

**Breastfeeding among U.S. Children Born 1999—2005,
CDC National Immunization Survey Data**

The National Immunization Survey (NIS) breastfeeding data released on our website on August 1 2008 reflect data from interviews conducted from July 2001 through December 2007 with caregivers of 19—35 month old U.S. children born 1999—2005 (www.cdc.gov/breastfeeding/data/NIS_data/index.htm). The data are used to monitor breastfeeding initiation, duration, and exclusivity and to evaluate progress toward Health People 2010 breastfeeding objectives.

NIS data demonstrate that breastfeeding rates have increased since 1999, but continue to fall short of Healthy People 2010 objectives regarding duration and exclusivity (www.healthypeople.gov). Among children born in 2005, 74% initiated breastfeeding, whereas 43% were breastfeeding at 6 months and 21% at 12 months of age. Approximately 32% of infants born in 2005 were exclusively breastfed through 3 months of age, and 12% were exclusively breastfed for 6 months. The data released also highlight disparities in breastfeeding, with non-Hispanic black and socioeconomically disadvantaged groups having lower breastfeeding rates.

Breastfeeding data released by state indicate that nearly half of U.S. states have achieved national Healthy People 2010 objectives for breastfeeding initiation, though fewer than one in four states have achieved one of more of the

objectives for breastfeeding duration or exclusivity

(www.cdc.gov/breastfeeding/data/report_card2.htm).

We added a new indicator to our data release this year – formula supplementation of breast milk, meaning formula supplementation among infants who are breastfed. You will recall that in the 2006 survey we revised our interview question on the age at which the child was first fed something other than breast milk to two separate questions: one on the age at which the child was first fed formula and a second question on the age at which the child was first fed anything other than breast milk or formula

(www.cdc.gov/breastfeeding/data/NIS_data/survey_methods.htm). While the combined responses on the 2 new questions are used to calculate rates of exclusive breastfeeding, responses on the question on formula use are used to examine formula supplementation among infants who are breastfed. This is important in terms of monitoring the prevalence of formula supplementation of breast milk, particularly during the first few days of life. The American Academy of Pediatrics (AAP) recommends that an infant be breastfed without supplemental foods or liquids for the first 6 months of age. In 2007, Healthy People 2010 expanded its breastfeeding objectives to include targets for breastfeeding exclusivity.

We found that among infants born in 2005 who were breastfed, one in four were supplemented with formula within 2 days of birth, suggesting a need to encourage maternity care practices that support exclusive breastfeeding among

women who choose to breastfeed their newborn infant. Our data further show that among infants breastfeeding at 3 months of age, 38% were supplemented with formula before 3 months of age, and among those breastfeeding at 6 months, 46% were supplemented with formula before 6 months.

Although this is the second year we are presenting the NIS breastfeeding rates by year of child birth, this is the first year we are finalizing data for a birth year previously released as provisional. Last August we released the provisional 2004 data because approximately two thirds of the final 2004 birth cohort had been surveyed. Interviews with the caregivers of children born in 2004 continued through November of 2007. Therefore, we now have data on all survey children born in 2004, which enabled release of the final 2004 birth year data on our website this August. You will notice that the provisional 2004 rates released August 2007 differ from the final 2004 rates released August 2008. While the final national rates differ little from the provisional national rates, some individual states showed more fluctuation. For example, in Montana the provisional 2004 rate for percent ever breastfed was 87.7 ± 5.5 ; the final 2004 rate was 83.4 ± 4.7 . The final rate, while 4.3 percentage points lower than the provisional rate, is within the confidence interval – or margin of error – reported on the provisional rate (± 5.5). In fact, rate changes from provisional to final in all states were within the confidence interval reported on the provisional rates. It is for this reason that we are comfortable releasing provisional data. However, we are interested in hearing from you on your opinion on this issue. Another option would be to release data on a birth year only when we have interview data on all children

born in the birth year. In this situation we would hold the provisional 2005 data just released until August 2009

You may also notice that rates among children born in 2003 also changed slightly from the 2003 rates released last year. This reanalysis was unexpected because we had data on all survey children born in 2003 last year when we released the 2003 rates. However, revised estimates for the 2003 birth year were necessary because of a change in sampling weights for one of the survey years (2006) that included children born in 2003. The revision was made to address 690,965 births (out of 5,867,674 births) for which race/ethnicity information appeared to be missing from vital statistics. The missing information was confined to Florida, Idaho, Kentucky, New Hampshire, New York, Pennsylvania, South Carolina, Tennessee, and Washington. Statistical assumptions were initially made to account for the missing data. When subsequent documentation revealed race/ethnicity data on a portion of the births that previously had missing information, the survey weights were re-calculated using the actual data. We therefore revised our breastfeeding rates based on the re-calculated survey weights. The revised breastfeeding rates for 2003 differ little from the original estimates. The 2004 birth year was also affected by the revised survey weights because 2004 births were also included in the 2006 survey year. However, the fluctuation you see from the 2004 provisional to final rates is also due to the fact that additional children were added to the 2004 birth cohort during the 2007 survey year (as discussed above).

Finally, I would like to address the change in breastfeeding rates from 2004 to 2005. For this comparison, I used the final 2004 rates reported on the website this year and the provisional 2005 rates now available. While the change in national rates was less than 1.5 percentage on each of the 8 indicators monitored (and ≤ 1.0 percentage point on 5 of the 8 indicators), state-specific rates showed more variability. The smaller sample size per state contributes to the variability observed. In the majority of states, the difference from 2004 to 2005 was within the confidence interval reported for 2004, and in all but one state the confidence intervals for the two rates overlapped. We also tested the statistical significance of the change from 2004 to 2005 and in most cases found that the changes observed over one year were not statistically significant. However, we recognize that it can be disconcerting when your state rate of breastfeeding initiation drops several percentage points or no longer meets one or more of the Healthy People 2010 objectives for breastfeeding. For example, in Maine the breastfeeding initiation rate among infants born in 2004 was 75.4 ± 5.6 percent. Among 2005 births, the rate was 71.7 ± 7.5 percent. Although the rate in 2005 is 3.7 percentage points lower and no longer meets the Health People 2010 target of 75%, the new rate is within the confidence interval reported in 2004. In other states, the confidence intervals on the two rates overlap substantially. It is important to consider the 95% confidence intervals around the rates when observing changes from year to year. If the confidence intervals overlap, we cannot determine whether or not a change in rate occurred.

When monitoring progress in your state, it is most useful to look at the trend in rates over a few years.

Currently, we are discussing changes to our website to facilitate the evaluation of trends nationally and within each state. We are also considering combining data over birth years so that demographic and socioeconomic breakdowns can be reported within a state. We are eager to hear from you about your specific data needs.

Thank you for attending the teleconference. If you have any questions, please call or e-mail me at 770-488-5878 or kscanlon@cdc.gov.

Kelley S. Scanlon, PhD, RD

Division of Nutrition, Physical Activity, and Obesity, CDC

August 2008