

## Changes in Population Estimates from the 2000 Census to the 2010 Census and Impact on Asthma Rates



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Detailed population data are critical to understanding the unique demographic profiles at the state and local levels. In public health, these data are used to assess disease burden and to calculate standardized rates. Population data, however, are estimates which are projected based on the most recent census. These estimates are forecasts that take into account several variables. The methods used to project population estimates will vary by organization. The majority of programs within the Florida Department of Health, including the Florida Asthma Program, use the population data available on Florida CHARTS ([www.FloridaCHARTS.com](http://www.FloridaCHARTS.com)), which are provided by the Florida Department of Health in consultation with the Florida Legislature’s Office of Economic and Demographic Research (EDR).

Following a census, it is customary to revise population projections for the intercensal years based on new information from the latest census. The population data for years 2001 through 2010 have recently been updated on Florida CHARTS to reflect the data from the 2010 Census. Revising the population data from the projections to the actual estimates ensures accurate accounting of the racial, ethnic, and gender distribution of the population.

The 2001-2010 population data used to calculate rates in reports developed during the past 10 years were based on projections from the 2000 census. Now that the 2010 census data are available, new population estimates for this time period (2001-2010) have been calculated using the 2010 census information. The largest change seen from the 2000 census projection to the 2010 census estimate occurred in 2007; the 2000 census projected approximately 230,000 more Floridians than the estimate based on the 2010 census, a 1.2% change (Table 1).

<b>Table 1. Population Projections from the 2000 Census and Estimates from the 2010 Census</b>			
<b>Year</b>	<b>2000 Census Population Projections (Old)</b>	<b>2010 Census Population Estimates (New)</b>	<b>Percent Change</b>
<b>2001</b>	16,412,296	16,384,860	- 0.2%
<b>2002</b>	16,772,201	16,718,033	- 0.3%
<b>2003</b>	17,164,199	17,074,368	- 0.5%
<b>2004</b>	17,613,368	17,476,489	- 0.8%
<b>2005</b>	18,018,497	17,876,663	- 0.8%
<b>2006</b>	18,440,700	18,237,596	- 1.1%
<b>2007</b>	18,731,287	18,500,958	- 1.2%
<b>2008</b>	18,812,155	18,636,837	- 0.9%
<b>2009</b>	18,819,000	18,711,844	- 0.6%
<b>2010</b>	18,788,795	18,820,278	<b>0.2%*</b>

\* Note that the new population estimates were smaller than the population projections from the 2000 census for all years except 2010.

Overall, the population projections from the 2000 census and the population estimates from the 2010 census for the state of Florida are similar. There was not a large difference between the 2000 census projection and the 2010 census estimates when gender is considered. Examining the population data by age categories, the biggest differences in population occurred in 2010. The population data calculated

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from the 2010 census estimated approximately 77,700 more individuals in the 65-69 age range (8.7% percent change) and approximately 101,700 fewer individuals for those age 85 and older (18.8% change) than the projected estimates calculated from the 2000 census (data not shown).

However, race estimates are a little more complicated than age or gender. For state mandated data collection, such as birth and death certificates, these data are not collected uniformly across states and does not always mirror census coding. For example, Florida birth certificates allow for the responses “other” and “two or more races”, which not all other states collect. Different methods have been developed to create similar race variables that will be comparable from state to state and to the national census data. These different methods can impact race counts, particularly for the “other” group, as seen below.

The projections from the 2000 census overestimated the White and Black populations and underestimated the “other” population compared to the new estimates. In Florida, “other” race includes multiple races, American Indian/Alaska Native, Asian, and Hawaiian/Other Pacific Islander. These differences are also impacted by the race allocation method used. The data currently posted on Florida CHARTS will likely be updated again in the near future once official estimates needed for other methodologies are available. Table 2 shows the population data by race for 2010, comparing the 2000 projections to the 2010 estimates.

