

## **TRIM3 Simulations of Full-Year Uninsured Children and their Eligibility for Medicaid and SCHIP<sup>1</sup>**

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We estimated the number of full-year uninsured children and the share of them eligible for Medicaid or SCHIP using the TRIM3 microsimulation model. This model applies detailed state-specific rules to determine which individuals represented in the Current Population Survey (CPS) are eligible for Medicaid and/or SCHIP. Other key aspects of the model are the correction for underreporting of Medicaid, SCHIP, and other public benefits in the CPS and the imputation of immigrant legal status. Corrections for underreporting involve simulating additional enrollees so that reported coverage on the CPS matches totals given in the program administrative data. Imputation for immigrant legal status is required because this information is not provided in the CPS but is required to estimate eligibility.

Our findings are that in 2003-2004,

- Approximately 4.9 million children were uninsured for the entire calendar year. (Children are defined as anyone under age 19; the 4.9 million is an average of the estimates for 2003 and for 2004.)
- An estimated 257,000 of these children (5.2 percent) were eligible for one or more months of public coverage under Medicaid.
- An additional 794,000 uninsured children (16.2 percent) were eligible for public coverage under SCHIP under the various eligibility rules applicable in the various States, the District of Columbia and the territories. Thus, an estimated 1.1 million children—21.3 percent of the children who were uninsured the entire year—were eligible for at least one month of public coverage in either of the two federal programs.
- An estimated 689,000 of the 794,000 uninsured children eligible for SCHIP would have been eligible if SCHIP eligibility had been capped at 200 percent of poverty in all states.
- An estimated 2.2 million uninsured children (45.7 percent) were ineligible due to family incomes higher than the eligibility limits. About 64,000 of these children would have been

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eligible if all states covered children with incomes up to 200 percent of federal poverty guidelines (\$3,104 per month for a family of four in the continental U.S.).

- Approximately 1.1 million uninsured children (23.0 percent) were undocumented or temporary immigrants, who are only eligible for emergency Medicaid services.
- Another 403,000 uninsured children (8.3 percent) were legal aliens who met income, asset, and age requirements, but were ineligible due to the five-year bar (no eligibility for Medicaid or SCHIP until one has been a legal permanent resident for five years) or sponsor deeming requirements (the resources of an immigrant's sponsor are counted in addition to those of the immigrant's family).
- As noted, these are full-year estimates of uninsured children. Some children who are eligible and enrolled in Medicaid and SCHIP receive coverage for part of the year only. Similarly, some children for whom employer-sponsored insurance is reported are covered for only part of the year due to interruptions in parental employment.

The TRIM3 estimate of 4.9 million full-year uninsured children is much lower than the 8.8 million for whom no coverage is reported in the CPS. The main reason for this difference is that TRIM3 corrects for the underreporting of public coverage in the survey. After the adjustment process, the annual Medicaid and SCHIP caseloads in the model's data are close to the figures reported in annual administrative data.

The correction for underreporting also lowers the share of uninsured children estimated to be eligible for public coverage, since many children who appear eligible but uninsured are simulated to actually be enrolled. TRIM3's imputation of immigrant legal status further reduces the share of uninsured children estimated to be eligible for public coverage; many children who seem to meet all other requirements are nonetheless simulated to be ineligible for public coverage due to restrictions on benefits for noncitizens.

Like any other estimates based on survey data, TRIM3 estimates are subject to sampling error, and are less reliable for subgroups whose sample sizes are small. We have more confidence, therefore, in our estimates of uninsurance rates and eligibility for public coverage at the national level, than in our estimates for specific subgroups.

### Overview of the TRIM3 Model

The Transfer Income Model, version 3 (TRIM3) is a comprehensive microsimulation model developed and maintained at the Urban Institute under primary funding from Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation (HHS/ASPE). TRIM3 simulates the major governmental tax, transfer, and health programs that affect the U.S. population, and can produce results at the individual, family, state, and national levels.

