

## Release Notes

### A. Vintage 2009 Population Estimates

The Vintage 2009 population estimates reflect four major improvements in the estimates methodology. In summary, improvements include changes in: 1) the estimation of net international migration, 2) the estimation of the distribution of deaths to people age 70 and older by age, sex, race, and Hispanic origin, 3) the estimation of domestic migration of the population age 65 years and older, and 4) the estimation of the age distribution of migration to and from counties.

#### 1. Estimation of Net International Migration for the Nation, States, and Counties

For Vintage 2009, we updated our method for distributing national-level estimates of net international migration by demographic characteristics and geography for all subcomponents except the net international migration of the military population.

In Vintage 2008, national-level estimates of net foreign-born international migration, net native international migration, and net migration between the United States and Puerto Rico were distributed at the state and county level by age, sex, race, and Hispanic origin using information from Census 2000. In Vintage 2009, we used information from the American Community Survey (ACS) three-year estimates for the 2005 to 2007 time period (ACS 2005-2007) to distribute our estimates by characteristics at the state level for some estimate years. Estimate year 2000 used state-level information from Census 2000, while 2005 and later years used state-level information from the ACS 2005-2007. The incorporation of ACS data was phased in at the state level through linear interpolation between estimate years 2000 and 2005. We distributed the state-level age, sex, race, and Hispanic origin estimates of net foreign-born migration to the counties by age, sex, race and Hispanic origin based on the within-state demographic and characteristics distribution of the Census 2000 data for all estimate years.

A second change in our Vintage 2009 estimates is the separate estimation of the characteristics and the geographic distribution of foreign-born immigrants and foreign-born emigrants. In Vintage 2008, we applied the age, sex, race, and Hispanic origin distribution of the noncitizen foreign born in Census 2000 who entered the United States in 1995 or later to the estimate of net foreign-born international migration. In Vintage 2009, characteristics of foreign-born immigrants and emigrants were distributed separately. Foreign-born immigrants were given the age, sex, race, and Hispanic origin distribution of the foreign-born population who entered the United States within five years of the Census/survey year, and age was adjusted to represent age at arrival into the United States instead of age at the time of the survey. For foreign-born emigrants, age, sex, race, and Hispanic origin distributions were estimated separately for two component estimates of emigration: an estimate of emigration for the foreign born who entered the United States within ten years of the estimate year and an estimate for those who entered the United States more than ten years before the estimate year. The age, sex, race, and Hispanic origin distribution of the foreign born who entered the United States within ten years of the Census/survey year was applied to the estimate of total emigrants who entered within ten years of the estimate year. The age, sex, race, and Hispanic origin of the foreign born who entered the United States more than ten years before the Census/survey year was applied to the estimate of total emigrants who entered more than ten years before the estimate year.

## 2. Estimation of Deaths by Age, Sex, Race, and Hispanic Origin for the Nation

In Vintage 2008 estimates, we estimated the distribution of deaths by age, sex, race, and Hispanic origin for the nation using total deaths reported by the National Center for Health Statistics (NCHS) and rates calculated from deaths and population estimates by age, sex, race, and Hispanic origin for 1998. The deaths produced by this method are distorted by discrepancies in the reporting of age between census counts and death registration, especially at the oldest ages.

In an attempt to resolve these discrepancies in the Vintage 2009 estimates, we incorporated life table-based death rates from an external source into our existing method to estimate deaths by age, sex, race, and Hispanic origin. We utilized the 2005 period life table by sex produced by the Social Security Administration (SSA) to calculate deaths for single years of age and sex among the population aged 70 to 99 and 100 years and older from the population being estimated.<sup>1</sup>

We applied the life table-based rates to the population by age, sex, race, and Hispanic origin to obtain a matrix of deaths by age, sex, race, and Hispanic origin that would have occurred under the assumption that mortality levels did not vary by race or Hispanic origin. Then we controlled the rate-based death estimates to the NCHS distribution of deaths by age, sex, race, and Hispanic origin aggregated to deaths by age (single years of age from 0 to 69, and age 70 and older), sex, and the following combined race and Hispanic origin categories:

1. non-Hispanic White alone,
2. non-Hispanic Black alone,
3. non-Hispanic Asian alone and non-Hispanic Native Hawaiian and Other Pacific Islander alone,
4. non-Hispanic American Indian and Alaska Native alone and all non-Hispanic multiple races, and
5. Hispanic of all races.

