

Variables from the Census Data:

All variables estimated from the U.S. Census Data were taken from the summary files covering the years 2009 through 2014, and were taken using the API in the month of December 2015. All variables were sampled by census tract.

Household Type

This refers to the type of household with reference to the household owner. Optional answers were married couple, female householder no husband present, male householder no wife present and living alone. The variables are coded as such. This variable was cross tabulated with race and was available in table B11001 of the Census Data.

Race

The U.S. Census classifies race in the following categories: White, Black or African American, American Indian and Alaskan Native, Asian, Native Hawaiian and Pacific Islander, Some Other Race, Two or More Races, White Not Hispanic or Latino, and Hispanic or Latino. For our purposes we chose to neglect the White variable and use both White Not Hispanic or Latino, and Hispanic or Latino. White Not Hispanic or Latino was coded as “White” and all other variable names remained the same. Race was cross tabulated with household type and can be found in table B11001 of the Census Data. For simplification purposes we assumed all members of the same household were the same race.

Household Size/Household ID

Household size refers to the number of people in each household and determined the number of rows that would be given the same “householdID” a string that includes the region, census tract, and a unique number to separate it from other houses. For example the 7th house generated for region 1 and census tract 950401, would have the householdID “1.950401.7” Household size was cross tabulated by household type and available in table B11016.

Member

For each household some assumptions were made regarding age and sex regarding at least one member of the household based off the household type. If the household type was “Married Couple,” one member of the household was labeled the “Husband” and another the “Wife”, as same sex marriage was not legalized in all of Texas until 2016. If the household type was “Female Householder no husband present” or “Male Householder, no wife present” one member was labeled “Female Householder” or “Male Householder” respectively. Households of “Living Alone” had only one member labeled “Householder.” All other members “Adult Man”, “Adult Woman” or “Child” were determined through sampling from data established in sex and age.

Number of Vehicles

Number of Vehicles refers to the number of vehicles available to the household either 0, 1, 2, 3, or 4 or more, which was sampled from appropriate sections of table B08201 which was cross tabulated by household size.

Sex

Variable responses were either “Male” or “Female.” If the member was labeled either “Wife” or “Female Householder” the gender was assumed to be “Female.” If the member was labeled “Male Householder” or “Husband” the gender was assumed to be “Male.” The gender of all other members

was sampled through data cross tabulated race, age and gender available in table B01001 of the U.S. Census. As sex was assumed for householders, householders were taken out of the population when sampling for age and sex.

Age

Age was broken in to the following intervals: “Under 5”, “5 to 9”, “10 to 14”, “15 to 17”, “18 to 19”, “20 to 24”, “25 to 29”, “30 to 34”, “35 to 44”, “45 to 54”, “55 to 64”, “65 to 74”, “75 to 84”, “Over 85”. It was sampled from appropriate intervals of table B01001 from the U.S. Census. Householders were assumed to be over the age of 18 and sampled from the appropriate intervals. The householder population was removed from the total amount of adults when sampling ages for all other members.

School Enrollment

Variable responses were “Public School”, “Private School”, or “Not Enrolled in School.” The variable was sampled from appropriate sections of table B14003 which was cross tabulated by sex and age in 5 year intervals from 5 to 35 and 35 and older.

Education Attainment

Variable responses were "Less than 9th grade", "9th to 12th grade, no diploma", "High School Graduate", "Some College, no degree", "Associate's degree", "Bachelor's Degree", "Graduate or Professional Degree". They were sampled for the population 18 and older from table B15001 which was cross tabulated by age in age groups with the following intervals 18-24, 25-34, 35-44, 45-64, and over 65.

Employment

Variable responses were "In Armed Forces", "Employed", "Unemployed", "Not in labor force". They were sampled from appropriate sections of table B23001 which was cross tabulated by sex and age in the following intervals “16 to 19”, “20 to 24”, “25 to 29”, “30 to 34”, “35 to 44”, “45 to 54”, “55 to 64”, “65 to 69”, “70 to 74” and “Over 75.”

Disability

Variable responses were "With One Type of Disability", "With Two or More Types of Disabilities", "No Disabilities" and were sampled from table C18018 which was cross tabulated by the following age intervals under 18, 18 to 64, and 65 and older.

