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# Contextual Wave V Database 

## 面UNC <br> CAROLINA <br> POPULATION CENTER

# National Longitudinal Study of Adolescent to Adult Health Contextual Wave V Database 

## Acknowledgments

Add Health is a program project directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill, and funded by grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. Work on the contextual data linkage was supported by grants to Taylor Hargrove and Lauren Gaydosh (R21HD095448 and R24AG045061) from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, the National Institute on Aging, and the Network on Life Course Health Dynamics and Disparities. Information on how to obtain the Add Health data files is available on the Add Health website (http://www.cpc.unc.edu/addhealth).

## Introduction

This contextual database further expands the extensive contextual data currently available to users of the National Longitudinal Study of Adolescent to Adult Health (Add Health) through the provision of numerous measures reported by the U.S. Census Bureau's American Community Survey (ACS), rural-urban commuting area codes, U.S. Climate Atlas, and Uniform Crime Report. The data provide an important update to the contextual variables already available for previous waves of the study. Additionally, there are a few new variables in the present database that are absent from other waves. This data release increases the possibilities and quality of the contextual analyses that researchers may conduct using Add Health by permitting various longitudinal analyses of significant socio-economic and geographic characteristics defining the environments in which Add Health respondents lived during Waves I through V. Most of the variables included in this contextual file measure context at the census tract-, county-, and state-levels.

## Data Structure and Form

The contextual data file contains one observation for each respondent in the Wave V Add Health survey. The first variable is the respondent identifier (the AID), which permits merging these contextual data with other Add Health data files. Except for AID, the Wave V Geocode Source (MATCH5), and the two measures of rural-urban commuting (TER10156 and TER10157), each measure is numeric. The next variable (MATCH5) describes the geocode source identifying respondent locations. Unlike the Context3 and Tract4 data releases, Context5 lacks a move distance variable; however, the Wave V Grouping File, w1_5grp.xpt, does provide pseudo FIPS codes corresponding to respondents' residences at Waves I through V. These location identifiers are based on 2010 Census geographic boundaries and are longitudinally consistent across all waves. Previous Add Health waves released location identifiers based on the most recent Census for that wave and are therefore not comparable across time. These identifiers are based on Census block group FIPS codes and, consequently, report moves between states, counties, tracts, and block groups.

Variable order in the data reflects the order of presentation in the Data Dictionary.

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## Variable Naming Conventions

With the exception of AID, all variables in the contextual data file adhere to the following nomenclature:

1st character - Summary level of the variable.
Refers to the geographic area to which the variable corresponds. Geographic levels include:
T = Tract
C = County
S = State
$\mathrm{N}=$ Nearest climate station

One factor researchers must keep in mind when conducting longitudinal analyses is that administrative boundaries may have changed between 1990 and 2010. Thus, changes observed may, in part, be artifacts of boundary delineation. This contextual database reports measures utilizing the 2010 census boundaries. However, some previously released Add Health contextual files from Waves III and IV provide data based on 2000 census boundaries, while those from Wave I and II provide data based on 1990 boundaries.

Unlike other measures, the climate variables are not based on geographic boundaries, but rather the nearest climate station in the United States. For more information, see the description of the 1980-2010 Climate Atlas of the United States in the Source Description section of this document.

2nd and 3rd characters - Original data source.
The 2nd and 3rd characters are abbreviations representing the original sources of data, or other secondary sources, from which the constructed variables were derived. Additional detail about these sources is available in the Source Description. The sources and their abbreviations include:

AC 2018 American Community Survey 5-Year Estimates
CA 1981-2010 U.S. Climate Atlas
ER U.S. Department of Agriculture's Economics Research Service
UC 2016 Uniform Crime Reports

4th and 5th characters - Year of data.
These digits refer to the year that the variable represents. For instance, the year 2018 is denoted as 18. The names of period estimates specify the last year of data comprising the range. For example, the American Community Survey's 5 -year estimates span 2014-2018 and, therefore, have an " 18 " as the 4th and 5th characters.

6th through 8th characters - Variable number.
The last three characters report the variable number within this Add Health database. Variable numbers range sequentially from 001 to 167 . Note that some gaps in the numbering occur as a result of aligning these data with the previously released Tract3 and Tract4 data.

## Data Dictionary

The table below lists the whole set of variables comprising this Add Health contextual database. 2018 American Community Survey 5 -year data appear first, followed by measures derived from other sources. A formula or short description is presented in the final column in order to provide users variable construction specifics.

Table 1: Contextual Variables Based on ACS Five Year Estimates (2014-2018)

| Name | Description | Formula |
| :---: | :---: | :---: |
| Population |  |  |
| T/C/S AC18001 | Total population | B01003_001E |
| T/C/S AC18002 | Density - persons per square km | B01003_001E/AREALAND |
| Race and Ethnic Background |  |  |
| T/C/S AC18003 | Proportion White alone | B02001_002E/B01003_001E |
| T/C/S AC18004 | Proportion Black or African American alone | B02001_003E/B01003_001E |
| T/C/S AC18005 | Proportion American Indian and Alaska Native alone | B0200_1004E/B01003_001E |
| T/C/S AC18006 | Proportion Asian alone, Native Hawaiian and other Pacific Islander | $\begin{aligned} & \text { (B02001_005E+B02001_006E)/B01003_001 } \\ & \text { E } \end{aligned}$ |
| T/C/S AC18007 | Proportion some other race alone | B02001_007E/B01003_001E |
| T/C/S AC18008 | Proportion two or more races | B02001_008E/B01003_001E |
| T/C/S AC18009 | Proportion Hispanic or Latino: | B03002_012E/B03002_001E |
| T/C/S AC18010 | Proportion Hispanic or Latino and White alone | B03002_013E/B03002_001E |
| T/C/S AC18011 | Proportion Hispanic or Latino and Black alone | B03002_014E/B03002_001E |
| T/C/S AC18012 | Proportion Hispanic or Latino and American Indian or Alaska native alone | B03002_015E/B03002_001E |
| T/C/S AC18013 | Proportion Hispanic or Latino and Asian or Pacific Islander alone | $\begin{aligned} & \text { (B03002_016E+B03002_017E)/B03002_001 } \\ & \text { E } \end{aligned}$ |
| T/C/S AC18014 | Proportion Hispanic or Latino and some other race alone | B03002_018E/B03002_001E |
| T/C/S AC18015 | Proportion Hispanic or Latino and two or more races | B03002_019E/B03002_001E |
| Age Structure |  |  |
| T/C/S AC18016 | Proportion 0 to 4 years of age | $\begin{aligned} & \text { (B01001_003E+B01001_027E)/B01003_001 } \\ & \text { E } \end{aligned}$ |
| T/C/S AC18017 | Proportion 5 to 9 years of age | $\begin{aligned} & \text { (B01001_004E+B01001_028E)/B01003_001 } \\ & \text { E } \end{aligned}$ |
| T/C/S AC18018 | Proportion 10 to 14 years of age | $\begin{aligned} & \text { (B01001_005E+B01001_029E)/B01003_001 } \\ & \text { E } \end{aligned}$ |

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| T/C/S AC18019 | Proportion 15 to 17 years of age | (B01001_006E+B01001_030E)/B01003_001 E |
| :---: | :---: | :---: |
| T/C/S AC18020 | Proportion 18 to 24 years of age | $\begin{aligned} & \left(\sum \mathrm{i}=7 \ldots . .10\left[\mathrm{~B} 01001 \_00 \mathrm{iE}\right]+\sum \mathrm{i}=31 \ldots . .34[\mathrm{BO1001}\right. \\ & 00 \mathrm{iE}]) / \mathrm{BO} 01003 \_001 \mathrm{E} \end{aligned}$ |
| T/C/S AC18021 | Proportion 65 to 74 years of age | $\begin{aligned} & \left(\sum \mathrm{i}=20 . . .22\left[B 01001 \_00 \mathrm{iE}\right]+\sum \mathrm{i}=44 \ldots 46[\mathrm{B01001}\right. \\ & \text { OOiE])/B01003_001E } \end{aligned}$ |
| T/C/S AC18022 | Proportion 75 years of age or older | $\begin{aligned} & \left(\sum \mathrm{i}=23 \ldots 25\right. \\ & \text { [B01001_00iE] }+\sum \mathrm{i}=47 \ldots . .49[\mathrm{B01001} \text { _00iE] }) / \mathrm{B0} \\ & 1003 \_001 \mathrm{E} \end{aligned}$ |
| T/C/S AC18023 | Proportion males ages 18-24 all races | £i=7...10 [B01001_00iE]/B01003_001E |
| T/C/S AC18024 | Proportion females ages 18-24 all races | $\sum \mathrm{i}=31 . . .34$ [B01001_00iE]/B01003_001E |
| T/C/S AC18025 | Proportion males 18-24 White alone | ```(B01001A_007E+B01001A_008E)/B01003_0 01E``` |
| T/C/S AC18026 | Proportion females 18-24 White alone | $\begin{aligned} & \text { (B01001A_022E+B01001A_023E)/B01003_0 } \\ & \text { 01E } \end{aligned}$ |
| T/C/S AC18027 | Proportion males 18-24 Black or African American alone | (B01001B_007E+B01001B_008E)/B01003_0 01E |
| T/C/S AC18028 | Proportion females 18-24 Black or African American alone | ```(B01001B_022E+B01001B_023E)/B01003_0 01E``` |
| T/C/S AC18029 | Proportion males 18-24 American Indian or Alaska native alone | ```(B01001C_007E+B01001C_008E)/B01003_0 01E``` |
| T/C/S AC18030 | Proportion females 18-24 American Indian or Alaska native alone | (B01001C_022E+B01001C_023E)/B01003_0 01E |
| T/C/S AC18031 | Proportion males 18-24 Asian or Pacific Islander alone | $\begin{aligned} & \hline\left(\sum \mathrm{i}=\mathrm{D}, \mathrm{E}[\mathrm{~B} 01001 \mathrm{i} \text { _007E+B01001i_008E])/B01 }\right. \\ & \text { 003_001E } \\ & \hline \end{aligned}$ |
| T/C/S AC18032 | Proportion females 18-24 Asian or Pacific Islander alone | $\begin{aligned} & \left(\sum \mathrm{i}=\mathrm{D}, \mathrm{E}[\mathrm{~B} 01001 \mathrm{i} \text { _022E+B01001i_023E])/B01 }\right. \\ & 003 \_001 \mathrm{E} \end{aligned}$ |
| T/C/S AC18033 | Proportion males 18-24 some other race alone | (B01001F_007E+B01001F_008E)/B01003_00 1E |
| T/C/S AC18034 | Proportion females 18-24 some other race alone | ```(B01001F_022E+B01001F_023E)/B01003_00 1E``` |
| T/C/S AC18035 | Proportion males 18-24 two or more races | $\begin{aligned} & \text { (B01001G_007E+B01001G_008E)/B01003_0 } \\ & \text { 01E } \end{aligned}$ |
| T/C/S AC18036 | Proportion females 18-24 two or more races | (B01001G_022E+B01001G_023E)/B01003_0 01E |
| T/C/S AC18037 | Proportion males 18-24 Hispanic or Latino | $\begin{array}{\|l} \hline \begin{array}{l} \text { (B01001__007E+B01001I_008E)/B01003_00 } \\ \text { 1E } \end{array} \\ \hline \end{array}$ |
| T/C/S AC18038 | Proportion females 18-24 Hispanic or Latino | $\begin{aligned} & \text { (B01001I_022E+B01001I_023E)/B01003_00 } \\ & \text { 1E } \end{aligned}$ |
| T/C/S AC18039 | Proportion males 18-24 White alone Non-Hispanic or Latino | (B01001H_007E+B01001H_008E)/B01003_0 01E |
| T/C/S AC18040 | Proportion females 18-24 White alone Non-Hispanic or Latino | $\begin{aligned} & \text { (B01001H_022E+B01001H_023E)/B01003_0 } \\ & \text { 01E } \\ & \hline \end{aligned}$ |

