

Documentation for 2000-2009 Bridged-Race Intercensal Population Estimates for Calculating Vital Rates

The bridged-race intercensal estimates of the resident population of the United States for 2000-2009 represent a revision of the postcensal population estimates for this period (Vintage 2001 to Vintage 2009). The following series of estimates are being released:

- 1) National intercensal estimates of the resident population (i.e., July 1, 2000-July 1, 2009) by single-year of age, sex, bridged-race, and Hispanic origin;
- 2) State intercensal estimates of the resident population (i.e. July 1, 2000-July 1, 2009) by 5-year age group, sex, bridged-race, and Hispanic origin.

The files have estimates by age, 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 (1,2) The estimates on these files are based on Census 2000 and Census 2010 and result from bridging the 2000-2009 intercensal estimates with 31 race groups (the 31 race groups used in Census 2010 in accordance with 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 (2, 3).

Source of the Estimates

The bridged-race intercensal population estimates for 2000 to 2009 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" (3,4). 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” (5). 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) (6).

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.

Bridged-Race Intercensal Population Estimates

Intercensal population estimates are estimates made for the years between two completed censuses which take into account the census at both the beginning and end of the decade. With the completion of the decennial census at the end of a decade, intercensal estimates for the preceding decade are prepared to replace the postcensal estimates for that decade. (Postcensal population estimates are estimates made for the years following a census, before the next census has been taken. They are derived by updating the resident population enumerated in the decennial census using measures of population change including births, deaths, immigration, and migration). Replacement of the postcensal estimates with intercensal estimates is desirable because as the end of the decade approaches, the postcensal estimates become increasingly less accurate.

The intercensal estimates for 2000-2009 for the United States population were produced using the same methodology that was used to generate the intercensal estimates for the 1980s and 1990s (8). This methodology distributes the differences between the April 1, 2010 postcensal estimates and the April 1, 2010 census counts across the postcensal estimates for that decade using a formula that produces intercensal estimates as a function of time and the postcensal estimates. The methodology preserves the patterns of population change observed over the decade. Using the race bridging methodology described in "Race Bridging Background", the Census Bureau, in collaboration with NCHS, derived bridged-race intercensal estimates for the 2000s from the intercensal estimates with 31 race groups (the 31 race groups used in Census 2010)

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 (9).

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 postcensal 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 (10). 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 (6).

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 Citations

National file:

National Center for Health Statistics. Intercensal estimates of the resident population of the United States for July 1, 2000-July 1, 2009, by year, 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

State file:

National Center for Health Statistics. Intercensal estimates of the resident population of the United States for July 1, 2000-July 1, 2009, by year, state, 5-year age group (0-4, 5-9, ..., 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. Intercensal estimates of the resident population of the United States for July 1, 2000-July 1, 2009, by year, 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. National Center for Health Statistics. Intercensal estimates of the resident population of the United States for July 1, 2000-July 1, 2009, by year, state, 5-year age group (0-4, 5-9, ..., 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.
3. 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>.
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6. 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
7. 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
8. U.S. Census Bureau. Methodology for the Intercensal Population Estimates: 2000 to 2010. Available from: http://www.census.gov/popest/topics/methodology/2000-2010_Intercensal_Estimates_Methodology.pdf.
9. 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.
10. Hamilton BE, Martin JA, Ventura SJ. Births: Preliminary Data for 2011. 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

2000-2009 Bridged-Race Intercensal Population Estimates Files

National and state intercensal population estimates for July 1, 2000-July 1, 2009 are available as text and SAS files.

- The national files contain bridged-race intercensal estimates of the July 1 resident population of the United States by year, 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 files for each combination of age, race, Hispanic origin, and sex.
- The state files contain bridged-race intercensal estimates of the July 1 resident population of the United States by year, state, 5-year age group (0-4, 5-9, ..., 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 files for each combination of state, age, race, Hispanic origin, and sex.

The population estimates on the files 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 2000-2009: national and state intercensal population files

Estimate month, year	Total population count
July 1, 2000	282,152,411
July 1, 2001	284,968,955
July 1, 2002	287,625,193
July 1, 2003	290,107,933
July 1, 2004	292,805,298
July 1, 2005	295,516,599
July 1, 2006	298,379,912
July 1, 2007	301,231,207
July 1, 2008	304,093,966
July 1, 2009	306,771,529

National and state 2000-2009 intercensal population file specifications.

