Birth Weight Data Problems/Solutions: 2004–2010 Sample Child Files

Background

In the NHIS all birth weights reported in pounds/ounces (non-metric) are translated into grams (metric) and all birth weights reported in grams are translated into pounds/ounces. Therefore, the final non-metric and metric birth weight variables each include all sample children regardless of the way birth weight was reported originally.

In 2004-2010 the final data files contained relatively few high birth weight children (10+ pounds), while the proportion of children with very low birth weights (1 pound) increased, for example, from 0.3% in 2003 to 2.7% in 2004. This increase continued through 2010.

NHIS staff re-examined the raw data in order to explore this discrepancy. The results of this study are detailed below.

NHIS has released Sample Child Birth Weight Mini-files with revised birth weight data for 2004-2010. The new variables (TOTOZ_P and BWTGRM_P) on the mini-files contain the corrected Sample Child birth weight data and should replace the birth weight variables on the original 2004-2010 Sample Child files. The new files are available on the NHIS website, **http://www.cdc.gov/nchs/nhis.htm**.

Specific problems and solutions

1. Pound/ounces response variables

   Raw data for pounds were entered into a two digit field. During data processing, only one digit was read, so that birth weight values of 10-15 pounds were changed to 1 pound, misclassifying high birth weights to very low birth weights. As an indication of the magnitude of the problem, in 2003 there were 263 children with a birth weight of 10-15 pounds. In addition, if an interviewer entered 08 for pounds, it was changed to “0”, which was then categorized as “not ascertained”.

   The misclassifications were compounded when the incorrect pound values were translated into grams.

   The ounce data were processed correctly.

Solution:

For 2004-2010, NHIS reprocessed the birth weight pound data as a two digit variable with leading “0”s. The edits which translated the pounds/ounces to grams were then reprocessed with the corrected pound values.

A new variable, TOTOZ_P, total birth weight in ounces, is included in the Sample Child Birth Weight Mini-files for 2004-2010. TOTOZ_P includes the categories “18 ounces or less”, “19-192 ounces”, and “193+ ounces”.

2. Gram response variable

There were additional problems associated with the data entry and processing for cases where birth weight was originally reported in grams. However, it is important to note that relatively few respondents report birth weight in grams (about 100 cases or less than 1% in 2004).

Prior to 2004, initial data entry allowed birth weight values of less than 500 grams, as well as values of more than 5485 grams. During data processing, those with a birth weight of less than 500 grams were included in the “500 grams or less” category. Those with a birth weight of more than 5485 grams were included in the “5485 or more grams” category.

From 2004-2010, initial data entry allowed birth weight values of 500-6900 grams. In the editing process the range was set to 500-5485 grams, and responses greater than 5485 grams were changed to “Don’t know”. Responses of less than 500 grams were not allowed by the instrument and are not present in the raw data files.

Solutions:

For the 2004-2010 NHIS, birth weight data were reprocessed to move the cases with birth weight values of 5485-6900 grams from the “Don’t know” category to a new category, “5485+ grams”.

For cases where birth weight was originally reported in grams, there are no data for very low birth weights of less than 500 grams. However, in most cases (99%) birth weights were originally reported in pounds/ounces and were translated into

grams during edit processing. Any translated very low birth weight values were included in a new category, “500 grams or less”.

A new variable, BWTGRM_P, total birth weight in grams, is included in the Sample Child Birth Weight Mini-files for 2004-2010. BWTGRM_P includes the categories “500 grams or less”, “501-5484 grams”, “5485+ grams”.

3. Conversion problem

There was some inconsistency between the upper and lower limits of the converted non-metric and metric variables.

Solution:

Upper and lower limits are now consistent between the non-metric and metric variables.