TRIM3 uses as its starting-point data the Annual Social and Economic Supplement (ASEC) to the Current Population Survey (formerly referred to as the March CPS). This analysis used data from two different ASEC files, those for calendar years 2003 and 2004, in order to increase the reliability of the state-level estimates. TRIM3's annual "baseline" simulations

(simulations of actual program rules) correct for the underreporting of benefits in the ASEC, and create other variables—such as program eligibility indicators—unavailable in the input data.

Because TRIM3 is a comprehensive model, the simulation of one government program informs the simulation of another government program. In the case of the Medicaid simulation, for instance, the identification of individuals eligible for Medicaid due to receipt of Supplemental Security Income (SSI) benefits is improved by using SSI variables that have been corrected for underreporting by TRIM3's SSI simulation.

### TRIM3 Simulation of Medicaid and SCHIP

The TRIM3 Medicaid module simulates eligibility and enrollment in Medicaid and SCHIP in each month of the calendar year. Inputs to the module come from TRIM3 simulations of SSI, TANF, and child care expenses, as well as from the original data reported on the CPS.

Eligibility is assessed by applying national and state policies to each individual in each month. The policies database, updated annually, indicates who qualifies for the many different categories of Medicaid and SCHIP eligibility in each state. Criteria include such factors as income levels, age, assets, disability, SSI receipt, and pregnancy.

An enrollment decision is simulated for those simulated to be eligible for Medicaid or SCHIP. Recipients of TANF or SSI are assumed to enroll in Medicaid or SCHIP, if they are eligible. People who report Medicaid or SCHIP coverage on the CPS are also counted as enrolling, if they are simulated to be eligible. This does not include people whose "report" of coverage has actually been imputed by the Census Bureau.

Because Medicaid receipt, like other means-tested benefits, is underreported, the sum of eligible TANF/SSI participants and Medicaid/SCHIP reporters is less than the total number of participants indicated in administrative data. The TRIM3 Medicaid/SCHIP participation algorithm corrects for underreporting by imputing enrollment to eligible nonreporters until doing so would exceed ceilings for specified average monthly targets. Months of simulated participation are then adjusted to hit annual targets as well. Average monthly targets for the 2003 and 2004 alignments included

- Total enrollment, Medicaid and SCHIP, national and 11 largest states (California, Florida, Georgia, Illinois, Michigan, New York, North Carolina, Ohio, Pennsylvania, Tennessee, and Texas)
- User Group (children, adults, disabled, elderly), national and 11 largest states
- Reason for Eligibility (cash assistance/Section 1931/other, poverty-related, medically needy, Section 1115 waiver), national
- Medicaid children, national
- SCHIP children, national
- SCHIP adults, national
- Total infants, Medicaid and SCHIP, national
- Poverty level, national
- Private health insurance coverage during year, national

State-specific alignment was not performed for the 39 states other than those listed above or for the District of Columbia.

Annual targets in the 2003 and 2004 alignments included national totals for Medicaid children, SCHIP children, Medicaid adults, SCHIP adults, disabled, and elderly. The annual targets suggest that about 30 million children were covered by Medicaid and/or SCHIP in each year. Only about 20 million children, in contrast, are reported or imputed enrollees in the raw CPS data.

The TRIM3 alignment procedures described above increase the estimated number of children with public coverage to target levels. Doing so results in an estimate of the number of uninsured children (4.874 million) that is much lower than an estimate taken directly from the CPS (8.787 million). Figure 1 shows the relationship between the two estimates. The CPS variables for Medicaid and SCHIP, taken together with variables for other sources of coverage such as employer-sponsored insurance and private nongroup coverage, produce estimates for four groups of children: those with public coverage only; those with other coverage only; those with both kinds of coverage (perhaps in different months of the year); and those with neither public nor other coverage, the uninsured.