Field of Degree

Variable responses were "Science and Engineering", "Science and Engineering Related Fields", "Business", "Education", "Arts, Humanities and Other" they were sampled from table C51010, which was cross tabulated by race.

Nativity

Variable responses were either “native” referring to born in the U.S. And “foreign” referring to born outside of the U.S. Responses were sampled from appropriate sections of table B16005 which was cross tabulated by race and English speaking skills.

English

English refers to the sample person's ability to speak English and responses were either “Speaks Only English”, “Speaks English Very Well”, and “Speaks English Not Very Well”. It was sampled from appropriate sections of table B16005, which is cross tabulated by race and nativity.

Citizenship

Variable responses were “Citizen”, “Naturalized Citizen”, and “Not a U.S. Citizen”, People already sampled as “native” were automatically citizens. Others were sampled from table B16008 which was cross tabulated by nativity, English speaking ability, and age, but as age and English speaking ability were not directly sampled together, age was not used in determining sampling.

Language

Language refers to the language spoken at home. Sample people who were sampled to “Only Speak English” were assumed to speak “English” at home, other responses were “Speaks Spanish”, or “Speaks Other Languages”. Those that did not “Only Speak English” were sampled from table B16008 which was cross tabulated by nativity, English speaking ability, and age, but as age and English Speaking ability were not directly sampled together, age was not used in determining sampling.

Veteran Status

Veteran status refers to whether an individual was a veteran or not, responses were “Veteran” or “Nonveteran” and were sampled from appropriate sections of table B21001 which was cross tabulated by sex and the following age intervals 18-34, 35-54, 55-64, 65-74, and 75 and up.

Transport

Transport refers to how individuals get to work. Variable responses were "drove alone", "carpooled", "public transportation", "walked", "taxi, motorcycle, bike or other", "worked at home" and were sampled from appropriate sections of table B08141 which was cross tabulated by vehicles available either no vehicles, 1 vehicle, 2 vehicles, or 3 or more vehicles available.

Travel Time

Travel time refers to the amount of time taken to get to work, variable responses were "less than 10 minutes", "10 to 14 minutes", "15 to 19 minutes", "20 to 24 minutes", "25 to 29 minutes", "30 to 34 minutes", "35 to 44 minutes", "45 to 59 minutes", "60 minutes or more" which was sampled from appropriate sections of table B08134 cross tabulated by transportation method.

Income

Income refers to household income which was broken into the following intervals: "less than 10,000", "10,000 to 14,999", "15,000 to 19,999", "20,000 to 24,999", "25,000 to 29,999", "30,000 to 34,999", "35,000 to 39,999", "40,000 to 44,999", "45,000 to 49,999", "50,000 to 59,999", "60,000 to 74,999", "75,000 to 99,999", "100,000 to 124,999", "125,000 to 149,999", "150,000 to 199,999", "200,000 or more", income was sampled from appropriate sections of table B19001 which was cross tabulated by race.

Insurance

Insurance refers to health insurance and responses were either "private insurance", "public insurance", "no insurance" and were sampled from table B27015 which was cross tabulated by the following income intervals under 25,000, 25,000-49,999, 50,000-74,999, 75,000-99,999 and over 100,000.

Variables from the Behavioral Risk Factor Surveillance System:

The Behavioral Risk Factor Surveillance System is conducted by the Center for Disease Control and consists of telephone interviews from randomly sampled telephone numbers. Data was taken from the years 2009 to 2014. The data was then subset by sex, education attainment, race and income. Samples from the synthetic data set would then sample from these subsections and use all relevant

corresponding variables from that phone interview. Variables were only used if they were available in 75% of all available phone interviews.

General Health

Refers to the question “Would you say that in general your health is:” 1-Excellent, 2-Very Good, 3-Good, 4-Fair, 5-Poor, 7-Don't Know/Not Sure, 9-Refused.

Couldn't see a doctor because of cost

Refers to the question “Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?” Answers were 1-”Yes”, 2-”No”, 7-”Don't Know/Not Sure”, and 9-”Refused.”