File name	Number of records	Estimate month, year	File size
National files			
icen_nat2000_2009.txt	1,376	July 1, 2000-July 1, 2009	116LB
icen_nat2000_2009.sas7bdat	1,376	July 1, 2000-July 1, 2009	145KB
State files			
icen_state2000_2009.txt	14,668	July 1, 2000-July 1, 2009	1.3MB
icen_state2000_2009.sas7bdat	14,668	July 1, 2000-July 1, 2009	1.7MB

File layout for national text file with intercensal population estimates for ages 0 to 85+ years:
 File name = icen_nat2000_2009.txt

Location	Field size	Item and code outline	Format
1-2	2	<u>Age</u> (0, 1, 2, ..., 85 years and over)	Numeric
3	1	<u>Race-sex</u> 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
4	1	<u>Hispanic origin</u> 1=not Hispanic or Latino 2=Hispanic or Latino	Numeric
5-12	8	<u>July 1, 2000 population estimate</u>	Numeric
13-20	8	<u>July 1, 2001 population estimate</u>	Numeric
21-28	8	<u>July 1, 2002 population estimate</u>	Numeric
29-36	8	<u>July 1, 2003 population estimate</u>	Numeric
37-44	8	<u>July 1, 2004 population estimate</u>	Numeric
45-52	8	<u>July 1, 2005 population estimate</u>	Numeric
53-60	8	<u>July 1, 2006 population estimate</u>	Numeric
61-68	8	<u>July 1, 2007 population estimate</u>	Numeric
69-76	8	<u>July 1, 2008 population estimate</u>	Numeric
77-84	8	<u>July 1, 2009 population estimate</u>	Numeric

File layout for national SAS file with intercensal population estimates for ages 0 to 85+ years:
 File name = icen_nat2000_2009.sas7bdat

Variable name	Item and code outline	Format
AGE	<u>Age</u> (0, 1, 2, ..., 85 years and over)	Numeric
RACESEX	<u>Race-sex</u> 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	<u>Hispanic origin</u> 1=not Hispanic or Latino 2=Hispanic or Latino	Numeric
POP2000	<u>July 1, 2000 population estimate</u>	Numeric
POP2001	<u>July 1, 2001 population estimate</u>	Numeric
POP2002	<u>July 1, 2002 population estimate</u>	Numeric
POP2003	<u>July 1, 2003 population estimate</u>	Numeric
POP2004	<u>July 1, 2004 population estimate</u>	Numeric
POP2005	<u>July 1, 2005 population estimate</u>	Numeric
POP2006	<u>July 1, 2006 population estimate</u>	Numeric
POP2007	<u>July 1, 2007 population estimate</u>	Numeric
POP2008	<u>July 1, 2008 population estimate</u>	Numeric
POP2009	<u>July 1, 2009 population estimate</u>	Numeric

File layout for state text file with estimates for persons aged 0 to 85+ years:

File name = icen_state2000_2009.txt

Location	Field size	Item and code outline	Format
1-2	2	<u>State FIPS code</u>	Numeric
3-4	2	<u>Age</u> 1=0-4 years 2=5-9 years 3=10-14 years 4=15-19 years 5=20-24 years 6=25-29 years 7=30-34 years 8=35-39 years 9=40-44 years 10=45-49 years 11=50-54 years 12=55-59 years 13=60-64 years 14=65-69 years 15=70-74 years 16=75-79 years 17=80-84 years 18=85 years and over	Numeric
5	1	<u>Race-sex</u> 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
6	1	<u>Hispanic origin</u> 1=not Hispanic or Latino 2=Hispanic or Latino	Numeric
7-14	8	<u>July 1, 2000 population estimate</u>	Numeric
15-22	8	<u>July 1, 2001 population estimate</u>	Numeric
23-30	8	<u>July 1, 2002 population estimate</u>	Numeric
31-38	8	<u>July 1, 2003 population estimate</u>	Numeric
39-46	8	<u>July 1, 2004 population estimate</u>	Numeric

47-54	8	<u>July 1, 2005 population estimate</u>	Numeric
55-62	8	<u>July 1, 2006 population estimate</u>	Numeric
63-70	8	<u>July 1, 2007 population estimate</u>	Numeric
71-78	8	<u>July 1, 2008 population estimate</u>	Numeric
79-86	8	<u>July 1, 2009 population estimate</u>	Numeric

File layout for state SAS file with estimates for persons aged 0 to 85+ years:
 File name = icen_state2000_2009.sas7bdat

Variable name	Item and code outline	Format
ST_FIPS	<u>State FIPS code</u>	Numeric
AGE	<u>Age</u> 1=0-4 years 2=5-9 years 3=10-14 years 4=15-19 years 5=20-24 years 6=25-29 years 7=30-34 years 8=35-39 years 9=40-44 years 10=45-49 years 11=50-54 years- 12=55-59 years 13=60-64 years 14=65-69 years 15=70-74 years 16=75-79 years 17=80-84 years 18=85 years and over	Numeric
RACESEX	<u>Race-sex</u> 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	<u>Hispanic origin</u> 1=not Hispanic or Latino 2=Hispanic or Latino	Numeric
POP2000	<u>July 1, 2000 population estimate</u>	Numeric
POP2001	<u>July 1, 2001 population estimate</u>	Numeric
POP2002	<u>July 1, 2002 population estimate</u>	Numeric
POP2003	<u>July 1, 2003 population estimate</u>	Numeric
POP2004	<u>July 1, 2004 population estimate</u>	Numeric

POP2005	<u>July 1, 2005 population estimate</u>	Numeric
POP2006	<u>July 1, 2006 population estimate</u>	Numeric
POP2007	<u>July 1, 2007 population estimate</u>	Numeric
POP2008	<u>July 1, 2008 population estimate</u>	Numeric
POP2009	<u>July 1, 2009 population estimate</u>	Numeric