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| T/C/S AC18041 | Proportion occupied housing units married-couple family with own children under 18 | ```(B25115_005E+B25115_018E)/B25115_001 E``` |
| :---: | :---: | :---: |
| T/C/S AC18042 | Proportion occupied housing units female householder with own children under 185 | $\begin{array}{\|l} \hline \text { (B25115_012E+B25115_025E)/B25115_001 } \\ \mathrm{E} \end{array}$ |
| T/C/S AC18043 | Proportion occupied housing units male householder with own children under 185 | $\begin{aligned} & \hline \text { (B25115_009E+B25115_022E)/B25115_001 } \\ & \mathrm{E} \end{aligned}$ |
| T/C/S AC18044 | Proportion occupied housing units nonfamily5 | $\begin{array}{\|l} \hline \text { (B25115_014E+B25115_027E)/B25115_001 } \\ \text { E } \end{array}$ |
| T/C/S AC18045 | Proportion families with own children headed by female householder | $\begin{aligned} & \text { B11003_016/(B11003_003+B11003_010+B1 } \\ & \text { 1003_016) } \end{aligned}$ |
| T/C/S AC18046 | Proportion families with own children headed by male householder | $\begin{aligned} & \text { B11003_010/(B11003_003+B11003_010+B1 } \\ & \text { 1003_016) } \end{aligned}$ |
| T/C/S AC18047 | Proportion of population 15 years and over divorced or separated | $\begin{aligned} & \left(\sum \mathrm{i}=07,10,16,19\right. \\ & \text { [B12001_0iE])/B12001_001E } \end{aligned}$ |
|  |  |  |
| Linguistic Isolation, Foreign Born |  |  |
| T/C/S AC18048 | Proportion households linguistically isolated | $\begin{aligned} & \hline\left(\sum i=04,07,10,13\left[B 16002 \_0 i E\right]\right) / \\ & \text { B16002_001E } \end{aligned}$ |
| T/C/S AC18049 | Proportion foreign born | B05012_003E/B05012_001E |
|  |  |  |
| Educational Attainment |  |  |
| T/C/S AC18050 | Proportion 25 years and over with less than high school diploma | $\begin{aligned} & \text { ( } \sum \mathrm{i}=03, . ., 10,20, . ., 27 \\ & \text { [B15002_0iE])/B15002_001E } \end{aligned}$ |
| T/C/S AC18051 | Proportion 25 years and over with bachelor's degree or more | $\begin{array}{\|l\|} \hline\left(\sum \mathrm{i}=15, . ., 18,32, . ., 35\right. \\ {[\text { B15002_OiE])/B15002_001E }} \\ \hline \end{array}$ |
| Labor Force and Employment Status |  |  |
| T/C/S AC18052 | Unemployment rate all persons 16 years and over | $\begin{array}{\|l} \hline \sum \mathrm{i}=08,15,22,29,36,43,50,57,64,71,76,81,86,9 \\ 4,101,108,115,122,129,136,143,150,157,162 \\ , 167,172\left[\mathrm{~B} 23001 \_0 \mathrm{iE]}\right. \\ / \Sigma \mathrm{j}=07,08,14,15,21,22,28,29,35,36,42,43,49, \\ 50,56,57,63,64,70,71,75,76,80,81,85,86,93,9 \\ 4,100,101,107,108,114,115,121,122,128,129 \\ \text {,135,136,142,143,149,150,156,157,161,162, } \\ 166,167,171,172 \text { [B23001_0jE] } \\ \hline \end{array}$ |
| T/C/S AC18053 | Unemployment rate males 16 years and over | $\begin{aligned} & \left(\sum \mathrm{i}=08,15,22,29,36,43,50,57,64,71,76,81,86\right. \\ & \left.\left[\mathrm{B} 23001 \_0 \mathrm{O} \mathrm{E}\right]\right) /\left(\sum \mathrm{j}=07,08,14,15,21,22,28,29,\right. \\ & 35,36,42,43,49,50,56,57,63,64,70,71,75,76,8 \\ & \left.0,81,85,86\left[\mathrm{~B} 23001 \_0 \mathrm{OE}\right]\right) \\ & \hline \end{aligned}$ |
| T/C/S AC18054 | Unemployment rate females 16 years and over | $\begin{aligned} & \left(\sum \mathrm{i}=94,101,108,115,122,129,136,143,150,15\right. \\ & 7,162,167,172 \\ & \left.\left[\mathrm{~B} 23001 \_0 \mathrm{OiE}\right]\right) /\left(\sum \mathrm{j}=93,94,100,101,107,108,1\right. \\ & 14,115,121,122,128,129,135,136,142,143,14 \end{aligned}$ |

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|  |  | $\begin{aligned} & \text { 9,150,156,157,161,162,166,167,171,172 } \\ & \text { (B23001 OiE]) } \end{aligned}$ |
| :---: | :---: | :---: |
| T/C/S AC18055 | Labor force participation rate males 16 years and over | ( $\Sigma \mathrm{i}=04,11,18,25,32,39,46,53,60,67,74,79,84$ <br> [B23001_OiE])/B23001_002E |
| T/C/S AC18056 | Labor force participation rate females 16 years and over | $\begin{aligned} & \left(\sum \mathrm{i}=90,97,104,111,118,125,132,139,146,153\right. \\ & , 160,165,170 \text { [B23001_OiE])/B23001_088E } \end{aligned}$ |
| T/C/S AC18057 | Among children under 6 living with two parents, Proportion with both parents in the labor force | B23008_004E/B23008_003E |
| T/C/S AC18058 | Among children 6 to 17 living with two parents, Proportion with both parents in the labor force | B23008_017E/B23008_016E |
| T/C/S AC18059 | Proportion white alone males 16 years and over unemployed | $\begin{array}{\|l\|} \hline \text { (C23002A_08E+C23002A_13E)/(C23002A_06 } \\ \left.\mathrm{E}+\mathrm{C} 23002 \mathrm{~A} \_11 \mathrm{E}\right) \\ \hline \end{array}$ |
| T/C/S AC18060 | Proportion White alone females 16 years and over unemployed | $\begin{aligned} & \text { (C23002A_21E+C23002A_26E)/(C23002A_19 } \\ & \text { E+C23002A_24E) } \end{aligned}$ |
| T/C/S AC18061 | Proportion Black or African American alone males 16 years and over unemployed | $\begin{aligned} & \text { (C23002B_08E+C23002B_13E)/(C23002B_06 } \\ & \text { E+C23002B_11E) } \end{aligned}$ |
| T/C/S AC18062 | Proportion Black or African American alone females 16 years and over unemployed | $\begin{aligned} & \text { (C23002B_21E+C23002B_26E)/(C23002B_19 } \\ & \left.\mathrm{E}+\mathrm{C} 23002 \mathrm{~B} \_24 \mathrm{E}\right) \end{aligned}$ |
| T/C/S AC18063 | Proportion American Indian or Alaska native alone males 16 years and over unemployed | $\begin{aligned} & \text { (C23002C_08E+C23002C_13E)/(C23002C_06 } \\ & \text { E+C23002C_11E) } \end{aligned}$ |
| T/C/S AC18064 | Proportion American Indian or Alaska native alone females 16 years and over unemployed | $\begin{aligned} & \text { (C23002C_21E+C23002C_26E)/(C23002C_19 } \\ & \text { E+C23002C_24E) } \end{aligned}$ |
| T/C/S AC18065 | Proportion Asian or Pacific Islander alone males 16 years and over unemployed | $\begin{aligned} & \text { (C23002D_08E+C23004E_13E)/(C23002D_06 } \\ & \text { E+C23002E_11E) } \end{aligned}$ |
| T/C/S AC18066 | Proportion Asian or Pacific Islander alone females 16 years and over unemployed | $\begin{aligned} & \text { (C23002D_21E+C23002E_26E)/(C23002D_19 } \\ & \text { E+C23002E_24E) } \end{aligned}$ |
| T/C/S AC18067 | Proportion some other race alone males 16 years and over unemployed | $\begin{array}{\|l\|} \hline \text { (C23002F_08E+C23002F_13E)/(C23002F_06 } \\ \text { E+C23002F_11E) } \\ \hline \end{array}$ |
| T/C/S AC18068 | Proportion some other race alone females 16 years and over unemployed | ```(C23002F_21E+C23002F_26E)/(C23002F_19 E+C23002F_24E)``` |
| T/C/S AC18069 | Proportion two or more races males 16 years and over unemployed | $\begin{aligned} & \hline \text { (C23002G_08E+C23002G_13E)/(C23002G_0 } \\ & \left.6 \mathrm{E}+\mathrm{C} 23002 \mathrm{G} \_11 \mathrm{E}\right) \end{aligned}$ |
| T/C/S AC18070 | Proportion two or more races females 16 years and over unemployed | $\begin{aligned} & \text { (C23002G_21E+C23002G_26E)/(C23002G_1 } \\ & \left.9 \mathrm{E}+\mathrm{C} 23002 \mathrm{G} \_24 \mathrm{E}\right) \end{aligned}$ |
| T/C/S AC18071 | Proportion Hispanic or Latino males 16 years and over unemployed | $\begin{array}{\|l} \hline \text { (C23002I_08E+C23002I_13E)/(C23002I_06E } \\ \text { +C23002I_11E) } \end{array}$ |

[^1]| T/C/S AC18072 | Proportion Hispanic or Latino females 16 years and over unemployed | $\begin{array}{\|l\|} \hline \text { (C23002I_21E+C23002I_26E)/(C23002I_19E } \\ + \text { C23002I_24E) } \end{array}$ |
| :---: | :---: | :---: |
| T/C/S AC18073 | Proportion White alone not Hispanic or Latino males 16 years and over unemployed | $\begin{aligned} & \text { (C23002H_08E+C23002H_13E)/(C23002H_0 } \\ & \left.6 \mathrm{E}+\mathrm{C} 23002 \mathrm{H} \_11 \mathrm{E}\right) \end{aligned}$ |
| T/C/S AC18074 | Proportion White alone not Hispanic or Latino females 16 years and over unemployed | $\begin{aligned} & \text { (C23002H_21E+C23002H_26E)/(C23002H_1 } \\ & \left.9 \mathrm{E}+\mathrm{C} 23002 \mathrm{H} \_24 \mathrm{E}\right) \end{aligned}$ |
|  |  |  |
| Industries |  |  |
| T/C/S AC18075 | Proportion of employed 16 years and over in agriculture, forestry, fishing, hunting, and mining | (C24030_003E+C24030_030E)/C24030_001E |
| T/C/S AC18076 | Proportion of employed 16 years and over in construction | (C24030_006E+C24030_033E)/C24030_001E |
| T/C/S AC18077 | Proportion of employed 16 years and over in manufacturing | (C24030_007E+C24030_034E)/C24030_001E |
| T/C/S AC18078 | Proportion of employed 16 years and over in wholesale trade | (C24030_008E+C24030_035E)/C24030_001E |
| T/C/S AC18079 | Proportion of employed 16 years and over in retail trade | (C24030_009E+C24030_036E)/C24030_001E |
| T/C/S AC18080 | Proportion of employed 16 years and over in transportation, warehousing, and utilities | (C24030_010E+C24030_037E)/C24030_001E |
| T/C/S AC18081 | Proportion of employed 16 years and over in information | (C24030_013E+C24030_040E)/C24030_001E |
| T/C/S AC18082 | Proportion of employed 16 years and over in finance, insurance, and real estate | (C24030_014E+C24030_041E)/C24030_001E |
| T/C/S AC18083 | Proportion of employed 16 years and over in professional, scientific, management, administrative, and waste management services | (C24030_017E+C24030_044E)/C24030_001E |
| T/C/S AC18084 | Proportion of employed 16 years and over in educational, health, and social services | (C24030_021E+C24030_048E)/C24030_001E |
| T/C/S AC18085 | Proportion of employed 16 years and over in arts, entertainment, recreation, and food services | (C24030_024E+C24030_051E)/C24030_001E |
| T/C/S AC18086 | Proportion of employed 16 years and over in other services (does not include public administration) | (C24030_027E+C24030_054E)/C24030_001E |
| T/C/S AC18087 | Proportion of employed 16 years and over in public administration | (C24030_028E+C24030_055E)/C24030_001E |
|  |  |  |
| Occupations |  |  |

