*interv*ParEd/row col CL CHISq;
run;
```

```
proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*LSAH*ParEd/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*interv*Povlev/row col CL CHISq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*LSAH*povlev/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*interv*totkids4/row col CL CHISq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*LSAH*totkids4/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*interv*family/row col CL CHISq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*LSAH*family/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*interv*employ/row col CL CHISq;
run;
```

```
proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*LSAH*employ/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*interv*marital/row col CL CHISq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*LSAH*marital/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*interv*conins/row col CL CHISq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*LSAH*conins/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*interv*curins/row col CL CHISq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*LSAH*curins/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*interv*instype_07/row col CL CHISq;
run;

proc surveyfreq data=thesis4;
```

```
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeepAHT*LSAH*instype_07/row col CL CHISq;
run;

/*Characteristics by Race: Asian vs Hispanic*/;


proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*interv/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*marital2/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*LSAH/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*agec/row col CL ChiSq;
run;


proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*gender/row col CL ChiSq;
run;


proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
```

```
tables mykeep*race4*gen/row col CL ChiSq;
run;


proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*ParEd/row col CL ChiSq;
run;


proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*povlev/row col CL ChiSq;
run;


proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*totkids4/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*family/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*employ/row col CL ChiSq;
run;


proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*marital/row col CL ChiSq;
run;


proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*conins/row col CL ChiSq;
run;
```

```
proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*curins/row col CL ChiSq;
run;

proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*instype_07/row col CL CHISq;
run;
ODS RTF close;



/*Table 2 and 3: Language Metrics and outcomes: Step 1 unadjusted ORs*/;

proc surveylogistic data=thesis4;
class interv1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model BMI1 (event='1=Overweight_Obese(>84th percentile for age)')=interv1;
run;

proc surveylogistic data=thesis4;
class LSAH1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model BMI1 (event='1=Overweight_Obese(>84th percentile for age)')=LSAH1;
run;

proc surveylogistic data=thesis4;
class interv1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model smoke1 (event='1=yes')=interv1;
run;

proc surveylogistic data=thesis4;
class LSAH1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model smoke1 (event='1=yes')=LSAH1;
run;

proc surveylogistic data=thesis4;
```

```
class interv1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model decay1 (event='1=yes')=interv1;
run;

proc surveylogistic data=thesis4;
class LSAH1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model decay1 (event='1=yes')=LSAH1;
run;

proc surveylogistic data=thesis4;
class interv1(PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model active1 (event='1=0-3 days week physical active')=interv1;
run;

proc surveylogistic data=thesis4;
class LSAH1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model active1 (event='1=0-3 days week physical active')=LSAH1;
run;

proc surveylogistic data=thesis4;
class interv1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model HCprev1 (event='1=no')=interv1;
run;

proc surveylogistic data=thesis4;
class LSAH1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model HCprev1 (event='1=no')=LSAH1;
run;

proc surveylogistic data=thesis4;
class interv1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
```

```
weight nschwt;
domain mykeepAHT;
model dentprev1 (event='1=no')=interv1;
run;

proc surveylogistic data=thesis4;
class LSAH1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model dentprev1 (event='1=no')=LSAH1;
run;

proc surveylogistic data=thesis4;
class interv1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model fcc1 (event='1=no')=interv1;
run;

proc surveylogistic data=thesis4;
class LSAH1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model fcc1 (event='1=no')=LSAH1;
run;

proc surveylogistic data=thesis4;
class interv1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model MedHome1 (event='1=no')=interv1;
run;

proc surveylogistic data=thesis4;
class LSAH1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model MedHome1 (event='1=no')=LSAH1;
run;

proc surveylogistic data=thesis4;
class interv1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model cc1 (event='1=Did not receive if needed')=interv1;
```

```
run;

proc surveylogistic data=thesis4;
class LSAH1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model cc1 (event='1=Did not receive if needed')=LSAH1;
run;

proc surveylogistic data=thesis4;
class interv1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model refer1 (event='1=Did not receive if needed')=interv1;
run;

proc surveylogistic data=thesis4;
class LSAH1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model refer1 (event='1=Did not receive if needed')=LSAH1;
run;

proc surveylogistic data=thesis4;
class interv1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model usc1 (event='1=no')=interv1;
run;


proc surveylogistic data=thesis4;
class LSAH1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model usc1 (event='1=no')=LSAH1;
run;

proc surveylogistic data=thesis4;
class interv1 (PARAM=ref REF='0=English');
stratum state;
cluster IDNUMR;
weight nschwt;
domain mykeepAHT;
model screen1 (event='1=no')=interv1;
run;
```