<b>Table 2. 2010 Florida Population by Race, Projections from the 2000 Census and Estimates from the 2010 Census by Race</b>					
<b>White (Old) 2000 Projection</b>	<b>White (New) 2010 Estimate</b>	<b>Black (Old) 2000 Projection</b>	<b>Black (New) 2010 Estimate</b>	<b>Other (Old) 2000 Projection</b>	<b>Other (New) 2010 Estimate</b>
<b>15,135,817</b>	<b>14,815,082</b>	<b>3,106,660</b>	<b>3,083,154</b>	<b>546,318</b>	<b>922,042</b>

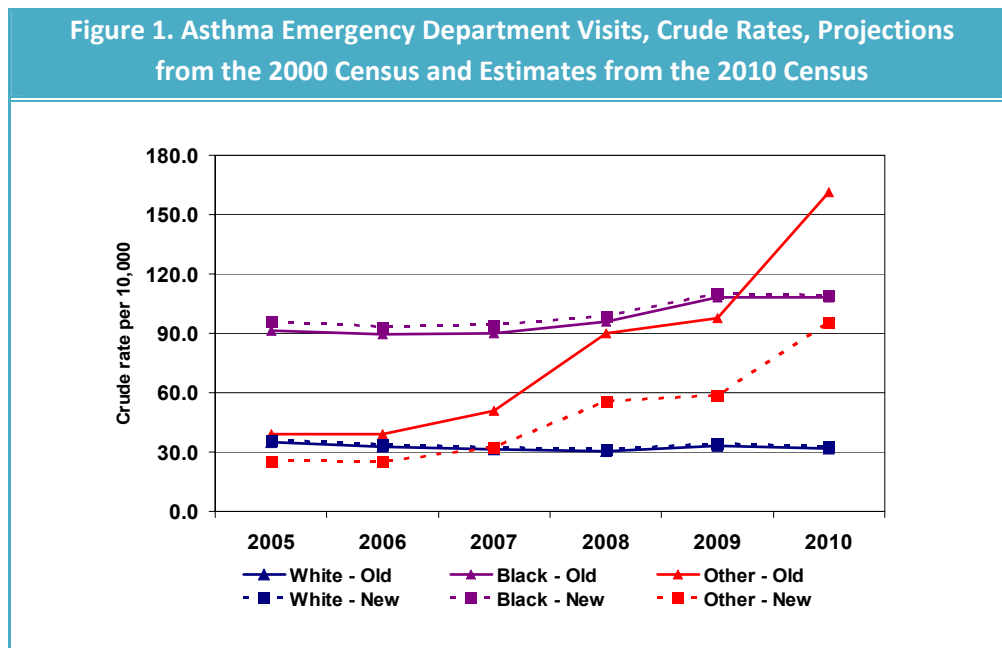
Table 3 shows the percentage change (between 2000 census projections and 2010 estimates) that occurred within each race category. For the White population, this change ranged from 1.0% to 2.8% and for the Black population, this change ranged from 0.8% to 4.5%. The percent change for the “other” population ranged from 41.5% to 68.8%.

<b>Table 3. Population Percent Change by Race, Projections from the 2000 Census and Estimates from the 2010 Census</b>				
	<b>% Change White</b>	<b>% Change Black</b>	<b>% Change Other</b>	<b>% Change Total</b>
<b>2001</b>	- 1.0%	- 2.1%	41.5%	<b>0.2%</b>
<b>2002</b>	- 1.4%	- 1.8%	45.9%	<b>0.3%</b>
<b>2003</b>	- 2.0%	- 1.2%	52.7%	<b>0.5%</b>
<b>2004</b>	- 2.4%	- 1.5%	55.2%	<b>0.8%</b>
<b>2005</b>	- 1.8%	- 4.5%	52.8%	<b>0.8%</b>
<b>2006</b>	- 2.5%	- 3.9%	56.5%	<b>1.1%</b>
<b>2007</b>	- 2.6%	- 4.5%	57.8%	<b>1.2%</b>
<b>2008</b>	- 2.8%	- 2.7%	62.8%	<b>0.9%</b>
<b>2009</b>	- 2.8%	- 1.6%	67.1%	<b>0.6%</b>
<b>2010</b>	- 2.1%	- 0.8%	68.8%	<b>- 0.2%</b>

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### Asthma Emergency Department (ED) Visits

Revising the population data from what was predicted to the actual estimates ensures accurate accounting of the racial, ethnic, and gender distribution of the population. However, rates that had been previously calculated are subject to change. Below is an example of how this update to the population estimates has impacted the crude ED visit and hospitalization rates for those cases with asthma listed as the primary diagnosis between 2000 and 2010.