Last Dr. Checkup

Refers to the question “About how long has it been since you last visited a doctor for a routine checkup? [A routine checkup is a general physical exam, not an exam for a specific injury, illness, or condition.] “. Answers were coded as either 1-Within the last year, 2- within past 2 years, 3- within the past 5 years, 4-5 or more years ago, 7-don't know/not sure, 9-refused.

Diagnosed with Heart Attack

Refers to the question “(Ever told) you had a heart attack, also called a myocardial infarction? “ Answers were 1-Yes, 2-No, 7-Don't Know/Not Sure, or 9-Refused.

Diagnosed with Angina or Coronary Heart Disease

Refers to question “(Ever told) you had angina or coronary heart disease? “Answers were 1-Yes, 2-No, 7-Don't Know/Not Sure, or 9-Refused.

Diagnosed with Stroke

Refers to question “(Ever told) you had a stroke “ Answers were 1-Yes, 2-No, 7-Don't Know/Not Sure, or 9-Refused.

Diagnosed with Asthma

Refers to question “(Ever told) you had asthma?”. Answers were 1-Yes, 2-No, 7-Don't Know/Not Sure, or 9-Refused.

Diagnosed with Arthritis

Refers to question “(Ever told) you had arthritis?” Answers were 1-Yes, 2-No, 7-Don't Know/Not Sure, or 9-Refused.

Diagnosed with Diabetes

Refers to the following questions “(Ever told) you have diabetes (If "Yes" and respondent is female, ask "Was this only when you were pregnant?". If Respondent says pre-diabetes or borderline diabetes, use response code 4.) “ Responses are 1-Yes, 2-Yes but female told only during pregnancy, 3-No, 4-No, pre-diabetes or borderline diabetes, 7-Don't Know/Not Sure, 9-Refused.

Limited Activities because of Problems

Refers to the following question “ Are you limited in any way in any activities because of physical, mental, or emotional problems? “Answers were 1-Yes, 2-No, 7-Don't Know/Not Sure, or 9-Refused.

Smoked at Least 100 cigarettes

Refers to the following question “Have you smoked at least 100 cigarettes in your entire life? [Note: 5 packs = 100 cigarettes] ” Answers were 1-Yes, 2-No, 7-Don't Know/Not Sure, or 9-Refused.

Use of Smokeless Tobacco

Refers to the following question “Do you currently use chewing tobacco, snuff, or snus every day, some days, or not at all? (Snus (Swedish for snuff) is a moist smokeless tobacco, usually sold in small pouches that are placed under the lip against the gum.)[Snus (rhymes with 'goose')]

 “ Answers were 1- Every day, 2-Some Days, 3-Not at all, 7-Don't Know/Not Sure, 9-Refused

Days in past 30 had alcoholic beverage

Refers to question “During the past 30 days, how many days per week or per month did you have at least one drink of any alcoholic beverage such as beer, wine, a malt beverage or liquor? “ Answers were 101-199 the 1__ refers to days per week, 201-299 the 2__ refers to days per month, 777 Don't Know/ Not Sure, 888 None, 999 Refused

Exercised Past 30 Days

Refers to the question “During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise? “ Answers were 1-Yes, 2-No, 7-Don't Know/Not Sure, or 9-Refused.

Flu Shot

Refers to the question “Now I will ask you questions about the flu vaccine. There are two ways to get the flu vaccine, one is a shot in the arm and the other is a spray, mist, or drop in the nose called FluMist™ During the past 12 months, have you had either a flu shot or a flu vaccine that was sprayed in your nose? (A new flu shot came out in 2011 that injects vaccine into the skin with a very small needle. It is called Fluzone Intradermal vaccine. This is also considered a flu shot.)” Answers were 1- Yes, 2-No, 7-Don't Know/Not Sure, or 9-Refused.

Ever Tested HIV

Refers to question “Have you ever been tested for HIV? Do not count tests you may have had as part of a blood donation. Include testing fluid from your mouth. “Answers were 1-Yes, 2-No, 7-Don't Know/Not Sure, or 9-Refused.

BMI

Refers to Body Mass Index, calculated by the respondents weight in kilograms divided by the respondents height in meters.

