

**METHODOLOGY FOR ESTIMATING THE NUMBER OF UNINSURED CHILDREN
ELIGIBLE FOR ENROLLMENT IN MEDICAID OR FAMIS**

This report presents the methodology for estimating the number of uninsured children in each Virginia locality who might be eligible for enrollment in Medicaid or FAMIS. Section A describes the methods for estimating the number of uninsured as of December, 2000. Section B describes the methods for updating the estimate through September, 2002. Section C describes the methods for updating the estimates after September, 2002. Section D provides guidance for comparing the estimates derived under this methodology to previous estimates.

Please note that the estimates were developed by extracting data from several sources of existing data on population size and insurance status. This process of "estimating from estimates" is much more efficient than the alternative of collecting original survey data from each locality. However, this method is by nature subject to several types of error. For this reason, the estimates cannot be stated with statistical certainty. In this context, it is important to understand the process for developing the estimates, as described below.

A. ESTIMATES AS OF DECEMBER 2000**1. Estimated number of children age 0-18 in each Virginia locality as of December 2000**

The first step was to identify the number of children age 0-18 in each Virginia locality as of December 2000. This was accomplished using 2000 Census data purchased from Claritas, Inc. The procedures were as follows:

- 1.1 2000 Census data was used to count the number of children age 0-4, 5-9, and 10-14 in each locality as of 2000.
- 1.2 2000 Census data available at the time included grouped counts of 15-19 year olds. Because our population of interest did not include 19 year olds, it was necessary to estimate the number of 15-18 year olds. This was done by multiplying the number of 15-19 year olds by .80 (i.e. four-fifths of the 15-19 year old cohort).
- 1.3 The estimated number of 15-18 year olds was added to the 2000 Census count of 0-14 year olds to derive the estimated number of 0-18 year olds in each locality as of December 2000.

2. Estimated number of children age 0-18 with income at or below 200 percent of poverty as of December 2000

The next step was to estimate the number of children age 0-18 with household income at or below 200 percent of poverty.

- 2.1 2000 Census data were used to identify the poverty rate for children under 18 in each locality.
- 2.2 The 2000 Census poverty rate for children under 18 was multiplied by the estimated number of children age 0-18 to derive an estimated number of children age 0-18 and in poverty.
- 2.3 At the time the estimates were completed, there were no readily available 2000 Census data on the number of children below 200 percent of poverty by locality. Based on statewide Current Population Survey data, it was determined that there were roughly 2.25 times as many children living at or below 200 percent of poverty as children living at or below 100 percent of poverty. We applied this statewide ratio to each locality to develop a "200 percent of poverty rate" for each locality. For example, if a locality's poverty rate was 10 percent, we multiplied that rate by 2.25 to derive an estimated 200 percent of poverty rate of 22.5%.
- 2.4 To derive the estimate number of children age 0-18 with income at or below 200 percent of poverty, we multiplied the "200 percent of poverty rate" times the estimated number of children age 0-18.

3. Estimated number of uninsured children at or below 200 percent of poverty as of December 2000

The next step was to estimate the number of children with income at or below 200 percent of poverty who were uninsured.

- 3.1 The uninsured rate for this income category was estimated at 22.6 percent based on the 2001 Virginia Health Access Survey.
- 3.2 The estimated uninsured rate of 22.6 percent¹ was multiplied by the estimated number of children age 0-18 and at or below 200 percent of poverty to derive an estimated number of uninsured children who might be eligible for Medicaid or FAMIS.

B. UPDATE TO SEPTEMBER 2002

Over time, the actual number of low-income uninsured children may change due to several factors:

- The population of 0-18 year olds may increase or decline
- The number of eligible children enrolled in Medicaid or FAMIS may increase or decline.
- The 200 percent of poverty rate may increase or decline
- The uninsured rate for those at or below 200 percent of poverty may increase or decline

In computing the updates, we were able to account for some but not all of these factors.

- We accounted for change in the population of 0-18 year olds between the year 2000 and the year 2002 by purchasing updated demographic *estimates* from Claritas, Inc.
- We accounted for change in the number of eligible children enrolled in Medicaid or FAMIS by obtaining actual enrollment data from the Department of Medical Assistance Services.
- We were not able to explicitly account for changes in the 200 percent of poverty rate or the uninsured rate because no new estimates were released. *However, in acknowledgement of the economic downturn and rising insurance premiums during the period between December 2000 and September 2002, a policy decision was made to apply the "upper bound" of the estimated uninsured rate of 22.6 percent. This upper bound was computed at 27.6%.*

Keeping these limitations in mind, the following procedures were used to derive the updated estimates.

