Documentation for April 1, 2010 Bridged-Race Population Estimates for Calculating Vital Rates

The bridged-race April 1, 2010 population file contains estimates of the resident population of the United States based on the population enumerated on April 1, 2010 by county, single-year of age (0, 1, 2,..., 85 years and over), bridged-race category (White, Black or African American, American Indian or Alaska Native, Asian or Pacific Islander), Hispanic origin (not Hispanic or Latino, Hispanic or Latino), and sex (1). The estimates on this file resulted from bridging the 31 race groups used in Census 2010, as specified in the 1997 Office of Management and Budget (OMB) standards for the collection of data on race and ethnicity to the four race categories specified under the 1977 OMB standards.

Source of the Estimates

The bridged-race April 1, 2010 population estimates were produced by the Population Estimates Program of the U.S. Census Bureau in collaboration with the National Center for Health Statistics (NCHS). These estimates were released by the Census Bureau on November 3, 2011 and by NCHS on November 17, 2011.

Race Bridging Background

What is race bridging? - Race bridging refers to making data collected using one set of race categories consistent with data collected using a different set of race categories, to permit estimation and comparison of race-specific population-based statistics at a point in time or over time. More specifically, race bridging is a method used to make multiple-race and single-race data collection systems sufficiently comparable to permit estimation and analysis of race-specific statistics.

OMB's 1977 and 1997 standards on race and ethnicity - In 1997, OMB issued "Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity," which supersedes the 1977 Statistical Policy Directive 15, "Race and Ethnic Standards for Federal Statistics and Administrative Reporting" (2,3). Both documents specify rules for the collection, tabulation, and presentation of race and ethnicity data within the Federal statistical system. The race categories specified in both standards represent a social-political construct and are not anthropologically or biologically based. The revised standards increased the minimum number of race categories to be used by Federal agencies from four (White, Black, American Indian or Alaska Native, and Asian or Pacific Islander) to five (White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander). In addition, the revised standards require Federal data collection programs to allow respondents to select more than one race category when responding to a query on their racial identity. This provision means that under the revised standards there are potentially 31 race groups

(5 single-race and 26 multiple-race), depending on whether an individual selects one, two, three, four, or all five of the single-race categories.

Why race bridge? - During the transition to full implementation of the 1997 standards on race and ethnicity (see paragraph below), these two different standards for the collection of race and ethnicity data are both being used, creating incomparability across data systems. Further, within a given data system, the change in the race standards results in incomparability across time, thus making it difficult to perform trend analyses. The OMB recognized that race-bridging approaches would be needed to make race data collected under the 1997 standards comparable to race data collected under the 1977 standards. Therefore, the OMB issued "Provisional Guidance on the Implementation of the 1997 Standards for Federal Data on Race and Ethnicity" (4). The guidance document contains a detailed discussion of various bridging methods.

What is the NCHS regression bridging method? - Bridging methodology developed by NCHS bridges the multiple-race group population counts to four single-race categories (5, 6). Information from the pooled 1997-2000 National Health Interview Survey (NHIS) was used to develop the bridging methodology. Regression models with person-level and county-level covariates were used to generate the probability of selecting each single-race category possible for a multiple-race group. The probabilities generated from the fitted regression models are referred to as the NHIS bridging proportions. The Census Bureau has applied the NHIS bridging proportions generated by NCHS to the Census 2000 and Census 2010 counts, to the annual postcensal series of estimates for the 2000-2010 decade, and to the 2000-2009 intercensal estimates. These applications have resulted in bridged population estimates for each of the four single-race categories (White, Black or African American, American Indian or Alaska Native, and Asian or Pacific Islander) by county, age, Hispanic origin group, and sex, The bridging methodology is described in detail in the report, "United States Census 2000 Population with Bridged Race Categories" (which is available for download from this site) (5).

Why does NCHS use bridged-race population estimates? - Vital statistics rates are based on information obtained from vital records collected through the state-based Vital Statistics Cooperative Program (numerators) and population estimates derived from the U.S. Census Bureau (denominators). Because of differences in the timing of implementation of the 1997 OMB standards on race and ethnicity, beginning with the 2000 data year, the numerators and denominators of vital rates have incompatible race data. The questions about race on the 2000 and 2010 censuses were based on the 1997 OMB standards and so allowed respondents to select more than one race category. As a result, population estimates for 2000 and beyond have five single-race categories and up to 26 multiple-race categories. Implementation of the 1997 standards within the Vital Statistics Cooperative System started in 2003, on an individual state basis, and is proceeding slowly as states implement revised birth and death certificates which incorporate the 1997 OMB standards. As of 2009, 16 states had not revised the race question on their death certificate and 17 had not revised it on their birth certificate and were still collecting race data using the 1977 race categories. For this reason and

because of the need for birth and death trend data, NCHS continues to compute rates using the 1977 OMB race categories. When a sufficient number of states have adopted the revised birth and death certificates, rates will be presented using population estimates that comply with the 1997 standards.

Variance of Bridged-Race Population Estimates

Population estimates generally are assumed to be fixed and do not contribute to the variance of rates. However, this is not true for bridged-race population estimates. Although efforts were made to use the best available data and methods to produce the bridged-race estimates, the modeling process introduces error into the estimates. The potential for error will be greatest for the smallest population groups, particularly the smaller race groups and county level estimates. Methodology to compute variances for bridged-race population estimates has been developed (7).

