To Accompany “Medicaid as an Investment in Children: What is the Long-Term Impact on Tax Receipts?”
by David Brown, Amanda Kowalski, Ithai Lurie
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Acknowledgements

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Overview

This calculator can be used to compute Medicaid eligibility for children on a monthly basis from 1980-2005. The calculator contains the income thresholds that each of the 48 contiguous states plus Washington DC, Alaska and Hawaii used to means-test Medicaid over this period. These thresholds can be used in conjunction with information about birth cohort, family income and state of residence to determine if a child was eligible for Medicaid.

Detailed Description of calculator

This section details the data sources, definitions and key assumptions of the calculator (called “medicaidafdc8005_new.dta”). There is record for each month of the year for each birth cohort (based on month and year of birth) for each state. Birth cohorts are observed up to and including age 18 (228 months old) but we only include observations for birth cohorts during the years 1980-2005. There are no observations for birth cohorts before they are born. This means that birth cohorts can appear in the calculator anywhere between 1 and 228 months. The data is in long format, there are a total of 3,627,936 rows: 51 states x 539 birth cohorts x min(max(Date-Birthday,0),228) months of observations.

Box 1: Understanding the structure of the data

The first birth cohort is February 1961:

Data: 51 states x one month of one year (Jan 1980)= 51 obs
In February 1980 they are aged 19 and no longer included in the calculator

The second birth cohort is March 1961

Data: 51 states x two months month of one year (Jan, Feb 1980) = 102 obs

The first birth cohort that has a full set of data is January 1980

Data: 51 states x 12 months of 19 years = 11,628 obs

The last birth cohort is born December 2005

Data: 51 states x one month of one year (Dec 2005)= 51 obs
There are no observations for a birth cohort in the time period before they are born

Each column represents a different variable. There are 16 variables, which are described in the Codebook section below.
Where eligibility thresholds were reported in dollars per month, we have converted them to a proportion of the federal poverty level for a family of four. Data were obtained on the federal poverty levels from the Social Security administration Office of Retirement and Disability Policy annual statistical supplement, table 3.E8.

**Box 2: Converting $ to fpl**

\[
\text{afdc} = \frac{\text{afdc4}*12}{(\text{base} + \text{inc} + \text{inc} + \text{inc})}*100
\]

where  
- **afdc** = income eligibility as a % of the federal poverty level
- **afdc4** = income eligibility threshold in $ per month for a family of four
- **base** = federal poverty level for one person ($ per year)
- **inc** = federal poverty level per each additional person ($ per year)
AFDC eligibility 1980-2005\(^1\)
The income eligibility thresholds for AFDC are coded in the variable “afdc”. The thresholds provided are for a family of four people and expressed as a percentage of the federal poverty line. We use this family size because it is the most commonly available, particularly in the earlier years where data was scarce. This assumption results in very little loss of generality. When we convert the income thresholds and the actual family income to a % of fpl we are adjusting for family size (since the fpl varies by family size and thus reflects family size). We are therefore comparing a per person concept of family income with a per person concept of the income threshold.

1980-1984
Data was obtained for the needs standard (in $) for a family of four for the AFDC program from documentation files provided by Jonathon Gruber and Aaron Yelowitz for their paper “Public Health Insurance and Private Savings” *Journal of Political Economy* 107(6):1249-1274.\(^2\) We used the data file “ben5.dta” and extract the variable “needs” for afdcsize=4. This variable is provided as a single observation per state per year and is already in $/year. We convert it to a percentage of the federal poverty level, as described in Box 2.

1985-1995
Income eligibility thresholds for the AFDC program were obtained from Dan Rosenbaum. The dataset we received contained one observation per state per month for the years 1984-1996. We do not use the data from 1984 or 1996. The dataset also contained variables for income eligibility thresholds for families of varying sizes. We extract the needs standard for a family of four (“ns4”). This variable provides thresholds in terms of $/month, we convert it to a percentage of the federal poverty level as described in Box 2.

1996-2005
Data on the TANF program for 1996-2005 was obtained from the Urban Institute Welfare Rules Database. We extract all variables for all states and years in the category “dollar amounts” for the coverage “majority only”. Ultimately, we only make use of the variable da_v1f04, which is the need standard for a family of four expressed in $/month. This variable was converted to an annual dollar amount (by multiplying by 12) and then expressed as a percentage of the federal poverty level. This process is described in Box 2.

Children’s eligibility 1987-2012
In the late 1980’s and early 1990’s there was a series of expansions to Medicaid eligibility for children. Essentially these reforms provided access for children from families that would not traditionally qualify for welfare on the basis of family structure or because they were not low income enough. We have thresholds for two programs: expanded Medicaid for children and the State Children’s Insurance Program (state CHIP).

1987-1995
Data on income eligibility thresholds for children covered through Medicaid expansion programs were obtained from Tony Lo Sasso for the years 1987-1995. These data have one observation per birth cohort

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\(^1\) The AFDC program was replaced by TANF in 1997. The thresholds coded into afdc from 1997 onwards are for TANF.