Variables from the 500 Cities Project

The 500 Cities Project was built off of the BRSSR data. As such it estimates prevalence of conditions such as asthma or binge drinking based off of respondent answers to questionnaires sent between 2011 and 2013. This data was downloaded and the prevalence was used as a probability for individuals in simulated populations. Relationships between conditions were not kept but the estimates were provided at the census tract level.

Arthritis

Refers to whether adults age 18 and older have been diagnosed with arthritis. “Yes” refers to diagnosed with arthritis, “no” refers to not diagnosed with arthritis.

Binge Drinking

Refers to adults age 18 and older who binge drink as defined by 5 or more drinks on one occasion for men or 4 or more drinks on one occasion for women. Answers were “yes” or “no.”

High Blood Pressure

Refers to whether adult respondents (over 18 years old) were told if they had high blood pressure by a medical professional. Answers were “yes” or “no”.

Blood Pressure Medication Usage

Refers to adult respondents (over 18 years old) with high blood pressure who were taking medications for their high blood pressure. Answers were “yes” or “no.”

Mammography Use

Refers to whether or not female respondents between the ages of 50 and 74 had ever had a mammogram. Answers were “yes” or “no.”

Obesity

Refers to the range in Body Mass Index classified as “Obese” (30 to 99.8) calculated by respondents answers to questions on height and weight. Answers were “yes” obese, or “no” not obese.

Cancer

Refers to adults age 18 and older who were diagnosed at some point with any type of cancer other than skin cancer. Answers were “yes” or “no.”

Asthma

Refers to adults 18 and over who were diagnosed with asthma. Answers were “yes” or “no.”

Coronary Heart Disease

Refers to adults 18 and over who were ever diagnosed with coronary heart disease. Answers were “yes” or “no.”

Routine Check-ups

Refers to whether adults age 18 or over had gone to a routine health check up within the past year. Answers were “yes” or “no.”

Cholesterol Screening

Refers to whether adults age 18 or over had been screened for high cholesterol. Answers were “yes” or “no.”

High Cholesterol

Refers to of the adults 18 or over that had been screened for high cholesterol did they have high cholesterol. Answers were “yes” or “no.”

Colonoscopy

Refers to adults between ages 50 and 75 who had received either a fecal occult blood test, sigmoidoscopy, or colonoscopy. Answers were “yes” or “no.”

Chronic Obstructive Pulmonary Disease

Refers to adults 18 and over who had been diagnosed with chronic obstructive pulmonary disease. Answers were “yes” or “no.”

Preventative Services Among Older Men

Refers to whether men 65 and older were up to date on clinical services such as Flu shot past Year, PPV shot ever, or colorectal cancer screenings. Answers were “yes” or “no.”

Preventative Services Among Older Women

Refers to whether women 65 and older were up to date on clinical services such as Flu shot past Year, PPV shot ever, colorectal cancer screenings and mammogram every 2 years. Answers were “yes” or “no.”

Smoking

Refers to adults 18 and older who currently smoke. Answers were “yes” or “no.”

Diabetes

Refers to adults 18 and older who were diagnosed with diabetes. Answers were “yes” or “no.”

Chronic Kidney Disease

Refers to adults 18 and older who were diagnosed with chronic kidney disease. Answers were “yes” or “no.”

Physical Activity Leisure Time

Refers to adults 18 and older who had no physical leisure time. Answers were “yes” or “no.”

Mental Health

Refers to adults 18 and older who had 14 days or more of mental health being not good. Answers were “yes” or “no.”

Stroke

Refers to adults 18 and older who had a stroke. Answers were “yes” or “no.”

Pap Smear

Refers to papanicolaou smear use among women between the ages of 21 and 65. Answers were “yes” the respondent had a papanicolaou smear at some point or “no” they had not.

Physical Health

Refers to adults 18 and older who had 14 days or more of poor physical health. Answers were “yes” or “no.”

Sleep

Refers to adults 18 and over who slept less than 7 hour per night. Answers were “yes,” slept less than 7 hours, or “no.”

Teeth

Refers to adults over the age of 65 who had lost all of their teeth. Answers were “yes” or “no.”