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| T/C/S AC18088 | Proportion of employed 16 years and over in management, professional, and related occupations | (C24010_003E+C24010_040E)/C24010_001E |
| :---: | :---: | :---: |
| T/C/S AC18089 | Proportion of employed 16 years and over in service occupations | (C24010_018E+C24010_055E)/C24010_001E |
| T/C/S AC18090 | Proportion of employed 16 years and over in sales and office occupations | (C24010_026E+C24010_063E)/C24010_001E |
| T/C/S AC18091 | Proportion of employed 16 years and over in farming, fishing, and forestry occupations | (C24010_029E+C24010_066E)/C24010_001E |
| T/C/S AC18092 | Proportion of employed 16 years and over in construction, extraction, and maintenance occupations | (C24010_030E+C24010_067E)/C24010_001E |
| T/C/S AC18093 | Proportion of employed 16 years and over in production, transportation, and material moving occupations | (C24010_033E+C24010_070E)/C24010_001E |
|  |  |  |
| Income and Poverty Status |  |  |
| T/C/S AC18094 | Median household income past 12 months | B19013_001E |
| T/C/S AC18095 | Proportion households receiving public assistance income past 12 months | B19057_002E/B19057_001E |
| T/C/S AC18096 | Median family income past 12 months | B19113_001E |
| T/C/S AC18097 | Proportion families with incomes less than $\$ 15 \mathrm{~K}$ past 12 months | $\begin{aligned} & \text { (B19101_002E+B19101_003E)/B19101_001 } \\ & \text { E } \end{aligned}$ |
| T/C/S AC18098 | Proportion families with incomes less than $\$ 25 \mathrm{~K}$ past 12 months | $\begin{aligned} & \text { (B19101_02E+...+B19101_05E)/B19101_001 } \\ & \text { E } \end{aligned}$ |
| T/C/S AC18099 | Proportion families with incomes greater than \$50K past 12 months | $\begin{aligned} & \text { (B19101_11E+...+B19101_17E)/B19101_001 } \\ & \text { E } \end{aligned}$ |
| T/C/S AC18100 | Proportion families with incomes greater than $\$ 75 \mathrm{~K}$ past 12 months | (B19101_13E+B19101_17E)/B19101_001E |
| T/C/S AC18101 | Per capita income past 12 months | B19301_001E |
| T/C/S AC18102 | Median earnings 16 years and over past 12 months | B20002_001E |
| T/C/S AC18103 | Median earnings males 16 years and over past 12 months | B20002_002E |
| T/C/S AC18104 | Median earnings females 16 years and over in past 12 months | B20002_003E |
| T/C/S AC18105 | Proportion population below the poverty level in past 12 months | B17001_002E/B17001_001E |
| T/C/S AC18106 | Proportion families below the poverty level in past 12 months | B17010_002E/B17010_001E |
| T/C/S AC18107 | Proportion households below the poverty level in past 12 months | B17017_002E/B17017_001E |

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| Unmarried-Partner Households |  |  |
| :---: | :---: | :---: |
| T/C/S AC18108 | Proportion households headed by same sex unmarried partners | B11009_003E+B11009_005E/B11009_001E |
| T/C/S AC18109 | Proportion households headed by opposite sex unmarried partners | B11009_004E+B11009_006E/B11009_001E |
| T/C/S AC18110 | Proportion males ages 18 and 19 never married | $\begin{array}{\|l} \hline \text { B12002_005E/( } \sum \mathrm{i}=05,21,37,52,67,82 \\ \text { [B12002_00iE]) } \\ \hline \end{array}$ |
| T/C/S AC18111 | Proportion males ages 20 to 24 never married | $\begin{array}{\|l} \hline \text { B12002_006E/( } \sum \mathrm{i}=06,022,38,53,68,83 \\ \text { [B12002_00iE]) } \\ \hline \end{array}$ |
| T/C/S AC18112 | Proportion females ages 18 and 19 never married | $\begin{array}{\|l\|} \hline \text { B12002_0098E/( } \sum \mathrm{i}=98,114,130,145,160,175[ \\ \text { B12002_00iE]) } \\ \hline \end{array}$ |
| T/C/S AC18113 | Proportion females ages 20 to 24 never married |  |
|  |  |  |
| Housing Characteristics |  |  |
| T/C/S AC18114 | Proportion housing units vacant | B25002_003E/B25002_001E |
| T/C/S AC18115 | Proportion occupied units owner occupied | B25003_002E/B25003_001E |
| T/C/S AC18116 | Average household size of occupied units | B25010_001E |
| T/C/S AC18117 | Median year housing unit structures built | B25035_001E |
| T/C/S AC18118 | Median year householders moved into units | B25039_001E |
| T/C/S AC18119 | Proportion occupied units with no telephone service available | $\begin{array}{\|l\|} \hline \begin{array}{l} \text { (B25043_007E+B25043_016E)/B25043_001 } \\ \mathrm{E} \end{array} \\ \hline \end{array}$ |
| T/C/S AC18120 | Proportion occupied units with no vehicles available | $\begin{array}{\|l} \hline \text { (B25044_003E+B25044_010E)/B25044_001 } \\ \text { E } \\ \hline \end{array}$ |
| T/C/S AC18121 | Proportion units lacking complete plumbing facilities | B25047_003E/B25047_001E |
| T/C/S AC18122 | Proportion units lacking complete kitchen facilities | B25051_003E/B25051_001E |
| T/C/S AC18123 | Median contract rent for renteroccupied units paying cash rent | B25058_001E |
| T/C/S AC18124 | Median value for specified owneroccupied units | B25077_001E |
|  |  |  |
| Enrolled to Formal Education System |  |  |
| T/C/S AC18125 | Proportion population enrolled in pre-elementary and elementary education | (B14001_03E+B14001_04E+B14001_05E)/B $14001 \_001 \mathrm{E}$ |
| T/C/S AC18126 | Proportion population enrolled in mid or high school education | (B14001_06E+B14001_07E)/B14001_001E |


| T/C/S AC18127 | Proportion population enrolled in college, graduate or professional education | (B14001_08E+B14001_09E)/B14001_001E |
| :---: | :---: | :---: |
| Transportation to Work |  |  |
| T/C/S AC18128 | Proportion using car, truck, or van | B08006_002E/B08006_001E |
| T/C/S AC18129 | Proportion using public transportation (excluding taxicab) | B08006_008E/B08006_001E |
| T/C/S AC18130 | Proportion bicycle | B08006_014E/B08006_001E |
| T/C/S AC18131 | Proportion walked | B08006_015E/B08006_001E |
| T/C/S AC18132 | Proportion using taxicab, motorcycle, or other means | B08006_016E/B08006_001E |
| 1981-2010 U.S. Climate Atlas |  |  |
| NCA10133 | Mean number of days with Temperature < 320 F | Spatial join between Number of Days with Temperatures <= 32 layer and Respondent location |
| NCA10134 | Mean number of days with temperature $\mathbf{>} 900 \mathrm{~F}$ | Spatial join between Mean Number of Days with Temperatures >= 90 layer and Respondent location |
| NCA10135 | Mean maximum daily temperatures | Spatial join between Mean Daily Maximum Temperature layer and Respondent location |
| NCA10136 | Mean minimum daily temperatures | Spatial join between Mean Daily Maximum Temperature layer and Respondent location |
| NCA10137 | Mean precipitation | Spatial join between Mean Maximum Daily Precipitation layer and Respondent location |
| NCA10138 | Mean snowfalls | Spatial join between Mean Maximum Daily Snowfall layer and Respondent location |
| RUCA (Rural-Urban Commuting Area) Codes |  |  |
| TER10156 | RUCA primary code 2010 | RUCA Primary Code 2010 in RUCA files |
| TER10157 | RUCA secondary code 2010 | RUCA Secondary Code 2010 in RUCA files |
| Crime Rates from UCR |  |  |
| CUC16161 | Coverage indicator, 2016 (see source description) | COVIND |
| CUC16162 | Adult total arrests per 100,000 population, 2016 | (P1TOT/CPOPARST) * 100000 |
| CUC16163 | Adult violent arrests per 100,000 population, 2016 | (P1VLNT/CPOPARST) * 100000 |
| CUC16164 | Adult property arrests per 100,000 population, 2016 | (P1PRPTY/CPOPARST) * 100000 |

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## 2018 ACS, 5-Year Estimate Margin of Error

All of the census data in this contextual database originate from the Census Bureau's ACS 5-year estimates aggregated from 2014-2018. The ACS replaces the decennial census' long-form questionnaires, which gathered data once every ten years from about 1 in every 6 households. Unlike the decennial census, the ACS collects data continuously, though releases it annually, with addresses having a 1-in-40 chance of selection in a given year. As the number of years comprising a measured period increase, the sample size grows, and, consequently, sampling error improves. The accumulated five year sample should, therefore, include approximately 1 in 9 households ${ }^{1,2}$. To improve data quality, the Census Bureau only releases 1year estimates for areas with populations equaling or exceeding 65,000 persons; therefore, the 1-year data exclude estimates for measures at the tract-level ${ }^{3}$.

Despite the Census Bureau's efforts to reduce sampling error by restricting release of certain geographic areas, these areas may still have significantly small samples even in the aggregated 5-year data. In order to provide users an indication of an estimate's precision, the U.S. Census Bureau includes the margin of error (MOE) corresponding to the 90-percent confidence level for each tract-level estimate comprising the 2018 ACS data. The boundaries for the 90-percent confidence interval for any sample estimate can be derived by subtraction of the MOE from the estimate to obtain the interval's lower-bound and addition of the MOE to obtain its upper-bound. Accordingly, the actual population estimate should fall within the range defined by the lower- and upper-bounds 90 percent of the time ${ }^{4}$.

To afford users of the Wave V Tract-Level Contextual database a similar indication of value precision, the provided data file includes the MOE of contextual measures derived from ACS estimates. Deriving the MOE for the constructed proportions follows steps used in the production of Tract3 and Tract4. They are chiefly prescribed by the Census and involve the calculation of the MOE for aggregates, proportions, and, under certain circumstances, ratios ${ }^{4}$.

## Calculation of the MOEs of Aggregated Count Data involves:

1. Obtaining the MOE of each component estimate.
2. Squaring the MOE of each component estimate.
3. Summing the squared MOEs.
4. Taking the square root of the sum of squared $\mathrm{MOEs}^{4}$.

$$
M O E_{a g g}= \pm \sqrt{\sum_{c} M O E_{c}^{2}}
$$

To calculate the MOEs of Derived Proportions (the numerator of a proportion is a subset of the denominator):

1. Obtain the MOE for the numerator and the MOE for the denominator of the proportion.
2. Square the derived proportion.
3. Square the MOE of the numerator.
4. Square the MOE of the denominator.
5. Multiply the squared MOE of the denominator by the squared proportion.
6. Subtract the result of (5) from the squared MOE of the numerator.
7. Take the square root of the result of (6).
8. Divide the result of (7) by the denominator of the proportion.