\(^2\) The data can be found at [http://gatton.uky.edu/faculty/yelowitz/](http://gatton.uky.edu/faculty/yelowitz/)
(month and year of birth), per month of the year, per state. The income eligibility thresholds were already expressed as a percentage of the federal poverty level. This data file contains observations for 1996 and 1997, however we do not use them.

1996-2005
Data on income eligibility thresholds for children covered through CHIP or Medicaid (1996-2005) were obtained from Kosali Simon. The data we received contained one observation per birth cohort (month and year of birth), per month of the year, per state. Family income eligibility thresholds for children are coded in the variable “medfpl” for Medicaid expansions and “chpmdfpl” for state CHIP programs.

Income disregards
Not all income counts towards the income test. States typically allow the disregard of some amount of income relating to the cost of, or earnings from, work. These disregards can be in the form of a flat amount, a percentage of income, or both. The information on disregards has been coded into two variables: “dollaramount”, which contains the flat amount in $ that can be subtracted from income, and “percentremain”, which is a percentage that can be disregarded after the flat amount has already been subtracted. Hence the “percentremain” should be applied after the “dollaramount” in the computation of eligibility.

Data on disregards for 1984-1995 were obtained from Dan Rosenbaum. We use the 1984 disregards to impute disregards for 1980-1983. For 1997-2013 we use the income disregards for the TANF programs as a proxy for Medicaid income disregards. These data were obtained from the Urban Institute Welfare Rules Database. We use all variables from the category “Earned income disregards”, coverage “majority only.” Since we are trying to measure disregards in the steady state, that is, we want a measure of permanent disregards rather than disregards that are only available in some particular months since first qualifying for welfare. To do this, we use only disregards that are available in all months (when ed_#1tme = “All Months”). We use the variable “ed_#1$t0%” to determine if the disregard is a dollar amount or a percentage of income. The value in ed_edr#1 is then recorded in the “dollaramount” or “percentremain” respectively. Some states have multiple disregards, however, only allow for one disregard of each type per state per year. We use the additional disregards when there is no “first disregard” that meets our inclusion criteria. To be included, the later disregards must still meet the inclusion criteria. Any state that has no disregards that meet the criteria, or has no disregards, are coded as 0. We exclude the “percentremain” disregard for Connecticut because it is set at 100% up to a threshold and our extraction method does not allow for this kind of more complex disregard.

Computing eligibility
Eligibility is based on birth cohort, family size and assessable family income. Since eligibility is specified as a %fpl, you need to take annual family income in your data, subtract the disregards and then convert it to a % of the fpl. To do this you need to divide income by the federal poverty level for that child’s family size. The federal poverty level is computed by taking the base amount and adding the incremental amount for each other family member (that is if you have a family size variable you need to subtract one in order to take out the person themselves as they are accounted for in the base).
Box 3: Creating a measure of assessable income

**Step 1: Subtract disregards**

\[ inc\_assess = (\text{faminc} - \text{dollarmount}) \times (1 - \text{percentremain}) \]

**Step 2: Convert from $/year to %fpl**

\[ inc\_fpl = \frac{inc\_assess}{(\text{base} + (\text{famsize} - 1) \times \text{inc})} \times 100 \]

where
- \text{faminc} = \text{family income ($ annual)}
- \text{dollarmount} = \text{income disregarded}
- \text{percentremain} = \% \text{of income after subtracting dollarmount that can be disregarded}
- \text{incfpl} = \text{family income as % of fpl}
- \text{famsize} = \text{number of people in family that are co-resident}
- \text{base} = \text{federal poverty level for one person ($ per year)}
- \text{inc} = \text{federal poverty level per each additional person ($ per year)}

After creating a measure of assessable income that is a % of the federal poverty level, you simply compare the income measure to the income threshold, for the child’s birth cohort, which is contained in the calculator.

Since we are only interested in whether children have access to any kind of health insurance through Medicaid, we create a variable called “eligfpl”, which contains our threshold of interest. For the period 1987-2005, this is the maximum of the state CHIP and Medicaid expansion threshold. From 1980-1986 and in years over 1987-2005 when there is neither a state CHIP nor a Medicaid expansion program in place for a birth cohort, we code in the AFDC thresholds in the “eligfpl” variable.

Computing eligibility for children is then simply a matter of comparing their family income as a % of the fpl with the eligibility threshold for their birth cohort in their state of residence. This is shown in Box 4.

**Box 4: Computing eligibility**

\[ \text{Eligible= yes if incfpl } \leq \text{eligfpl} \]

We do not consider family structure when computing Medicaid eligibility. The Medicaid expansions for children and state CHIP programs did not impose restrictions on family structure for eligibility. However, the AFDC program was generally limited to single parent families unless the state had an AFDC Unemployed Parent program in place (and one of the parents met the criteria for that). Ignoring the family structure requirement in the early period of the calculator is a source of measurement error in our computation. Users of the calculator have the option of imposing a family structure restriction, as it is implemented by restricting the sample of potential eligibles in your own data.