On October 5, 2012 a revised version of this dataset was posted to the Open Data Portal. See **Version History** on page 2 of this document for details.

Title: Births and birth rates in Chicago, by year, 1999 – 2009

Brief Description: This dataset contains the annual number of births and crude birth rate (births per 1,000 residents) with corresponding 95% confidence intervals, by Chicago community area, for the years 1999 – 2009.

Description: The crude birth rate is the number of live births to resident mothers in a specified geographic area (in this instance, Chicago), divided by the total population for the same geographic area for a specified time period resulting in a fraction multiplied by 1,000. The "population at risk" of giving birth to a live neonate is poorly represented by the total population. As a result, the crude birth rate is affected by the demographic distribution of the population in the denominator, especially by sex and age, but also by race or ethnicity category and other demographic characteristics. There are other fertility measures that are more population-at-risk specific and more comparable across time and geography, such as the general fertility rate.

A confidence interval is a range of values used to describe the uncertainty around a measurement (e.g., rate) and serves as a measure of the variability in the data. Confidence intervals are calculated based on the standard error of the rate, which is based on the rate and the number of events (e.g., births). Most confidence intervals are calculated as 95% confidence intervals by convention. The 95% confidence interval can best be understood that if the measurement were conducted 100 times, 95 times the true value would be within the calculated confidence interval and 5 times the true value would be either higher or lower than the range of the confidence interval. For example, a crude birth rate of 10 births per 1,000 population with a lower limit of 8 and an upper limit of 12 means that there is a 95 percent chance that the rate was between 8 and 12 births per 1,000. Conversely, there is a 5 percent chance that the rate was lower than 8 or higher than 12. Birth rates are subject to random error, arising from random fluctuations in the number of births over time or between different populations. The 95% confidence interval reflects the stability of the rates. A stable rate is one that would be close to the same value if the measurement were repeated, i.e., if the rate did not vary greatly from one year to the next. An unstable rate is one that would vary from one year to the next due to chance alone. Wider confidence intervals in relation to the rate indicate instability. Narrow confidence intervals indicate stability, and large fluctuations from year to year would not be expected. If differences are observed between stable rates (those with narrow confidence intervals), then it is likely that the differences represent true variations, rather than random fluctuations in the number of births. In general, if the 95% confidence intervals of two rates do not overlap, they are likely to be significantly different. For a description of the approach used to calculate confidence intervals for the estimates in this dataset, see page 94 of the March 28, 2000 *National Center for Vital Statistics Reports* publication at http://www.cdc.gov/nchs/data/nvsr/nvsr48/nvs48_03.pdf.

CDPH calculated the indicators using geocoded annual birth certificate datasets supplied by the Illinois Department of Public Health (IDPH). Geocoding is the process of using location data, such as street address, to determine associated geographic identifiers, such as latitude and longitude, postal code, or community area. Approximately 1% of births per year in the birth certificate datasets are classified as Chicago residents but are not geocoded to a particular community area; these records are included in citywide counts and analyses only. Births classified as Chicago but for which the census tract of residence is located outside the city limits were excluded; this resulted in the exclusion of approximately one out of every 5,000 births. The source of annual population estimates by community area was a linear interpolation of counts from the 2000 and 2010 United States Census, using the method described in *Trend Analysis and Interpretation: Key Concepts and Methods for Maternal and Child Health Professionals* (see page 8 of http://mchb.hrsa.gov/publications/pdfs/trendanaylsis.pdf). 2000 population counts were also used for the year 1999. Indicators for Chicago as a whole are provided in the final row of the table.

Nationally, the 2009 crude birth rate was 13.5 births per 1,000 total population. (See http://www.cdc.gov/nchs/data/nvsr/nvsr59/nvsr59_03.pdf.)

Disclaimers: IDPH specifically disclaims responsibility for any analysis, interpretations, or conclusions. The population counts used in the calculations are estimates, and this potential source of error should be taken into account when considering the precision of the indicators. Error can result from geocoding as a result of inaccurate or incomplete source data (e.g., the recording of a person's residential residence does not include "North" or "South") or discrepancies in the reference data that is used to match addresses to their associated geographies (e.g., a particular street segment is excluded or associated to corresponding geographies incorrectly). This potential source of error should be taken into account when considering the precision of the indicators. Methods and data sources may not be identical to those used in CDPH reports published prior to November 2011.

Data Owner: Epidemiology and Public Health Informatics, Chicago Department of Public Health (CDPH).

Time Period: 1999-2009

Frequency: Updated upon receipt of annual birth certificate dataset.

Related Applications: N/A

Version History: In September 2012, Epidemiology and Public Health Informatics revised the method used to calculate community area population counts from the 2010 U.S. Census. The revised approach bases population on block-level counts rather than tract-level counts, and better accounts for the population distributions within tracts 8310 and 8439. This revision affects rate calculations for the Logan Square (22), West Town (24), Woodlawn (42), and South Shore (43) community areas. An updated version of the dataset was posted to the Open Data Portal on October 5, 2012 to reflect these changes.