NCHS Use of Bridged-Race Population Estimates

NCHS publishes national (and some state) birth and death rates on an annual basis. For the 2001-2009 birth and death reports, NCHS used bridged-race postcensal population estimates to calculate birth and death rates. The 2001-2009 vital rates in these reports were calculated using population estimates from the bridged-race estimates series corresponding with each data year (i.e., vital rates for 2001 were calculated using population estimates from the Vintage 2001 postcensal series, vital rates for 2002 were calculated using estimates from the Vintage 2002 postcensal series, and so forth). These procedures were followed for the rates published in the *preliminary* and *final* birth and death reports. Vital rates for 2001-2009 will be recalculated using the bridged-race intercensal population estimates for 2001-2009. The revised vital rates for selected birth measures have recently been published (8). The remaining revised vital statistics rates will be presented in forthcoming NCHS reports.

Release of Bridged-Race Population Estimates

In response to the need for bridged estimates by a wide range of users, NCHS makes the bridged-race population estimates available for download from the web site "U.S. Populations with Bridged Race Categories" (http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge.htm). The report detailing the bridging methodology, "United States Census 2000 Population with Bridged Race Categories", also is available for download from this site (5).

Comments and Questions

NCHS would appreciate receiving feedback on the usefulness of the bridged-race estimates as well as notification of any problems that have been identified. Comments or questions about the estimates may be sent via e-mail to:

PopEst@cdc.gov.

Suggested Citation

National Center for Health Statistics. Estimates of the April 1, 2010 resident population of the United States, by county, single-year of age (0, 1, 2, …, 85 years and over), bridged race, Hispanic origin, and sex. Prepared under a collaborative arrangement with the U.S. Census Bureau; released November 3, 2011. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of November 17, 2011

References

1. National Center for Health Statistics. Estimates of the April 1, 2010 resident population of the United States, by county, single-year of age (0, 1, 2, …, 85 years and over), bridged race, Hispanic origin, and sex. Prepared under a collaborative arrangement with the U.S. Census Bureau; released November 3, 2011. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of November 17, 2011.

2. Office of Management and Budget. Revisions to the standards for the classification of Federal data on race and ethnicity. Federal Register 62FR58781-58790, October 30, 1997. Available from: http://www.whitehouse.gov/omb/fedreg/1997standards.html.

3. Office of Management and Budget. Race and ethnic standards for Federal statistics and administrative reporting. Statistical Policy Directive 15. May 12, 1977.

4. Office of Management and Budget. Provisional guidance on the implementation of the 1997 standards for the collection of Federal data on race and ethnicity. December 15, 2000. Available from: http://www.Whitehouse.gov/omb/inforeg/r&e_guidance2000update.pdf.

5. Ingram DD, Parker JD, Schenker N, Weed JA, Hamilton B, Arias E, Madans JH. United States Census 2000 population with bridged race categories. Vital Health Stat 2(135). Hyattsville, Maryland: National Center for Health Statistics. 2003. Available from: http://www.cdc.gov/nchs/data/series/sr_02/sr02_135.pdf

6. Parker JD, Schenker N, Ingram DD, Weed JA, Heck KE, Madans JH. Bridging between two standards for collecting information on race and ethnicity: an application to Census 2000 and vital rates. Public Health Reports 119(2):192-205. 2004

7. Schenker, N. Assessing variability due to race bridging: application to Census counts and vital rates for the Year 2000. J American Statistical Association 98:818-28. 2003.

8. Hamilton BE, Martin JA, Ventura SJ. Births: Preliminary Data for 2010. National Vital Statistics Reports; vol 60, no 2. Hyattsville, MD: National Center for Health Statistics. 2011. Available from: http://www.cdc.gov/nchs/products/nvsr.htm#vol60.

File layout
April 1, 2010 Bridged-Race Population Estimates File

The file contains bridged-race estimates of the April 1, 2010 resident population of the United States by county single year of age (0, 1, 2, …, 85 years and over), bridged-race category (White, Black or African American, American Indian or Alaska Native, Asian or Pacific Islander), Hispanic origin (not Hispanic or Latino, Hispanic or Latino), and sex. There is a record on the file for each combination of county, age, race, Hispanic origin, and sex. There is a record on the files for each combination of state, age, race, Hispanic origin, and sex. The population estimates on the file were derived by the U.S. Census Bureau and released on November 3, 2011. They were released by NCHS on November 17, 2011

Control totals for the April, 2010 population file

File name	Number of records	Estimate month, year	Total population count	File size
census_0401_2010.txt census_0401_2010.sas7bdat	4,324,768	April 1, 2010	308,745,538	81MB 184MB

File layout for text file with April 1, 2010 population estimates for ages 0 to 85+ years:
File name = census_0401_2010.txt

Location	Field size	Item and code outline	Format
1-2	2	State FIPS code	Numeric
3-5	3	County FIPS code	Numeric
6-7	2	Age (0, 1, 2, …, 85 years and over)	Numeric
8	1	Race-sex 1=White male 2=White female 3=Black or African American male 4=Black or African American female 5=American Indian or Alaska Native male 6=American Indian or Alaska Native female 7=Asian or Pacific Islander male 8=Asian or Pacific Islander female	Numeric
9	1	Hispanic origin 1=not Hispanic or Latino 2=Hispanic or Latino	Numeric
10-17	8	April 1, 2010 population estimate	Numeric

File layout for SAS file with April 1, 2010 population estimates for ages 0 to 85+ years:
File name = census_0401_2010.sas7bdat

Variable name	Item and code outline	Format
ST_FIPS	State FIPS code	Numeric
CO_FIPS	County FIPS code	Numeric
AGE	Age (0, 1, 2, …, 85 years and over)	Numeric
RACESEX	Race-sex 1=White male 2=White female 3=Black or African American male 4=Black or African American female 5=American Indian or Alaska Native male 6=American Indian or Alaska Native female 7=Asian or Pacific Islander male 8=Asian or Pacific Islander female	Numeric
HISP	Hispanic origin 1=not Hispanic or Latino 2=Hispanic or Latino	Numeric
POP2010	April 1, 2010 population estimate	Numeric