The calculation of the MOEs for derived ratios (the numerator of a proportion is not a subset of the denominator) resembles the steps for calculating the MOEs of derived proportions, except step (6) changes from subtraction to addition of (5) to the MOE of the numerator.

$$
M O E_{R}=\frac{ \pm \sqrt{M O E_{\text {num }}^{2}+\left(\hat{R}^{2} * M O E_{d e n}^{2}\right)}}{\hat{X}_{d e n}}
$$

Certain conditions characteristic of these data necessitate applying additional steps during the MOE variable construction process.

Step 1. When multiple estimates involved in the derivation of the proportion equal zero, only 1 of their MOEs appears in the calculation, as recommended in the American Community Survey Multiyear ACS Accuracy of Data (5-year 2014-2018):

With the release of the 5-year data, detailed tables down to tract and block group will be available. At these geographic levels, many estimates may be zero. As mentioned in the 'Calculations of Standard Errors' section, a special procedure is used to estimate the MOE when an estimate is zero. For a given geographic level, the MOEs will be identical for zero estimates. When summing estimates which include many zero values, the standard error and MOE in general will become unnaturally inflated. Therefore, users are advised to sum only one of the MOEs from all of the zero estimates ${ }^{5}$.

Step 2. If the value under the square root (6) yields a negative number or a zero (the denominator and numerator are equal), use addition rather than subtraction in the radical. In other words, apply the more conservative formula for deriving the MOE of a ratio rather than the MOE of a proportion:

If the value under the radical is negative, use the ratio standard error formula ${ }^{5}$.

Step 3. Should estimates equal zero, then they are uniformly recoded to one, in order to avoid division by zero, per the Hazards and Vulnerabilities Research Institute:

Where the variable estimates were zero, we used a value of one instead to allow calculation of margins of error ${ }^{6}$.

Occasionally, the MOE exceeds the variable's acceptable range of values. For instance, in certain circumstances, a constructed proportion's MOE exceeds one. Since proportions vary between 0 and 1, a MOE of 5 would prove nonsensical when calculating an estimate's lower- and upper-bounds; however, such a large value does suffice in providing a warning to the user regarding the estimate's quality.

If a user prefers a confidence level other than the 90-percent level used in these data, simply multiplying the provided MOE by an established adjustment factor will convert it to the sought confidence level. The adjustment factor equals the factor associated with the desired MOE divided by the factor corresponding to the current MOE, which, in the ACS data, equals 1.645. Two other common confidence levels are 95and 99-percent, which have corresponding factors of 1.960 and 2.576 , respectively ${ }^{7}$.

To obtain the standard error for the ACS derived values, divide the reported MOE by its corresponding factor, 1.64520.

The MOE also allows for the determination of an estimate's reliability through the calculation of its more intuitive coefficient of variance (CV). The CV essentially reports the percentage of an estimate determined by error. The formula below calculates an estimate's CV when using the 90-percent confidence level ${ }^{8}$ :

$$
C V=\left(\frac{(M O E / 1.645)}{\text { Estimate }}\right) \times 100
$$

Esri recommends the following estimate reliability rankings:

High Reliability: A small CV of less than or equal to 12 percent denotes a minor amount of error.

Medium Reliability: Estimates with a CV falling in the range of 12 to 40 percent have moderate error.

Low Reliability: A large CV exceeds 40 percent and indicates an unreliable estimate ${ }^{7}$.

[^3]Notes

1. U.S. Census Bureau, Understanding and Using American Community Survey Data: What All Data Users Need to Know, U.S. Government Publishing Office, Washington, DC, 2020.
2. Navarro, A. (2010). The ACS: Fulfilling its Promise to Data Users [PowerPoint slides]. Retrieved from http://apdu.org/wp-content/uploads/2011/12/Navarro_APDU-Fall2010.ppt
3. Citro, C.F. \& Kalton, G.(2007). Using the American Community Survey: Benefits and Challenges. Retrieved from www.nap.edu
4. U.S. Census Bureau, Understanding and Using American Community Survey Data: What All Data Users Need to Know, U.S. Government Publishing Office, Washington, DC, 2020.
5. U.S. Census Bureau, American Community Survey Office (2011, 19 September). American Community Survey Multiyear Accuracy of the Data (3-year 2008-2010 and 5-year 2006-2010). Retrieved from http://www.census.gov/acs/www/Downloads/data_documentation/Accuracy/MultiyearACSAccur acyofData2010.pdf
6. Hazards \& Vulnerability Research Institute, Department of Geography, University of South Carolina, Columbia (2012, 30 May). Error Calculation Process for SoVI ${ }^{\circledR}$ 2005-09 Using the American Community Survey. Retrieved from http://webra.cas.sc.edu/hvri/products/sovi_0509_error.aspx
7. U.S. Census Bureau, U.S. Government Printing Office, Washington, DC (2009, May). A Compass for Understanding and Using American Community Survey Data: What Researchers Need to Know. Retrieved from http://www.census.gov/acs/www/Downloads/handbooks/ACSResearch.pdf
8. Esri (2011, April). White Paper: The American Community Survey. Retrieved from http://www.esri.com/library/whitepapers/pdfs/the-american-community-survey.pdf

## Missing codes

Though the US Census uses sequences of nines to denote values falling into the lowest category of an open-ended distribution (e.g., 9999 indicating less than 10,000 ) and a terminal digit of 1 to denote values that fall into the highest category of an open-ended distribution (e.g., 1000001 indicating more than $1,000,000)$, Add Health top- and bottom-coded variables independently of the U.S. Census Bureau.

Three missing data codes are used in Wave V contextual files. They are as follows:

| Value | Reason for missing data |
| :--- | :--- |
| 92 (or 992, $9992, \ldots 99992$ ) | Cannot be calculated |
| 96 (or $996,9996, . .99996$ ) | Missing in the source data |
| 98 (or $998,9998, . .99998$ ) | Geocode missing |

Values that cannot be calculated due to missing data or bottom and top coding are represented by 92 , 992 , etc. The replacement codes of 96,996 , etc. indicate that data were not available for that particular variable, year, and/or summary level from the original source data. See the source notes for more information. A value of 98,998 , etc. indicates that the geocode is missing for that respondent at Wave $V$

## Source Description

This subsection describes each one of the sources used for the generation of the contextual variables comprising the data file; in the cases where it applies, a sub-directory of the variables used for the generation of the contextual information is presented; in other cases, an explanation about the generation of the variables is provided.

AC 2018 American Community Survey 5-Year Estimates
CA Climate Atlas of the United States
ER U.S. Department of Agriculture's Economics Research Service
UC Uniform Crime Reports

The American Community Survey (ACS) is a household survey conducted by the U.S. Census Bureau. The annual sample size of the survey is about 3 million addresses. An annual ACS represents a sample of only $2.5 \%$ of the U.S. population; nevertheless, at the end of a five year round, the cumulated sample is $12.5 \%$ of the U.S. population. Starting in 2006, with 2005 survey data, the ACS began releasing 1-year estimates every year; starting in 2008, with the addition of 2006 and 2007 data, it released 3-year estimates every year; and starting in 2010, with 2005 through 2009 data, it released 5-year estimates every year. All the ACS derived variables in these Add Health data are based on the 2018 ACS 5-Year Estimate Summary File. This file contains information on a wide range of topics that cover various demographic, social, and economic characteristics defining population and housing. Due to the increased sample size provided by the aggregated 5-year estimates, they serve as the only source of Census data covering topics of interest to Add Health that are measured at smaller geographic levels, such as the census tract.

Concern has arisen over inconsistency between the Census 2000 and 2009 ACS 5-year data and the deleterious effect such differences may have on the latter's estimate quality. Indeed, although the ACS provides data similar to that collected by the long-form of the decennial census, some fundamental distinctions between the two data sources exist. The nature, perhaps more so than the extent, of these changes may warrant viewing the ACS as a new survey distinct from the traditional U.S. Census data used in constructing Add Health's CONTEXT1, CONTEXT2, and CONTEXT3 data files. In fact, use of the word "replacement" has received critical attention, for it erroneously implies the interchangeability of the ACS and Census long- form7. Some differences relevant to this Add Health release involve sample size, the nature of period estimates, residence rules, reference periods, and definitions.

The CONTEXT5 data, however, are compatible with the TRACT3, TRACT4, and CONTEXT4 files.

## Sample Size

The ACS' annual sample consists of 1 in 40 households, compared to the decennial census' 1 in $6 .{ }^{1}$

## Period Estimates

ACS data products are period estimates that compile 12, 36 , and 60 months of data for 1-year, 3-year, and 5 -year periods, respectively. This method of continuous measurement precludes using ACS data as a point estimate, which renders the variables somewhat less intuitive temporally. For example, the 2018 ACS 5year data measure the period of 2014 to 2018. That is, they do not measure year 2014, year 2018, or the midpoint between 2014 and 2018, but rather, the entire span. A limitation of period estimates rests in their inability to detect major fluctuations within the time span measured. Period estimates tend to smooth curves of change ${ }^{1}$. This limitation may function as an asset to researchers seeking a general description of Add Health respondents' environments in the period of time preceding the Wave V in-home interview.

## Residence Rules

The ACS residence rule requires that data be collected on anyone "living or staying" at an address for more than 2 months, whereas the decennial long-form obtains data on anyone who "usually" lives at a given address as of April 1st of a census year. This discrepancy in rules results from the disparate goals of the U.S. decennial census and ACS, which further exacerbate differences in their samples. Increasing consistency with the decennial census sample, the ACS began surveying group quarters in 2006.

[^4]
## Reference Periods

In addition to residency, several other items on the two surveys differ in their reference periods. For example,
[Usual] hours worked per week, weeks worked per year, and income items on the ACS refer to the 12 months prior to the day when the household filled out the questionnaire, whereas these items on the long form always referred to the previous calendar year (1999 for the 2000 census) ${ }^{2}$.

Similarly, the ACS uses the last 3-months as the reference period for determining school enrollment, while the 2000 Census' long-form inquired about any enrollment since February 1st of that year.

## Item Inconsistency

From one survey to another, particular questions may undergo straightforward wording or response category alteration. The use of period estimates, discrepant residency rules, and differing reference periods, also impacts certain items more than others. The U.S. Census Bureau has provided several tables listing recommendations regarding the comparison of variables common to both the 2000 Census and the ACS surveys. Some topics deserving attention when making comparisons across waves include: age and sex; race; Hispanic origin, migration; children, households, and families; income and poverty; and industry and occupation.

For additional information, consult the various resources provided by the U.S. Census Bureau ${ }^{3}$.

[^5]The following table presents an index of the various 2018 ACS 5-year estimates used in the generation of the contextual variables comprising this file.