1. Estimated number of children age 0-18 in each Virginia locality as of September 2002.

- 1.1 Updated population *estimates* for 2002 were purchased from Claritas, Inc.
- 1.2 The updated number of 0-18 year olds was estimated by applying the same basic methods described in Section A.1 to the 2002 updated population estimates.

2. Estimated number of children age 0-18 with income at or below 200 percent of poverty as of September 2002

The estimated number of children age 0-18 and at or below 200 percent of poverty was calculated as follows.

- 2.1 The "200 percent of poverty rate" was assumed to be the same in 2002 as it was in 2000.

¹ Estimated margin of error +/- 5%.

2.2 The estimated number of children at or below 200 percent of poverty was estimated by multiplying the “200 percent of poverty rate” times the estimated number of children age 0-18 as of September 2002.

3. Estimated number of uninsured children at or below 200 percent of poverty as of September 2002 (unadjusted)

The estimated number of uninsured children at or below 200 percent of poverty (unadjusted for Medicaid/FAMIS enrollment) was estimated as follows:

- 3.1 The estimated uninsured rate for children at or below 200 percent of poverty was assumed to be 27.6 percent, the upper bound of the estimated rate from the year 2000.
- 3.2 The estimated number of uninsured children was derived by multiplying the estimated uninsured rate times the estimated number of children age 0-18 with income at or below 200 percent of poverty.

4. Adjusted estimated number of uninsured children at or below 200 percent of poverty as of September 2002

The uninsured estimates derived in step B.3 above accounted for population changes, but did not account for changes in Medicaid/FAMIS enrollment. To make this adjustment:

- 4.1 DMAS “snapshot” enrollment data from December 2000 were compared to “snapshot” data as of September, 2002. From this comparison we derived an estimated net increase in Medicaid and FAMIS enrollments during the time period.
- 4.2 Due to data limitations inherent in the December 2000 data, the calculations completed in 4.1 above included Medicaid enrollments for that age 19-21 in addition to the study population of 0-18 year olds. For the sake of this analysis, it was assumed that: a) Medicaid enrollments for that age 19-21 remained stable, and b) any net gain or loss in Medicaid enrollment was for children age 0-18.
- 4.3 Next, the estimated number of uninsured as of September 2002 was adjusted for Medicaid and FAMIS enrollment by taking the unadjusted estimate derived in B.3, and subtracting the net change in Medicaid & FAMIS. This was done for each locality. After this adjustment, some localities actually showed a negative number of uninsured. In these cases, the negative number was converted to a zero.

C. UPDATES AFTER SEPTEMBER 2002

Estimates for months after September 2002 are being calculated by adjusting the estimated number of outstanding uninsured by the net gain or loss in Medicaid and FAMIS enrollment for the period. Under this approach, a net gain in Medicaid/FAMIS enrollment results in an equivalent reduction in the estimated number of outstanding uninsured.

D. COMPARING ESTIMATES SINCE DECEMBER 2000 TO PRIOR YEAR ESTIMATES

The methods used to produce locality level estimates in this and previous reports are “synthetic estimation” methods. This means the estimates are not based on actual locality-level survey data (such data are not available statewide), but instead are derived from state-level survey data applied statistically to local census data. In this as in any synthetic estimation method, there is a risk of error. This should be kept in mind when reviewing this report.

Users of this report may notice substantial differences in estimates for their locality as compared to estimates published in previous reports. Such differences may be due to actual changes in the numbers of children eligible or enrolled, estimation error, grouping of localities, or combinations of these factors. For example:

- The estimates may be different because of real changes in the number of low-income children changed between 1998, 1999, and 2000; or
- The estimates may be different because of real changes in the uninsured rate for low income children changed between 1998, 1999, and 2000; or
- The estimates may be different due to estimation error; i.e. inaccurate estimates of low income children and uninsured rates; or
- The estimates may be different because some localities with joint DSS offices were grouped together for the current report. These groupings were not used in the previous versions of the estimates.

With these qualifications in mind, the current estimates are likely to be more accurate than previous estimates for two reasons:

- For the current estimates, more contemporary, 2000 Census data were available to estimate the number of low income children in each locality. For the previous estimates, the only available population data were estimated updates to the 1990 Census.
- For the current estimates, the estimated uninsured rate for low income children was based on more contemporary survey data than the previous estimates. These estimates are for 2000, as derived from the Virginia Health Care Foundation's Health Access Survey.

Given these updates to the methodology, users should use extreme caution when comparing the current set of locality-level estimates to previous estimates. Apparent differences may be caused as much by changes in the methodology as by actual changes in the number of low-income uninsured children. Consequently, users are encouraged to use the estimates for December 2000 and subsequent months in their planning and evaluation efforts, with the realization that a margin of error should be assumed in any set of synthetically estimated numbers.