```
   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model screen1 (event='1=no')=LSAH1;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model curins1 (event='1=no')=interv1;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model curins1 (event='1=no')=LSAH1;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model conins1 (event='1=no')=interv1;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model conins1 (event='1=no')=LSAH1;
   run;

   /*adjusted ORs - Step 1 - test for interaction - backward elimination & chunk test used
Step 2 used consistent model for all adjOR*/;
   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
```

```
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model BMI1 (event='1=Overweight_Obese(>84th percentile for age)')=interv1 race4 gender gen
AGEYR_CHILD parEd povlev kids employ marital2 curins1
   interv1*gen;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model BMI1 (event='1=Overweight_Obese(>84th percentile for age)')=interv1 race4 gender gen
AGEYR_CHILD parEd povlev kids employ marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model BMI1 (event='1=Overweight_Obese(>84th percentile for age)')=LSAH1 race4 gender gen
AGEYR_CHILD parEd povlev kids employ marital2 curins1
   LSAH1*povlev;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
```

```
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model BMI1 (event='1=Overweight_Obese(>84th percentile for age)')=LSAH1 race4 gender gen
AGEYR_CHILD parEd povlev kids employ marital2 curins1; run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model smoke1 (event='1=yes')=interv1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model smoke1 (event='1=yes')=LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
```

```
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model decay1 (event='1=yes')=interv1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model decay1 (event='1=yes')= LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class interv1(PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model active1 (event='1=0-3 days week physical active')=interv1 race4 gender gen
AGEYR_CHILD parEd povlev kids employ marital2 curins1
   interv1*gender;
   run;

   proc surveylogistic data=thesis4;
   class interv1(PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
```

```
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model active1 (event='1=0-3 days week physical active')=interv1 race4 gender gen
AGEYR_CHILD parEd povlev kids employ marital2 curins1;
   run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model active1 (event='1=0-3 days week physical active')= LSAH1 race4 gender gen AGEYR_CHILD
parEd povlev kids employ marital2 curins1 LSAH1*race4;
   run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model active1 (event='1=0-3 days week physical active')= LSAH1 race4 gender gen AGEYR_CHILD
parEd povlev kids employ marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
```

```
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model HCprev1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1 interv1*gen; run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model HCprev1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1; run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model HCprev1 (event='1=no')= LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1
   LSAH1*gen LSAH1*povlev;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
```

```
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model HCprev1 (event='1=no')= LSAH1 gender race4 gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model dentprev1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids
employ marital2 curins1
   interv1*AGEYR_CHILD interv1*parEd interv1*povlev interv1*kids interv1*employ;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model dentprev1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids
employ marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
```

```
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model dentprev1 (event='1=no')= LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1
   LSAH1*AGEYR_CHILD;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model dentprev1 (event='1=no')= LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model fcc1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1
   interv1*gen;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
```

```
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model fcc1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1; run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model fcc1 (event='1=no')= LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1
   LSAH1*curins;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model fcc1 (event='1=no')= LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
```

```
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model MedHome1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids
employ marital2 curins1
   interv1*gen;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model MedHome1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids
employ marital2 curins1; run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model MedHome1 (event='1=no')= LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
```

```
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model cc1 (event='1=Did not receive if needed')= interv1 race4 gender gen AGEYR_CHILD parEd
povlev kids employ marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model cc1 (event='1=Did not receive if needed')= LSAH1 race4 gender gen AGEYR_CHILD parEd
povlev kids employ marital2 curins1
   LSAH1*gen LSAH1*AGEYR_CHILD;run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model cc1 (event='1=Did not receive if needed')= LSAH1 race4 gender gen AGEYR_CHILD parEd
povlev kids employ marital2 curins1;run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
```

```
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model refer1 (event='1=Did not receive if needed')= interv1 race4 gender gen AGEYR_CHILD
parEd povlev kids employ marital2 curins1
   interv1*AGEYR_CHILD interv1*race4;run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model refer1 (event='1=Did not receive if needed')= interv1 race4 gender gen AGEYR_CHILD
parEd povlev kids employ marital2 curins1;run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model refer1 (event='1=Did not receive if needed')= LSAH1 race4 gender gen AGEYR_CHILD
parEd povlev kids employ marital2 curins1
   LSAH1*gen LSAH1*curins;run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
```