Table 2: 2018 American Community Survey 5-year estimates

| Source <br> Variable <br> Name | Description |
| :--- | :--- |
| B01003001 | Total population |
|  |  |
| B02001002 | White alone |
| B02001003 | Black or African American alone |
| B02001004 | American Indian and Alaska Native alone |
| B02001005 | Asian alone |
| B02001006 | Native Hawaiian and Other Pacific Islander alone |
| B02001007 | Some other race alone |
| B02001008 | Two or more races: |
|  |  |
| B03002001 | Total population |
| B03002012 | Hispanic or Latino |
| B03002013 | Hispanic or Latino, White alone |
| B03002014 | Hispanic or Latino, Black or African American alone |
| B03002015 | Hispanic or Latino, American Indian and Alaska Native alone |
| B03002016 | Hispanic or Latino, Asian alone |
| B03002017 | Hispanic or Latino, Native Hawaiian and Other Pacific Islander alone |
| B03002018 | Hispanic or Latino, some other race alone |
| B03002019 | Hispanic or Latino, two or more races |
|  |  |
| B01001001 | Total population |
| B01001003 | Male, under 5 years |
| B01001004 | Male, 5 to 9 years |
| B01001005 | Male, 10 to 14 years |
| B01001006 | Male, 15 to 17 years |
| B01001007 | Male, 18 and 19 years |
| B01001008 | Male, 20 years |
| B01001009 | Male, 21 years |
| B01001010 | Male, 22 to 24 years |
| B01001011 | Male, 25 to 29 years |
| B01001012 | Male, 30 to 34 years |
| B01001013 | Male, 35 to 39 years |
| B01001014 | Male, 40 to 44 years |
| B01001015 | Male, 45 to 49 years |
| B01001016 | Male, 50 to 54 years |
| B01001017 | Male, 55 to 59 years |
| B01001018 | Male, 60 and 61 years |
| B01001019 | Male, 62 to 64 years |
|  |  |

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| B01001020 | Male, 65 and 66 years |
| :--- | :--- |
| B01001021 | Male, 67 to 69 years |
| B01001022 | Male, 70 to 74 years |
| B01001023 | Male, 75 to 79 years |
| B01001024 | Male, 80 to 84 years |
| B01001025 | Male, 85 years and over |
| B01001027 | Female, under 5 years |
| B01001028 | Female, 5 to 9 years |
| B01001029 | Female, 10 to 14 years |
| B01001030 | Female, 15 to 17 years |
| B01001031 | Female, 18 and 19 years |
| B01001032 | Female, 20 years |
| B01001033 | Female, 21 years |
| B01001034 | Female, 22 to 24 years |
| B01001035 | Female, 25 to 29 years |
| B01001036 | Female, 30 to 34 years |
| B01001037 | Female, 35 to 39 years |
| B01001038 | Female, 40 to 44 years |
| B01001039 | Female, 45 to 49 years |
| B01001040 | Female, 50 to 54 years |
| B01001041 | Female, 55 to 59 years |
| B01001042 | Female, 60 and 61 years |
| B01001043 | Female, 62 to 64 years |
| B01001044 | Female, 65 and 66 years |
| B01001045 | Female, 67 to 69 years |
| B01001046 | Female, 70 to 74 years |
| B01001047 | Female, 75 to 79 years |
| B01001048 | Female, 80 to 84 years |
| B01001049 | Female, 85 years and over |
| B01001A007 | White male, 18 and 19 years |
| B01001A008 | White male, 20 to 24 years |
| B01001A022 | White female, 18 and 19 years |
| B01001A023 | White female, 20 to 24 years |
| B01001B007 | Black or African American male, 18 and 19 years |
| B01001B008 | Black or African American male, 20 to 24 years |
| B01001B022 | Black or African American female, 18 and 19 years |
| B01001B023 | Black or African American female, 20 to 24 years |
| B01001C007 | American Indian and Alaska Native, 18 and 19 years |
| B01001C008 | American Indian and Alaska Native, 20 to 24 years |
| B01001C022 | American Indian and Alaska Native female, 18 and 19 years |
| B01001C023 | American Indian and Alaska Native female, 20 to 24 years |
| B01001D007 | Asian male, 18 and 19 years |
| B01001D008 | Asian male, 20 to 24 years |
| B01001D022 | Asian female, 18 and 19 years |
| B01001D023 | Asian female, 20 to 24 years |

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| B01001E007 | Native Hawaiian and Other Pacific Islander male, 18 and 19 years |
| :---: | :---: |
| B01001E008 | Native Hawaiian and Other Pacific Islander male, 20 to 24 years |
| B01001E022 | Native Hawaiian and Other Pacific Islander female, 18 and 19 years |
| B01001E023 | Native Hawaiian and Other Pacific Islander female, 20 to 24 years |
| B01001F007 | Some other race male, 18 and 19 years |
| B01001F008 | Some other race male, 20 to 24 years |
| B01001F022 | Some other race female, 18 and 19 years |
| B01001F023 | Some other race female, 20 to 24 years |
| B01001G007 | Male two or more races, 18 and 19 years |
| B01001G008 | Male two or more races, 20 to 24 years |
| B01001G022 | Female two or more races, 18 and 19 years |
| B01001G023 | Female two or more races, 20 to 24 years |
| B010011007 | Hispanic or Latino male, 18 and 19 years |
| B010011008 | Hispanic or Latino male, 20 to 24 years |
| B010011022 | Hispanic or Latino female, 18 and 19 years |
| B010011023 | Hispanic or Latino female, 20 to 24 years |
| B01001H007 | White alone, not Hispanic or Latino male, 18 and 19 years |
| B01001H008 | White alone, not Hispanic or Latino male, 20 to 24 years |
| B01001H022 | White alone, not Hispanic or Latino female, 18 and 19 years |
| B01001H023 | White alone, not Hispanic or Latino female, 20 to 24 years |
| B25115001 | Occupied housing units |
| B25115005 | Married-couple owner occupied housing units, with own children under 18 |
| B25115009 | Owner occupied housing units, male householder, no wife present, with own children under 18 |
| B25115012 | Owner occupied housing units, female householder, no wife present, with own children under 18 |
| B25115014 | Owner occupied housing units, nonfamily households |
| B25115018 | Renter occupied housing units with own children under 18 years (married-couple family) |
| B25115022 | Married-couple renter occupied housing units, with own children under 18 |
| B25115025 | Renter occupied housing units, male householder, no wife present, with own children under 18 |
| B25115027 | Renter occupied housing units, female householder, no wife present, with own children under 18 |
| B11003003 | Married couple families, with own children under 18 years |
| B11003010 | Male householder, no wife present, with own children under 18 years |
| B11003016 | Female householder, no husband present, with own children under 18 years |
| B12001001 | Population 15 years and over |
| B12001007 | Male, 15 years and over, married, spouse absent, separated |
| B12001010 | Male, 15 years and over, divorced |
| B12001016 | Female, 15 years and over, married, spouse absent, separated |
| B12001019 | Female, 15 years and over, divorced |
|  |  |

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| B16002001 | Total households |
| :---: | :---: |
| B16002004 | Spanish language spoken at home, linguistically isolated |
| B16002007 | Other Indo-European languages spoken at home, linguistically isolated |
| B16002010 | Asian and Pacific Island languages spoken at home, linguistically isolated |
| B16002013 | Other languages spoken at home, linguistically isolated |
| B05012001 | Total population |
| B05012003 | Foreign-Born |
| B23001002 | Male, 16 years and over |
| B23001004 | Male, 16 to 19 years, in labor force |
| B23001005 | Male, 16 to 19 years, in labor force, in Armed Forces |
| B23001006 | Male, 16 to 19 years, in labor force, civilian |
| B23001007 | Male, 16 to 19 years, in labor force, civilian, employed |
| B23001008 | Male, 16 to 19 years, in labor force, civilian, unemployed |
| B23001009 | Male, 16 to 19 years, not in labor force |
| B23001011 | Male, 20 and 21 years, in labor force |
| B23001012 | Male, 20 and 21 years, in labor force, in Armed Forces |
| B23001013 | Male, 20 and 21 years, in labor force, civilian |
| B23001014 | Male, 20 and 21 years, in labor force, civilian, employed |
| B23001015 | Male, 20 and 21 years, in labor force, civilian, unemployed |
| B23001016 | Male, 20 and 21 years, not in labor force |
| B23001018 | Male, 22 to 24 years, in labor force: |
| B23001019 | Male, 22 to 24 years, in Armed Forces |
| B23001020 | Male, 22 to 24 years, civilian |
| B23001021 | Male, 22 to 24 years, civilian employed |
| B23001022 | Male, 22 to 24 years, civilian unemployed |
| B23001023 | Male, 22 to 24 years, not in labor force |
| B23001025 | Male, 25 to 29 years, in labor force |
| B23001026 | Male, 25 to 29 years, in labor force, in Armed Forces |
| B23001027 | Male, 25 to 29 years, in labor force, civilian |
| B23001028 | Male, 25 to 29 years, in labor force, civilian, employed |
| B23001029 | Male, 25 to 29 years, in labor force, civilian, unemployed |
| B23001030 | Male, 25 to 29 years, not in labor force |
| B23001032 | Male, 30 to 34 years, in labor force |
| B23001033 | Male, 30 to 34 years, in labor force, in Armed Forces |
| B23001034 | Male, 30 to 34 years, in labor force, civilian |
| B23001035 | Male, 30 to 34 years, in labor force, civilian, employed |
| B23001036 | Male, 30 to 34 years, in labor force, civilian, unemployed |
| B23001037 | Male, 30 to 34 years, not in labor force |
| B23001039 | Male, 35 to 44 years, in labor force |
| B23001040 | Male, 35 to 44 years, in labor force, in Armed Forces |
| B23001041 | Male, 35 to 44 years, in labor force, civilian |
| B23001042 | Male, 35 to 44 years, in labor force, civilian, employed |
| B23001043 | Male, 35 to 44 years, in labor force, civilian, unemployed |
| B23001044 | Male, 35 to 44 years, not in labor force |

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| B23001046 | Male, 45 to 54 years, in labor force |
| :---: | :---: |
| B23001047 | Male, 45 to 54 years, in labor force, in Armed Forces |
| B23001048 | Male, 45 to 54 years, in labor force, civilian |
| B23001049 | Male, 45 to 54 years, in labor force, civilian, employed |
| B23001050 | Male, 45 to 54 years, in labor force, civilian, unemployed |
| B23001051 | Male, 45 to 54 years, not in labor force |
| B23001053 | Male, 55 to 59 years, in labor force |
| B23001054 | Male, 55 to 59 years, in labor force, in Armed Forces |
| B23001055 | Male, 55 to 59 years, in labor force, civilian |
| B23001056 | Male, 55 to 59 years, in labor force, civilian, employed |
| B23001057 | Male, 55 to 59 years, in labor force, civilian, unemployed |
| B23001058 | Male, 55 to 59 years, not in labor force |
| B23001060 | Male, 60 and 61 years, in labor force |
| B23001061 | Male, 60 and 61 years, in labor force, in Armed Forces |
| B23001062 | Male, 60 and 61 years, in labor force, civilian |
| B23001063 | Male, 60 and 61 years, in labor force, civilian, employed |
| B23001064 | Male, 60 and 61 years, in labor force, civilian, unemployed |
| B23001065 | Male, 60 and 61 years, not in labor force |
| B23001067 | Male, 62 to 64 years, in labor force |
| B23001068 | Male, 62 to 64 years, in labor force, in Armed Forces |
| B23001069 | Male, 62 to 64 years, in labor force, civilian |
| B23001070 | Male, 62 to 64 years, in labor force, civilian, employed |
| B23001071 | Male, 62 to 64 years, in labor force, civilian, unemployed |
| B23001072 | Male, 62 to 64 years, not in labor force |
| B23001074 | Male, 65 to 69 years, in labor force |
| B23001075 | Male, 65 to 69 years, in labor force, employed |
| B23001076 | Male, 65 to 69 years, in labor force, unemployed |
| B23001077 | Male, 65 to 69 years, not in labor force |
| B23001079 | Male, 70 to 74 years, in labor force |
| B23001080 | Male, 70 to 74 years, in labor force, employed |
| B23001081 | Male, 70 to 74 years, in labor force, unemployed |
| B23001082 | Male, 70 to 74 years, not in labor force |
| B23001084 | Male, 75 years and over, in labor force |
| B23001085 | Male, 75 years and over, in labor force, employed |
| B23001086 | Male, 75 years and over, in labor force, unemployed |
| B23001087 | Male, 75 years and over, not in labor force |
| B23001090 | Female, 16 to 19 years, in labor force |
| B23001091 | Female, 16 to 19 years, in labor force, in Armed Forces |
| B23001092 | Female, 16 to 19 years, in labor force, civilian |
| B23001093 | Female, 16 to 19 years, in labor force, civilian, employed |
| B23001094 | Female, 16 to 19 years, in labor force, civilian, unemployed |
| B23001095 | Female, 16 to 19 years, not in labor force |
| B23001097 | Female, 20 and 21 years, in labor force |
| B23001098 | Female, 20 and 21 years, in labor force, in Armed Forces |
| B23001099 | Female, 20 and 21 years, in labor force, civilian |
| B23001100 | Female, 20 and 21 years, in labor force, civilian, employed |