TRIM3's simulation of eligibility and enrollment effectively divides each of these four groups into three parts: children simulated as eligible for, and enrolled in, Medicaid or SCHIP; children simulated as eligible for public coverage in at least one month, but never enrolled; and children simulated as ineligible. TRIM3 changes 4.966 million eligible nonreporters with no other coverage into simulated Medicaid or SCHIP participants, removing these children from the total number of uninsured. A smaller number of children with no other coverage, who are enrolled in Medicaid or SCHIP according to the CPS, are simulated as uninsured, either because TRIM3 does not find them to be eligible for public coverage (923,000), or because TRIM3's alignment procedures lead to a different result than Census imputation methods (131,000).

Children for whom other coverage is reported (below the dotted line in Figure 1) are also switched in both directions, but with no impact on uninsurance estimates since both CPS and TRIM3 find them to be insured for all or part of the year. Counting children who do report other coverage and children who do not, TRIM3 changes 12.389 million nonreporters to enrollees and

2.384 million reported enrollees to nonparticipants, for a net increase of 10.005 million Medicaid/SCHIP enrollees over the total reported in the CPS.

TRIM3 estimates of the number of uninsured children and the proportion of these children who are currently eligible for public coverage under Medicaid or SCHIP may be lower or higher than estimates developed with other procedures or assumptions. The possible sources of these differences include the following:

- Sources of administrative targets. TRIM3 Medicaid targets are computed from the MSIS data released by the Centers for Medicare and Medicaid Services (CMS). The MSIS consists of millions of individual records, organized by state. These totals are adjusted downward to remove institutionalized persons (who are outside the CPS universe), dual enrollees who get some help with Medicare premiums but do not receive full Medicaid benefits, and other participants who receive limited Medicaid benefits under family planning waivers and state prescription drug programs. TRIM3 SCHIP targets are based on tabulations from the SEDS system, provided by CMS. Use of other sources, or different decisions about how these data should be adjusted, could produce different totals for public coverage, and thus for the total number of uninsured children and the share of them who are eligible for public coverage. Approaches that do not adjust for underreporting at all, of course, would result in the biggest differences from the TRIM3 estimates presented here.

Our approach compares the CPS information on health care coverage in the previous year with annual (“ever-on”) targets from the administrative data. TRIM3’s allocation of other annual information reported on the CPS, including income and work, allows month-by-month determination of eligibility and participation, mirroring the time frame used in the real world by case workers and prospective enrollees. We compare the simulated monthly data that results with the average monthly data on Medicaid and SCHIP enrollment available from MSIS and SEDS.

- Methods of undercount adjustment. The TRIM3 targets used in the 2003 and 2004 alignments include average monthly totals for people with and without private health coverage in each of three age groups (0-19, 19-64, and 65 and older). We computed these targets by multiplying the number in each age group, from the Medicaid and SCHIP administrative data, by the proportion of Medicaid/SCHIP enrollees in each age group with private health coverage, from the SIPP.

For 2003-2004, about 60 percent of the nonreporting children who are simulated to enroll reported other coverage on the CPS, and therefore would not be classified as uninsured in either the CPS or TRIM3 data. A higher proportion with other coverage, as well as Medicaid or SCHIP, would reduce the impact of the adjustment on the CPS total of uninsured children, and thus produce an uninsurance estimate closer to that from the raw CPS data, and a higher estimate of the percentage of uninsured children eligible for public coverage.

- Use of calendar year or fiscal year targets. CMS MSIS and SEDS data are issued by fiscal year, whereas the CPS asks about the previous calendar year. TRIM3 procedures create average monthly data for the calendar year by combining the last nine months of one fiscal year with the first three months of the next. Annual data are then adjusted by applying the

average monthly ratio of calendar year/fiscal year, by state and user group, to the annual data for the earlier year. Because enrollment in Medicaid and SCHIP was increasing during this period, calendar year targets will be slightly higher than fiscal year targets.