```
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model refer1 (event='1=Did not receive if needed')= LSAH1 race4 gender gen AGEYR_CHILD
parEd povlev kids employ marital2 curins1;run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model usc1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1
   interv1*marital2;run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model usc1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
```

```
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model usc1 (event='1=no')= LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1
   LSAH1*parEd LSAH1*povlev LSAH1*marital2; run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model usc1 (event='1=no')= LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1; run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model screen1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1
   interv1*race4 interv1*kids interv1*employ; run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
```

```
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model screen1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1; run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model screen1 (event='1=no')= LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1
   LSAH1*gen LSAH1*povlev LSAH1*employ; run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model screen1 (event='1=no')= LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1; run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
```

```
   marital2 (PARAM=ref REF='2=Legally married')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model curins1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2
   interv1*kids;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model curins1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2; run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model curins1 (event='1=no')= LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2
   LSAH1*parEd; run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
```

```
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model curins1 (event='1=no')= LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2; run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model conins1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 interv1*gender interv1*parEd;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model conins1 (event='1=no')= interv1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2;run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model conins1 (event='1=no')= LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2
```

```
   LSAH1*AGEYR_CHILD LSAH1*parEd; run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   race4 (PARAM=ref REF='1=Asian')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAHT;
   model conins1 (event='1=no')= LSAH1 race4 gender gen AGEYR_CHILD parEd povlev kids employ
marital2;run;

   /*Adjust OR for Asian population for each measure of language*/;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model BMI1 (event='1=Overweight_Obese(>84th percentile for age)')=interv1 gender gen
AGEYR_CHILD parEd povlev kids employ marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model BMI1 (event='1=Overweight_Obese(>84th percentile for age)')=LSAH1 gender gen
AGEYR_CHILD parEd povlev kids employ marital2 curins1;
   run;
```

```
   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model smoke1 (event='1=yes')=interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model smoke1 (event='1=yes')=LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ marital2
curins1;
   run;



   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model decay1 (event='1=yes')=interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;
```

```
   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model decay1 (event='1=yes')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class interv1(PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model active1 (event='1=0-3 days week physical active')=interv1 gender gen AGEYR_CHILD
parEd povlev kids employ marital2 curins1;
   run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model active1 (event='1=0-3 days week physical active')= LSAH1 gender gen AGEYR_CHILD parEd
povlev kids employ marital2 curins1;
   run;
```

```
   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model HCprev1 (event='1=no')= interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1 interv1*gen; run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model HCprev1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model dentprev1 (event='1=no')= interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;


   proc surveylogistic data=thesis4;
```

```
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model dentprev1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model fcc1 (event='1=no')= interv1 gender gen AGEYR_CHILD parEd povlev kids employ marital2
curins1; run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model fcc1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ marital2
curins1;
   run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
```

```
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model MedHome1 (event='1=no')= interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1; run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model MedHome1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model cc1 (event='1=Did not receive if needed')= interv1 gender gen AGEYR_CHILD parEd
povlev kids employ marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
```

```
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model cc1 (event='1=Did not receive if needed')= LSAH1 gender gen AGEYR_CHILD parEd povlev
kids employ marital2 curins1;
   run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model refer1 (event='1=Did not receive if needed')= interv1 gender gen AGEYR_CHILD parEd
povlev kids employ marital2 curins1;
   run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model refer1 (event='1=Did not receive if needed')= LSAH1 gender gen AGEYR_CHILD parEd
povlev kids employ marital2 curins1;run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
```

```
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model usc1 (event='1=no')= interv1 gender gen AGEYR_CHILD parEd povlev kids employ marital2
curins1; run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model usc1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ marital2
curins1; run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model screen1 (event='1=no')=interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1; run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
```

```
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model screen1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1; run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model curins1 (event='1=no')= interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2;
   run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model curins1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2;
   run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
```

```
   model conins1 (event='1=no')= interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2;
   run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepAT;
   model conins1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2; run;


   /*Adjust OR for Hispanic population for each measure of language*/;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model BMI1 (event='1=Overweight_Obese(>84th percentile for age)')=interv1 gender gen
AGEYR_CHILD parEd povlev kids employ marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
```