This procedure did not alter the overall national count of deaths obtained from NCHS.

## 3. Estimation of Domestic Migration of the Population Age 65 Years and Older

To estimate domestic migration of the age 65 and older population by county, we use Medicare enrollment data from the Centers for Medicare and Medicaid Services (CMS). In the Vintage 2008 estimates, we used annual county-level Medicare enrollment data from 1999 to 2005. Due to data consistency issues in the Medicare data after 2005, we projected the annual number of Medicare enrollees for each county from 2006 to 2008 based on prior trends in Medicare enrollment. In addition, we developed a process to adjust for the inordinate impact of Hurricanes Katrina and Rita in August and September 2005, respectively, on the net domestic migration from the affected counties and parishes.<sup>2</sup>

With the assistance of CMS, we resolved the prior data consistency issues for the Vintage 2009 estimates. Therefore, we used the annual Medicare enrollment data from 1999 to 2008 for each county. We projected the number of Medicare enrollees in 2009 for each county based on earlier trends in Medicare enrollment, as the data were not yet available. The corrected data from CMS now reflect the change in Medicare enrollment expected due to the impact of Hurricanes Katrina and Rita in 2005, so we removed these hurricane adjustments in the new methodology.

### 3. Estimation of the Age Distribution of Migration to and from Counties

In the Vintage 2008 estimates, we used state-level data to estimate the age distribution of county-level migration data. In the Vintage 2009 estimates we control the county-level in- and out-migration estimates to the age distributions of the in- and out-migrant exemptions, respectively, for each county.

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<sup>1</sup> This life table and associated documentation are located at <http://www.ssa.gov/policy/docs/statcomps/supplement/2009/4c.html>.

<sup>2</sup> For more information on the adjustments made to the projected Medicare enrollment in Vintage 2008 to account for the impact of Hurricanes Katrina and Rita, see <http://www.census.gov/popest/topics/methodology/2008-hurr-spcl-meth.pdf>.

## **B. Vintage 2009 Housing Unit Estimates**

The vintage 2009 housing unit estimates reflect the following improvements:

1) housing unit loss estimates, 2) building permit completion rates, and 3) Orleans and St. Bernard Parishes, Louisiana housing unit estimates.

1. Housing unit loss estimates - housing unit loss was calculated by applying an annual rate of loss to the previous year's housing unit estimate. The vintage 2009 estimates of housing unit loss are based on updated data derived from the 1999-2007 American Housing Survey (AHS) national sample. Prior to vintage 2009, loss was estimated using 1997-2003 data from the American Housing Survey.
2. Residential building permit completion rates – the permitted annual construction data was reduced by an incompleteness rate derived from updated Survey of Construction (SOC) data. Prior to vintage 2009, an annual incompleteness rate of two percent was applied to all residential permits, which was based on historical research from earlier in the decade. The revised annual incompleteness rates will reflect the percent of building permits that are issued in a given calendar year but do not result in the completed construction of a housing unit through July 2009. The rates are based on residential building permits that are found to be abandoned or were issued for a non-residential construction. The incompleteness rates were derived by dividing the number of such permits by the total number of building permits in the monthly Building Permits Survey. These rates now vary by year and will change each year as new SOC data are introduced. The new permit incompleteness rates will more accurately reflect the changes to the housing stock on a yearly basis.
3. Updated housing unit estimates in Orleans and St. Bernard Parishes – the Census Bureau applied an alternative method to estimate housing units in post Katrina Orleans and St. Bernard Parishes. The method produces a housing unit estimate by computing the ratio of housing units to household population in the two parishes before the hurricane (the 2005 estimate of the most recent vintage of estimates), and multiplying that ratio times the 2009 household population estimate of the most recent vintage. This alternative estimate will most accurately capture the rebuilding efforts that, in many cases, may not accurately reflect the components normally used to estimate housing units (completed permits, mobile home placements, non-permitted construction, and housing loss estimates).