- Use of revised 2004 data. In March 2007, the Census Bureau released revised health insurance data for 2004 and 2005. The revisions corrected a processing error that caused some persons for whom employer-sponsored coverage or private nongroup coverage was reported to be imputed as not having these forms of coverage. The new data (<http://www.census.gov/hhes/www/hlthins/usernote/table1usernote.xls>) show 228,000 fewer uninsured children (0-17). They also affect eligibility for public coverage because TRIM3 simulates children as ineligible for SCHIP if they have employer-sponsored insurance that month.

The estimates described here use the revised 2004 data, and therefore show fewer uninsured children than estimates computed with the earlier data. By August 2007, the Census Bureau expects to release an extract that can be used to make similar corrections to the 2003 data, which will probably have similar effects on the results.

- Use of annual or monthly income data. CPS income variables are for the entire year. TRIM3 uses reported information such as weeks worked to create a simulated monthly income record, which is then tested against the criteria for program eligibility. Children whose family income varies across months may be eligible for public coverage in some months even though their annual income exceeds program limits. Estimates based on annual income only would not find these children to be eligible.
- Interpretation of reported Medicaid and SCHIP. Although the CPS provides separate variables for reported coverage in Medicaid and in SCHIP, respondents may be confused about which program they or their children were enrolled in, particularly in states that use the same program name for both Medicaid and SCHIP coverage. TRIM3 therefore interprets CPS reports of Medicaid or SCHIP coverage as interchangeable and treats either as a report of public coverage. Assignment to either Medicaid or SCHIP is determined when monthly income and other characteristics are tested against each state's eligibility rules. An approach that did distinguish between reported Medicaid and reported SCHIP might produce different simulation results.
- Imputation of immigration status. As explained below, TRIM3 imputes immigration status, including the status of undocumented or illegal aliens. Imputed immigration status affects program eligibility because legal aliens may be subject to restrictions on eligibility (a five-year bar and deeming requirements), while illegal aliens can never be eligible for coverage. Estimates that do not take these statuses into account are likely to overstate the number of uninsured children who are eligible for public coverage.

## Imputation of Immigrant Legal Status

The ASEC data includes a variable that indicates if a person is a citizen, but does not provide any information on a noncitizen's legal status—refugee/asylee, legal nonimmigrant, legal permanent resident (LPR), or undocumented alien. Since legal status helps to determine eligibility for public benefits—including Medicaid and SCHIP—that information is imputed onto the TRIM3 version of each year's ASEC data.

An alien is assigned to be a refugee/asylee if s/he is from a country for which refugees account for more than 50 percent of total admissions of legal permanent aliens, refugees, and asylees for the period during which the person entered. We compare the results of this process to a demographic estimate of the number of refugees residing in the United States and make minor adjustments as needed to come acceptably close to the administrative data.

Legal nonimmigrants are noncitizens who are admitted legally in the United States for a specified period and for a specified purpose (students, high-tech guest workers, au pairs, and so on). In official terms, they have not “immigrated”; however, many groups do qualify as “residents” and are in the population estimates used to develop CPS weights. Legal nonimmigrants are identified using their employment status, occupation, place or type of employment, school enrollment, income, age, information about spouse, and information about other household members. Targets are not used in producing these estimates.

Noncitizens who are not identified as refugees/asylees or as temporary aliens may be either LPRs or undocumented aliens. The assignment of LPR or undocumented status is made in a manner that comes acceptably close to demographic targets for the sizes of the two groups that should be found in the CPS data—the overall number, the numbers of children vs. adults, and the numbers in the states with the largest immigrant populations. Individuals with certain CPS-reported characteristics—those who are in occupations that make it very unlikely that they are undocumented (police officers, for example), those who receive government benefits for which undocumented aliens are ineligible, and veterans—are automatically coded as LPRs. For other noncitizens, their probability of being an LPR vs. an undocumented alien depends on state of residence, sex, and occupation.