```
   model BMI1 (event='1=Overweight_Obese(>84th percentile for age)')=LSAH1 gender gen
AGEYR_CHILD parEd povlev kids employ marital2 curins1;
   run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model smoke1 (event='1=yes')=interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model smoke1 (event='1=yes')=LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ marital2
curins1;
   run;



   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
```

```
   model decay1 (event='1=yes')=interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model decay1 (event='1=yes')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class interv1(PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model active1 (event='1=0-3 days week physical active')=interv1 gender gen AGEYR_CHILD
parEd povlev kids employ marital2 curins1;
   run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model active1 (event='1=0-3 days week physical active')= LSAH1 gender gen AGEYR_CHILD parEd
povlev kids employ marital2 curins1;
```

```
   run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model HCprev1 (event='1=no')= interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model HCprev1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
```

```
   model dentprev1 (event='1=no')= interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model dentprev1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model fcc1 (event='1=no')= interv1 gender gen AGEYR_CHILD parEd povlev kids employ marital2
curins1; run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model fcc1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ marital2
curins1;
```

```
   run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model MedHome1 (event='1=no')= interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1; run;

   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model MedHome1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model cc1 (event='1=Did not receive if needed')= interv1 gender gen AGEYR_CHILD parEd
povlev kids employ marital2 curins1;
   run;

   proc surveylogistic data=thesis4;
```

```
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model cc1 (event='1=Did not receive if needed')= LSAH1 gender gen AGEYR_CHILD parEd povlev
kids employ marital2 curins1;
   run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model refer1 (event='1=Did not receive if needed')= interv1 gender gen AGEYR_CHILD parEd
povlev kids employ marital2 curins1;
   run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model refer1 (event='1=Did not receive if needed')= LSAH1 gender gen AGEYR_CHILD parEd
povlev kids employ marital2 curins1;run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
```

```
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model usc1 (event='1=no')= interv1 gender gen AGEYR_CHILD parEd povlev kids employ marital2
curins1; run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model usc1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ marital2
curins1; run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model screen1 (event='1=no')=interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1; run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
```

```
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   curins1 (PARAM=ref REF='0=yes, ref')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model screen1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2 curins1; run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model curins1 (event='1=no')= interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2;
   run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model curins1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2;
   run;


   proc surveylogistic data=thesis4;
   class interv1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
```

```
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model conins1 (event='1=no')= interv1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2;
   run;


   proc surveylogistic data=thesis4;
   class LSAH1 (PARAM=ref REF='0=English')
   gender (PARAM=ref REF='2=male')
   parED (PARAM=ref REF='2=Greater than HS')
   povlev (PARAM=ref REF='4=400 or more')
   kids (PARAM=ref REF='1=1 child')
   employ (PARAM=ref REF='2=Yes')
   marital2 (PARAM=ref REF='2=Legally married')
   gen (PARAM=ref REF='3=3rd Generation,ref');
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   domain mykeepHT;
   model conins1 (event='1=no')= LSAH1 gender gen AGEYR_CHILD parEd povlev kids employ
marital2; run;

   /* Quality and Access issue prevalance by race*/;

   proc surveyfreq data=thesis4;
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   tables mykeep*race4*BMI1/row col CL ChiSq;
   run;

   proc surveyfreq data=thesis4;
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   tables mykeep*race4*smoke1/row col CL ChiSq;
   run;

   proc surveyfreq data=thesis4;
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   tables mykeep*race4*decay1/row col CL ChiSq;
   run;

   proc surveyfreq data=thesis4;
   stratum state;
   cluster IDNUMR;
   weight nschwt;
   tables mykeep*race4*active1/row col CL ChiSq;
   run;
   proc surveyfreq data=thesis4;
   stratum state;
```

```
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*HCprev1/row col CL ChiSq;
run;
proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*dentprev1/row col CL ChiSq;
run;
proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*fcc1/row col CL ChiSq;
run;
proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*MedHome1/row col CL ChiSq;
run;
proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*cc1/row col CL ChiSq;
run;
proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*refer1/row col CL ChiSq;
run;
proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*usc1/row col CL ChiSq;
run;
proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*screen1/row col CL ChiSq;
run;
proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*curins1/row col CL ChiSq;
run;
proc surveyfreq data=thesis4;
stratum state;
cluster IDNUMR;
weight nschwt;
tables mykeep*race4*conins1/row col CL ChiSq;run;
```