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| B23001101 | Female, 20 and 21 years, in labor force, civilian, unemployed |
| :---: | :---: |
| B23001102 | Female, 20 and 21 years, not in labor force |
| B23001104 | Female, 22 to 24 years, in labor force: |
| B23001105 | Female, 22 to 24 years, in Armed Forces |
| B23001106 | Female, 22 to 24 years, civilian |
| B23001107 | Female, 22 to 24 years, civilian employed |
| B23001108 | Female, 22 to 24 years, civilian unemployed |
| B23001109 | Female, 22 to 24 years, not in labor force |
| B23001111 | Female, 25 to 29 years, in labor force |
| B23001112 | Female, 25 to 29 years, in labor force, in Armed Forces |
| B23001113 | Female, 25 to 29 years, in labor force, civilian |
| B23001114 | Female, 25 to 29 years, in labor force, civilian, employed |
| B23001115 | Female, 25 to 29 years, in labor force, civilian, unemployed |
| B23001116 | Female, 25 to 29 years, not in labor force |
| B23001118 | Female, 30 to 34 years, in labor force |
| B23001119 | Female, 30 to 34 years, in labor force, in Armed Forces |
| B23001120 | Female, 30 to 34 years, in labor force, civilian |
| B23001121 | Female, 30 to 34 years, in labor force, civilian, employed |
| B23001122 | Female, 30 to 34 years, in labor force, civilian, unemployed |
| B23001123 | Female, 30 to 34 years, not in labor force |
| B23001125 | Female, 35 to 44 years, in labor force |
| B23001126 | Female, 35 to 44 years, in labor force, in Armed Forces |
| B23001127 | Female, 35 to 44 years, in labor force, civilian |
| B23001128 | Female, 35 to 44 years, in labor force, civilian, employed |
| B23001129 | Female, 35 to 44 years, in labor force, civilian, unemployed |
| B23001130 | Female, 35 to 44 years, not in labor force |
| B23001132 | Female, 45 to 54 years, in labor force |
| B23001133 | Female, 45 to 54 years, in labor force, in Armed Forces |
| B23001134 | Female, 45 to 54 years, in labor force, civilian |
| B23001135 | Female, 45 to 54 years, in labor force, civilian, employed |
| B23001136 | Female, 45 to 54 years, in labor force, civilian, unemployed |
| B23001137 | Female, 45 to 54 years, not in labor force |
| B23001139 | Female, 55 to 59 years, in labor force |
| B23001140 | Female, 55 to 59 years, in labor force, in Armed Forces |
| B23001141 | Female, 55 to 59 years, in labor force, civilian |
| B23001142 | Female, 55 to 59 years, in labor force, civilian, employed |
| B23001143 | Female, 55 to 59 years, in labor force, civilian, unemployed |
| B23001144 | Female, 55 to 59 years, not in labor force |
| B23001146 | Female, 60 and 61 years, in labor force |
| B23001147 | Female, 60 and 61 years, in labor force, in Armed Forces |
| B23001148 | Female, 60 and 61 years, in labor force, civilian |
| B23001149 | Female, 60 and 61 years, in labor force, civilian, employed |
| B23001150 | Female, 60 and 61 years, in labor force, civilian, unemployed |
| B23001151 | Female, 60 and 61 years, not in labor force |
| B23001153 | Female, 62 to 64 years, in labor force |
| B23001154 | Female, 62 to 64 years, in labor force, in Armed Forces |

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| B23001155 | Female, 62 to 64 years, in labor force, civilian |
| :---: | :---: |
| B23001156 | Female, 62 to 64 years, in labor force, civilian, employed |
| B23001157 | Female, 62 to 64 years, in labor force, civilian, unemployed |
| B23001158 | Female, 62 to 64 years, not in labor force |
| B23001160 | Female, 65 to 69 years, in labor force |
| B23001161 | Female, 65 to 69 years, in labor force, employed |
| B23001162 | Female, 65 to 69 years, in labor force, unemployed |
| B23001163 | Female, 65 to 69 years, not in labor force |
| B23001165 | Female, 70 to 74 years, in labor force |
| B23001166 | Female, 70 to 74 years, in labor force, employed |
| B23001167 | Female, 70 to 74 years, in labor force, unemployed |
| B23001168 | Female, 70 to 74 years, not in labor force |
| B23001170 | Female, 75 years and over, in labor force |
| B23001171 | Female, 75 years and over, in labor force, employed |
| B23001172 | Female, 75 years and over, in labor force, unemployed |
| B23001173 | Female, 75 years and over, not in labor force |
| B23008003 | Children under 6 years, living with two parents |
| B23008004 | Children under 6 years, living with two parents, both parents in the labor force |
| B23008016 | Children 6 to 17 years, living with two parents |
| B23008017 | Children 6 to 17 years, living with two parents, both parents in the labor force |
| C23002A006 | White alone males 16 to 64 years, in civilian labor force |
| C23002A008 | White alone males 16 to 64 years and over, in civilian labor force, unemployed |
| C23002A011 | White alone males 65 years and over, in labor force |
| C23002A013 | White alone males 65 years and over, in labor force, unemployed |
| C23002A019 | White alone females 16 to 64 years, in civilian labor force |
| C23002A021 | White alone females 16 to 64 years and over, in civilian labor force, unemployed |
| C23002A024 | White alone females 65 years and over, in labor force |
| C23002A026 | White alone females 65 years and over, in labor force, unemployed |
|  |  |
| C23002B006 | Black or African American alone males 16 to 64 years, in civilian labor force |
| C23002B008 | Black or African American alone males 16 to 64 years and over, in civilian labor force, unemployed |
| C23002B011 | Black or African American alone males 65 years and over, in labor force |
| C23002B013 | Black or African American alone males 65 years and over, in labor force, unemployed |
| C23002B019 | Black or African American alone females 16 to 64 years, in civilian labor force |
| C23002B021 | Black or African American alone females 16 to 64 years and over, in civilian labor force, unemployed |
| C23002B024 | Black or African American alone females 65 years and over, in labor force |
| C23002B026 | Black or African American alone females 65 years and over, in labor force, unemployed |
|  |  |
| C23002C006 | American Indian and Alaska Native alone males 16 to 64 years, in civilian labor force |


| C23002C008 | American Indian and Alaska Native alone males 16 to 64 years and over, in civilian labor force, unemployed |
| :---: | :---: |
| C23002C011 | American Indian and Alaska Native alone males 65 years and over, in labor force |
| C23002C013 | American Indian and Alaska Native alone males 65 years and over, in labor force, unemployed |
| C23002C019 | American Indian and Alaska Native alone females 16 to 64 years, in civilian labor force |
| C23002C021 | American Indian and Alaska Native alone females 16 to 64 years and over, in civilian labor force, unemployed |
| C23002C024 | American Indian and Alaska Native alone females 65 years and over, in labor force |
| C23002C026 | American Indian and Alaska Native alone females 65 years and over, in labor force, unemployed |
| C23002D006 | Asian alone males 16 to 64 years, in civilian labor force |
| C23002D008 | Asian alone males 16 to 64 years and over, in civilian labor force, unemployed |
| C23002D011 | Asian alone males 65 years and over, in labor force |
| C23002D013 | Asian alone males 65 years and over, in labor force, unemployed |
| C23002D019 | Asian alone females 16 to 64 years, in civilian labor force |
| C23002D021 | Asian alone females 16 to 64 years and over, in civilian labor force, unemployed |
| C23002D024 | Asian alone females 65 years and over, in labor force |
| C23002D026 | Asian alone females 65 years and over, in labor force, unemployed |
|  |  |
| C23002E006 | Native Hawaiian and Other Pacific Islander alone males 16 to 64 years, in civilian labor force |
| C23002E008 | Native Hawaiian and Other Pacific Islander alone males 16 to 64 years and over, in civilian labor force, unemployed |
| C23002E011 | Native Hawaiian and Other Pacific Islander alone males 65 years and over, in labor force |
| C23002E013 | Native Hawaiian and Other Pacific Islander alone males 65 years and over, in labor force, unemployed |
| C23002E019 | Native Hawaiian and Other Pacific Islander alone females 16 to 64 years, in civilian labor force |
| C23002E021 | Native Hawaiian and Other Pacific Islander alone females 16 to 64 years and over, in civilian labor force, unemployed |
| C23002E024 | Native Hawaiian and Other Pacific Islander alone females 65 years and over, in labor force |
| C23002E026 | Native Hawaiian and Other Pacific Islander alone females 65 years and over, in labor force, unemployed |
| C23002F006 | Some other race alone males 16 to 64 years, in civilian labor force |
| C23002F008 | Some other race alone males 16 to 64 years and over, in civilian labor force, unemployed |
| C23002F011 | Some other race alone males 65 years and over, in labor force |
| C23002F013 | Some other race alone males 65 years and over, in labor force, unemployed |
| C23002F019 | Some other race alone females 16 to 64 years, in civilian labor force |

[^6] E. Aiello and Robert A. Hummer) at the University of North of North Carolina at Chapel Hill. We use data from the Add Health Program Project, grant P01 HD31921 (Harris) from Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), with cooperative funding from 23 other federal agencies and foundations. Add Health was designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill.

| C23002F021 | Some other race alone females 16 to 64 years and over, in civilian labor force, unemployed |
| :---: | :---: |
| C23002F024 | Some other race alone females 65 years and over, in labor force |
| C23002F026 | Some other race alone females 65 years and over, in labor force, unemployed |
| C23002G006 | Two or more races alone males 16 to 64 years, in civilian labor force |
| C23002G008 | Two or more races alone males 16 to 64 years and over, in civilian labor force, unemployed |
| C23002G011 | Two or more races alone males 65 years and over, in labor force |
| C23002G013 | Two or more races alone males 65 years and over, in labor force, unemployed |
| C23002G019 | Two or more races alone females 16 to 64 years, in civilian labor force |
| C23002G021 | Two or more races alone females 16 to 64 years and over, in civilian labor force, unemployed |
| C23002G024 | Two or more races alone females 65 years and over, in labor force |
| C23002G026 | Two or more races alone females 65 years and over, in labor force, unemployed |
| C23002H006 | White alone, not Hispanic or Latino alone males 16 to 64 years, in civilian labor force |
| C23002H008 | White alone, not Hispanic or Latino alone males 16 to 64 years and over, in civilian labor force, unemployed |
| C23002H011 | White alone, not Hispanic or Latino alone males 65 years and over, in labor force |
| C23002H013 | White alone, not Hispanic or Latino alone males 65 years and over, in labor force, unemployed |
| C23002H019 | White alone, not Hispanic or Latino alone females 16 to 64 years, in civilian labor force |
| C23002H021 | White alone, not Hispanic or Latino alone females 16 to 64 years and over, in civilian labor force, unemployed |
| C23002H024 | White alone, not Hispanic or Latino alone females 65 years and over, in labor force |
| C23002H026 | White alone, not Hispanic or Latino alone females 65 years and over, in labor force, unemployed |
| C230021006 | Hispanic or Latino alone males 16 to 64 years, in civilian labor force |
| C230021008 | Hispanic or Latino alone males 16 to 64 years and over, in civilian labor force, unemployed |
| C230021011 | Hispanic or Latino alone males 65 years and over, in labor force |
| C230021013 | Hispanic or Latino alone males 65 years and over, in labor force, unemployed |
| C230021019 | Hispanic or Latino alone females 16 to 64 years, in civilian labor force |
| C230021021 | Hispanic or Latino alone females 16 to 64 years and over, in civilian labor force, unemployed |
| C230021024 | Hispanic or Latino alone females 65 years and over, in labor force |
| C230021026 | Hispanic or Latino alone females 65 years and over, in labor force, unemployed |
|  |  |
| C24030001 | Total civilian employed population 16 years and over |
| C24030002 | Civilian employed population 16 years and over, male |
| C24030003 | Employed males 16 years and over in agriculture, forestry, fishing and hunting, and mining |