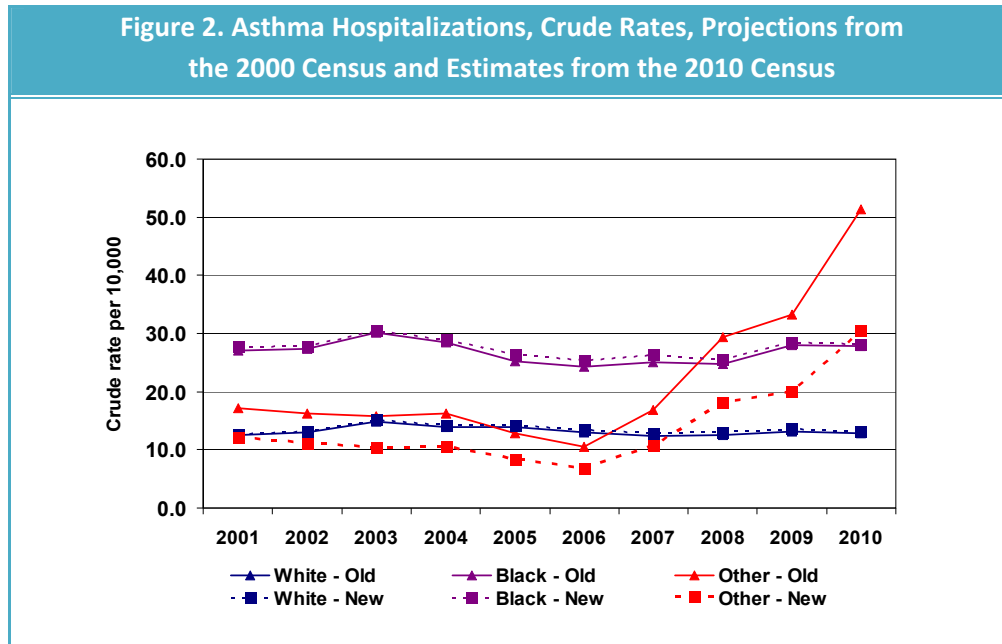
As expected, the crude rate of asthma ED visits among Whites and Blacks were not greatly impacted by the new population estimates (Figure 1). However, substantial changes occurred in the “other” race group when the new population estimates were used to calculate rates. Solid lines represent the projections from the 2000 census, and the dotted lines represent the new estimates from the 2010 census.

The 2010 crude rate of asthma ED visits using the population projections from the 2000 census among the “other” race group was 161.46 visits per 10,000 whereas the crude rate of asthma ED visits using the new population estimates based on the 2010 census is 95.67 per 10,000, bringing rate for the “other” race group below the rate for blacks (109.17 per 10,000).

### Asthma Hospitalizations

As was seen with the ED visits, the crude rate of asthma hospitalizations among Whites and Blacks were not greatly impacted by the new population estimates (Figure 2). Also, substantial changes occurred in the “other” race group when the new population estimates were used to calculate rates. Solid lines represent the projections from the 2000 census, and the dotted lines represent the new estimates from the 2010 census.

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The 2010 crude rate of asthma hospitalizations using the population projections from the 2000 census among the “other” race group was 51.36 visits per 10,000 whereas the crude rate of asthma ED visits using the new population estimates based on the 2010 census for the “other” race group was 30.43 per 10,000, the highest rate among the groups. The 2010 crude asthma hospitalization rate using the new 2010 census estimates was 13.12 per 10,000 white Floridians and 28.12 per 10,000 black Floridians, similar to the rates from the 2000 projections (12.84 and 27.90 per 10,000 respectively).

### Future Use and Implications

The revised population data and rates are now available on the Florida CHARTS website. The Florida Asthma Program will begin using these new population estimates based on the 2010 census beginning September 1, 2012, but the program will not revise reports that have been published prior to this date. Other Florida Department of Health programs may decide to recalculate rates as well, so be sure to always review methodology sections when comparing rates to understand which population estimates were used.

The Florida Environmental Public Health Tracking Program will be updating the data available on [www.FloridaTracking.com](http://www.FloridaTracking.com). If you have previously downloaded data for your county or program from Florida CHARTS or the Florida Tracking website, this information will no longer match.

While the release of the new 2010 census population estimates might be complicated or confusing to implement at first, the long-term implication of using these updated values is increased accuracy with which the Florida Department of Health and others programs calculate standardized rates to assess disease burden.