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| C24030004 | Employed males 16 years and over in agriculture, forestry, fishing and hunting |
| :---: | :---: |
| C24030005 | Employed males 16 years and over in mining, quarrying, and oil and gas extraction |
| C24030006 | Employed males 16 years and over in construction |
| C24030007 | Employed males 16 years and over in manufacturing |
| C24030008 | Employed males 16 years and over in wholesale trade |
| C24030009 | Employed males 16 years and over in retail trade |
| C24030010 | Employed males 16 years and over in transportation and warehousing, and utilities: |
| C24030011 | Employed males 16 years and over in transportation and warehousing |
| C24030012 | Employed males 16 years and over in utilities |
| C24030013 | Employed males 16 years and over in information |
| C24030014 | Employed males 16 years and over in finance and insurance, and real estate and rental and leasing |
| C24030015 | Employed males 16 years and over in finance and insurance |
| C24030016 | Employed males 16 years and over in real estate and rental and leasing |
| C24030017 | Employed males 16 years and over in professional, scientific, and management, and administrative and waste management services |
| C24030018 | Employed males 16 years and over in professional, scientific, and technical services |
| C24030019 | Employed males 16 years and over in management of companies and enterprises |
| C24030020 | Employed males 16 years and over in administrative and support and waste management services |
| C24030021 | Employed males 16 years and over in educational services, and health care and social assistance |
| C24030022 | Employed males 16 years and over in educational services |
| C24030023 | Employed males 16 years and over in health care and social assistance |
| C24030024 | Employed males 16 years and over in arts, entertainment, and recreation, and accommodation and food services |
| C24030025 | Employed males 16 years and over in arts, entertainment, and recreation |
| C24030026 | Employed males 16 years and over in accommodation and food services |
| C24030027 | Employed males 16 years and over in other services, except public administration |
| C24030028 | Employed males 16 years and over in public administration |
| C24030029 | Civilian employed population 16 years and over, female |
| C24030030 | Employed females 16 years and over in agriculture, forestry, fishing and hunting, and mining |
| C24030031 | Employed females 16 years and over in agriculture, forestry, fishing and hunting |
| C24030032 | Employed females 16 years and over in mining, quarrying, and oil and gas extraction |
| C24030033 | Employed females 16 years and over in construction |
| C24030034 | Employed females 16 years and over in manufacturing |
| C24030035 | Employed females 16 years and over in wholesale trade |
| C24030036 | Employed females 16 years and over in retail trade |
| C24030037 | Employed females 16 years and over in transportation and warehousing, and utilities |
| C24030038 | Employed females 16 years and over in transportation and warehousing |
| C24030039 | Employed females 16 years and over in utilities |
| C24030040 | Employed females 16 years and over in information |

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| C24030041 | Employed females 16 years and over in finance and insurance, and real estate and rental and leasing |
| :---: | :---: |
| C24030042 | Employed females 16 years and over in finance and insurance |
| C24030043 | Employed females 16 years and over in real estate and rental and leasing |
| C24030044 | Employed females 16 years and over in professional, scientific, and management, and administrative and waste management services |
| C24030045 | Employed females 16 years and over in professional, scientific, and technical services |
| C24030046 | Employed females 16 years and over in management of companies and enterprises |
| C24030047 | Employed females 16 years and over in administrative and support and waste management services |
| C24030048 | Employed females 16 years and over in educational services, and health care and social assistance |
| C24030049 | Employed females 16 years and over in educational services |
| C24030050 | Employed females 16 years and over in health care and social assistance |
| C24030051 | Employed females 16 years and over in arts, entertainment, and recreation, and accommodation and food services |
| C24030052 | Employed females 16 years and over in arts, entertainment, and recreation |
| C24030053 | Employed females 16 years and over in accommodation and food services |
| C24030054 | Employed females 16 years and over in other services, except public administration |
| C24030055 | Employed females 16 years and over in public administration |
|  |  |
| C24010001 | Total civilian employed population 16 years and over |
| C24010002 | Civilian employed population 16 years and over, male |
| C24010003 | Employed males 16 years and over in management, professional, and related occupations |
| C24010004 | Employed males 16 years and over in management, professional, and related occupations management, business, and financial occupations: |
| C24010005 | Employed males 16 years and over in management, professional, and related occupations management occupations |
| C24010006 | Employed males 16 years and over in management, professional, and related occupations business and financial operations occupations |
| C24010007 | Employed males 16 years and over in management, professional, and related occupations professional and related occupations: |
| C24010008 | Employed males 16 years and over in management, professional, and related occupations computer and mathematical occupations |
| C24010009 | Employed males 16 years and over in management, professional, and related occupations architecture and engineering occupations |
| C24010010 | Employed males 16 years and over in management, professional, and related occupations life, physical, and social science occupations |
| C24010011 | Employed males 16 years and over in management, professional, and related occupations community and social services occupations |
| C24010012 | Employed males 16 years and over in management, professional, and related occupations legal occupations |
| C24010013 | Employed males 16 years and over in management, professional, and related occupations education, training, and library occupations |

[^8] E. Aiello and Robert A. Hummer) at the University of North of North Carolina at Chapel Hill. We use data from the Add Health Program Project, grant P01 HD31921 (Harris) from Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), with cooperative funding from 23 other federal agencies and foundations. Add Health was designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill (http://www.cpc.unc.edu/addhealth).

| C24010014 | Employed males 16 years and over in management, professional, and related occupations arts, design, entertainment, sports, and media occupations |
| :---: | :---: |
| C24010015 | Employed males 16 years and over in healthcare practitioner and technical occupations |
| C24010016 | Employed males 16 years and over in health diagnosing and treating practitioners and other technical occupations |
| C24010017 | Employed males 16 years and over in health technologists and technicians |
| C24010018 | Employed males 16 years and over in service occupations |
| C24010019 | Employed males 16 years and over in healthcare support occupations |
| C24010020 | Employed males 16 years and over in protective service occupations |
| C24010021 | Employed males 16 years and over in fire fighting and prevention, and other protective service workers including supervisors |
| C24010022 | Employed males 16 years and over in law enforcement workers including supervisors |
| C24010023 | Employed males 16 years and over in food preparation and serving related occupations |
| C24010024 | Employed males 16 years and over in building and grounds cleaning and maintenance occupations |
| C24010025 | Employed males 16 years and over in personal care and service occupations |
| C24010026 | Employed males 16 years and over in sales and office occupations |
| C24010027 | Employed males 16 years and over in sales and related occupations |
| C24010028 | Employed males 16 years and over in office and administrative support occupations |
| C24010029 | Employed males 16 years and over in farming, fishing, and forestry occupations |
| C24010030 | Employed males 16 years and over in construction, extraction, maintenance, and repair occupations |
| C24010031 | Employed males 16 years and over in construction and extraction occupations |
| C24010032 | Employed males 16 years and over in installation, maintenance, and repair occupations |
| C24010033 | Employed males 16 years and over in production, transportation, and material moving occupations |
| C24010034 | Employed males 16 years and over in production occupations |
| C24010035 | Employed males 16 years and over in transportation and material moving occupations |
| C24010036 | Employed males 16 years and over in supervisors, transportation and material moving workers, and other transportation workers except motor vehicle operators |
| C24010037 | Employed males 16 years and over in motor vehicle operators |
| C24010038 | Employed males 16 years and over in material moving workers |
| C24010039 | Civilian employed population 16 years and over, female |
| C24010040 | Employed females 16 years and over in management, professional, and related occupations |
| C24010041 | Employed females 16 years and over in management, professional, and related occupations management, business, and financial occupations |
| C24010042 | Employed females 16 years and over in management, professional, and related occupations management occupations |
| C24010043 | Employed females 16 years and over in management, professional, and related occupations business and financial operations occupations |

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| C24010044 | Employed females 16 years and over in management, professional, and related occupations professional and related occupations: |
| :---: | :---: |
| C24010045 | Employed females 16 years and over in management, professional, and related occupations computer and mathematical occupations |
| C24010046 | Employed females 16 years and over in management, professional, and related occupations architecture and engineering occupations |
| C24010047 | Employed females 16 years and over in management, professional, and related occupations life, physical, and social science occupations |
| C24010048 | Employed females 16 years and over in management, professional, and related occupations community and social services occupations |
| C24010049 | Employed females 16 years and over in management, professional, and related occupations legal occupations |
| C24010050 | Employed females 16 years and over in management, professional, and related occupations education, training, and library occupations |
| C24010051 | Employed females 16 years and over in management, professional, and related occupations arts, design, entertainment, sports, and media occupations |
| C24010052 | Employed females 16 years and over in healthcare practitioner and technical occupations |
| C24010053 | Employed females 16 years and over in health diagnosing and treating practitioners and other technical occupations |
| C24010054 | Employed females 16 years and over in health technologists and technicians |
| C24010055 | Employed females 16 years and over in service occupations |
| C24010056 | Employed females 16 years and over in healthcare support occupations |
| C24010057 | Employed females 16 years and over in protective service occupations |
| C24010058 | Employed females 16 years and over in fire fighting and prevention, and other protective service workers including supervisors |
| C24010059 | Employed females 16 years and over in law enforcement workers including supervisors |
| C24010060 | Employed females 16 years and over in food preparation and serving related occupations |
| C24010061 | Employed females 16 years and over in building and grounds cleaning and maintenance occupations |
| C24010062 | Employed females 16 years and over in personal care and service occupations |
| C24010063 | Employed females 16 years and over in sales and office occupations |
| C24010064 | Employed females 16 years and over in sales and related occupations |
| C24010065 | Employed females 16 years and over in office and administrative support occupations |
| C24010066 | Employed females 16 years and over in farming, fishing, and forestry occupations |
| C24010067 | Employed females 16 years and over in construction, extraction, maintenance, and repair occupations |
| C24010068 | Employed females 16 years and over in construction and extraction occupations |
| C24010069 | Employed females 16 years and over in installation, maintenance, and repair occupations |
| C24010070 | Employed females 16 years and over in production, transportation, and material moving occupations |
| C24010071 | Employed females 16 years and over in production occupations |

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| C24010072 | Employed females 16 years and over in transportation and material moving occupations: |
| :---: | :---: |
| C24010073 | Employed females 16 years and over in supervisors, transportation and material moving workers, and other transportation workers except motor vehicle operators |
| C24010074 | Employed females 16 years and over in motor vehicle operators |
| C24010075 | Employed females 16 years and over in material moving workers |
| B19057001 | Total Households |
| B19057002 | Households with public assistance income |
| B19057003 | Households with no public assistance income |
| B19101001 | Total families |
| B19101002 | Families with incomes less than \$10,000 |
| B19101003 | Families with incomes \$10,000 to \$14,999 |
| B19101004 | Families with incomes \$ 15,000 to \$ 19,999 |
| B19101005 | Families with incomes \$20,000 to \$24,999 |
| B19101006 | Families with incomes \$ 25,000 to \$29,999 |
| B19101007 | Families with incomes \$30,000 to \$34,999 |
| B19101008 | Families with incomes \$35,000 to \$39,999 |
| B19101009 | Families with incomes \$40,000 to \$44,999 |
| B19101010 | Families with incomes \$45,000 to \$49,999 |
| B19101011 | Families with incomes \$50,000 to \$59,999 |
| B19101012 | Families with incomes \$60,000 to \$74,999 |
| B19101013 | Families with incomes \$ 75,000 to \$99,999 |
| B19101014 | Families with incomes \$100,000 to \$124,999 |
| B19101015 | Families with incomes \$125,000 to \$149,999 |
| B19101016 | Families with incomes \$150,000 to \$199,999 |
| B19101017 | Families with incomes \$200,000 or more |
| B20002001 | Median earnings in 2009 inflation-adjusted dollars |
| B20002002 | Median earnings males in 2009 inflation-adjusted dollars |
| B20002003 | Median earnings females in 2009 inflation-adjusted dollars |
| B17001001 | Total population for whom poverty status is determined |
| B17001002 | Population with income in the past 12 months below poverty level |
| B17010001 | Total families |
| B17010002 | Families with income in the past 12 months below poverty level |
| B17017001 | Total households |
| B17017002 | Households with income in the past 12 months below poverty level |
| B11009001 | Total Households |
| B11009002 | Unmarried-partner households |
| B11009003 | Unmarried-partner households, male householder and male partner |
| B11009004 | Unmarried-partner households, male householder and female partner |

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| B11009005 | Unmarried-partner households, female householder and female partner |
| :---: | :---: |
| B11009006 | Unmarried-partner households, female householder and male partner |
| B11009007 | All other households |
| B25002001 | Total housing units |
| B25002002 | Occupied housing units |
| B25002003 | Vacant housing units |
| B25003001 | Total housing units |
| B25003002 | Owner occupied housing units |
| B25003003 | Renter occupied housing units |
| B25010001 | Average household size of occupied housing units by tenure |
| B25035001 | Median year structure built |
| B25039001 | Median year householder moved into unit by tenure |
| B25043001 | Total housing units |
| B25043007 | Owner occupied housing units, no telephone service |
| B25043016 | Renter occupied housing units, no telephone service |
| B25043001 | Total occupied housing units |
| B25044001 | Total occupied housing units |
| B25044003 | Owner occupied housing units, no vehicle available |
| B25044010 | Renter occupied housing units, no vehicle available |
| B25047001 | Total housing units |
| B25047003 | Housing units lacking complete plumbing facilities |
| B25051001 | Total Housing units |
| B25051003 | Housing units lacking complete kitchen facilities |
| B25058001 | Median contract rent (dollars) for specified renter-occupied housing units paying cash rent |
| B25077001 | Median value (dollars) for specified owner-occupied housing units |
| B14001001 | Total population 3 years and over |
| B14001003 | Population 3 years and over, enrolled in nursery school, preschool |
| B14001004 | Population 3 years and over, enrolled in kindergarten |
| B14001005 | Population 3 years and over, enrolled in grade 1 to grade 4 |
| B14001006 | Population 3 years and over, enrolled in grade 5 to grade 8 |
| B14001007 | Population 3 years and over, enrolled in grade 9 to grade 12 |
| B14001008 | Population 3 years and over, enrolled in college, undergraduate years |
| B14001009 | Population 3 years and over, graduate or professional school |
| B14001010 | Population 3 years and over, not enrolled in school |
| B08006001 | Total workers 16 years and over |
| B08006002 | Car, truck, or van: |
| B08006008 | Public transportation (excluding taxicab): |
| B08006014 | Bicycle |

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| B08006015 | Walked |
| :--- | :--- |
| B08006016 | Taxicab, motorcycle, or other means |

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Notes

1. U.S. Census Bureau, Understanding and Using American Community Survey Data: What All Data Users Need to Know, U.S. Government Publishing Office, Washington, DC, 2020.
2. Citro, C.F. \& Kalton, G. (2007). Using the American Community Survey: Benefits and Challenges. Retrieved from www.nap.edu
3. U.S. Census Bureau (2013, February 1). Comparing 2009 American Community Survey Data. Retrieved from http://www.census.gov/acs/www/guidance for data users/comparing 2009/ and
http://www.census.gov/acs/www/Downloads/comparing acs data/table comparisons 10.pdf

## CA 1981-2010 U.S. Climate Atlas <br> National Centers for Environmental Information

The U.S. Climate Atlas is a tool that contains comprehensive climate information in the United States. The Atlas compiles data from a number of climate stations for the period 1960 to present. The data are only released every 10 years, and therefore 2010 is the most recent data available for Wave V (collected 20162018). This source provides a series of GIS layered data for daily, monthly, and annual averages of climate characteristics for the specified timeframe, and these data show the spatial distribution of the climatic elements. More information on the Climate Atlas can be found at the National Centers for Environmental Information's website: https://www.ncdc.noaa.gov/about

A total of six variables in this data file were generated using the information in the Climate Atlas of the United States. To attach these data, the distance from each Wave V respondent to the nearest 10 climate stations, with a maximum distance threshold of 500 km , was determined. Respondent locations were then assigned U.S. Climate Atlas data from the nearest station with non-missing values.

| Variable Description |
| :--- |
| Mean daily minimum temperature, annually (degrees Fahrenheit) |
| Mean daily maximum temperature, annually (degrees Fahrenheit) |
| Mean number of days with minimum temperature $<=32 \mathrm{~F}$, annually |
| Mean number of days with minimum temperature $>=90 \mathrm{~F}$, annually |
| Mean total precipitation, annually (inches) |
| Mean total snowfall, annually (inches) |

Rural-Urban Commuting Area Codes (RUCAs) provide a characterization of a census tract in regard to its rural and urban status and commuting patterns. This characterization is made by using measures of population density, urbanization, and daily commuting. This contextual file incorporates the most recent version of the RUCA codes associated with census tracts inhabited by Add Health respondents in Wave V, which are based on data from the 2010 decennial census and the 2006-2010 American Community Survey. These data are sourced from the Economics Research Service of the United States Department of Agriculture at the following website: https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes/.

The tables below provide a complete list of RUCA codes and their corresponding definitions:

| Primary RUCA Codes, 2010 |  |
| :---: | :--- |
| 1 | Metropolitan area core: primary flow within an urbanized area (UA) |
| 2 | Metropolitan area high commuting: primary flow $30 \%$ or more to a UA |
| 3 | Metropolitan area low commuting: primary flow $10 \%$ to $30 \%$ to a UA |
| 4 | Micropolitan area core: primary flow within an Urban Cluster of 10,000 to 49,999 (large |
| UC) |  |
| 5 | Micropolitan high commuting: primary flow $30 \%$ or more to a large UC |
| 6 | Micropolitan low commuting: primary flow $10 \%$ to $30 \%$ to a large UC |
| 7 | Small town core: primary flow within an Urban Cluster of 2,500 to 9,999 (small UC) |
| 8 | Small town high commuting: primary flow $30 \%$ or more to a small UC |
| 9 | Small town low commuting: primary flow $10 \%$ to $30 \%$ to a small UC |
| 10 | Rural areas: primary flow to a tract outside a UA or UC |
| 99 | Not coded: Census tract has zero population and no rural-urban identifier information |

## Secondary RUCA Codes, 2010 ${ }^{1}$

1 Metropolitan area core: primary flow within an urbanized area (UA)
1 No additional code
1.1 Secondary flow 30\% to 50\% to a larger UA

2 Metropolitan area high commuting: primary flow $30 \%$ or more to a UA
2 No additional code
2.1 Secondary flow 30\% to 50\% to a larger UA

3 Metropolitan area low commuting: primary flow $10 \%$ to $30 \%$ to a UA
3 No additional code
4 Micropolitan area core: primary flow within an Urban Cluster of 10,000 to 49,999 (large UC)

4 No additional code
4.1 Secondary flow $30 \%$ to $50 \%$ to a UA

5 Micropolitan high commuting: primary flow $30 \%$ or more to a large UC
5 No additional code
5.1 Secondary flow $30 \%$ to $50 \%$ to a UA

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6 Micropolitan low commuting: primary flow $10 \%$ to $30 \%$ to a large UC
6 No additional code
7 Small town core: primary flow within an Urban Cluster of 2,500 to 9,999 (small UC)
7 No additional code
7.1 Secondary flow $30 \%$ to $50 \%$ to a UA
7.2 Secondary flow $30 \%$ to $50 \%$ to a large UC

8 Small town high commuting: primary flow $30 \%$ or more to a small UC
8 No additional code
8.1 Secondary flow $30 \%$ to $50 \%$ to a UA
8.2 Secondary flow $30 \%$ to $50 \%$ to a large UC

9 Small town low commuting: primary flow $10 \%$ to $30 \%$ to a small UC
9 No additional code
10 Rural areas: primary flow to a tract outside a UA or UC
10 No additional code
10.1 Secondary flow $30 \%$ to $50 \%$ to a UA
10.2 Secondary flow $30 \%$ to $50 \%$ to a large UC
10.3 Secondary flow $30 \%$ to $50 \%$ to a small UC

99 Not coded: Census tract has zero population and no rural-urban identifier information

RUCA Data Sources:

Population data for census tracts, by urban-rural components, 2010:
U.S. Census Bureau, Census of Population and Housing, 2010. Summary File 1, FTP download:
https://www.census.gov/census2000/sumfile1.html
Assignment of census tracts to specific urban areas or to rural status was completed using ESRI's ArcMap software and Census Bureau shape files:
U.S. Census Bureau. Tiger/Line Shapefiles, Census Tracts and Urban Areas, 2010:
https://www.census.gov/programs-surveys/geography.html
Census tract commuting flows, 2006-2010:
U.S. Census Bureau, American Community Survey 2006-2010 Five-year estimates. Special Tabulation: Census Transportation Planning Products, Part 3, Worker Home-to-Work Flow Tables. https://www.fhwa.dot.gov/planning/census_issues/ctpp/data_products/20062010_table_list/sheet04.cfm

Tract-to-tract commuting flow files were constructed from ACS data as part of a special tabulation for the Department of Transportation-the Census Transportation Planning Package. To derive estimates for small geographic units such as census tracts, information collected annually from over 3.5 million housing units was combined across 5 years (2006-2010). As with all survey data, ACS estimates are not exact because they are based on a sample. In general, the smaller the estimate, the larger the degree of uncertainty associated with it. ${ }^{2}$

[^11]
## Notes

1. UA and UC refer to Urbanized Area and Urban Cluster, respectively.
2. 2010 Rural-Urban Commuting Area (RUCA) Codes. Economic Research Service United States Department of Agriculture. https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes/documentation

The Uniform Crime Report (UCR) is a periodic compilation of reported crimes nationwide; it contains county-level counts of arrests for violent and property offenses. Specifically, ICPSR Study No. 37059: Uniform Crime Reporting Program Data: County-Level Detailed Arrest and Offense Data, United States, 2016, obtained from The United States Department of Justice, Federal Bureau of Investigation ${ }^{1}$, provided the variables used to construct the crime measures appearing in this Add Health contextual database.

| Source Variable <br> Name | Description |
| :--- | :--- |
| P1TOT | PART 1-TOTAL. Total number of Part I (index) crimes. This is the sum of variables <br> MURDER through ARSON. |
| P1VLNT | PART 1-VIOLENT CRIMES. Sum of variables MURDER through ASSAULT. |
| P1PRPTY | PART 1-PROPERTY CRIMES Sum of variables BURGLRY through ARSON |
| CPOPARST | Total county population of agencies reporting arrests |
| COVIND | Coverage Indicator |

## Notes

1. United States Department of Justice. Federal Bureau of Investigation. Uniform Crime Reporting Program Data: County-Level Detailed Arrest and Offense Data, United States, 2016. Interuniversity Consortium for Political and Social Research [distributor], 2019-01-17. https://doi.org/10.3886/ICPSR37059.v3

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