On June 4, 2013 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: Infant mortality in Chicago, 2005 – 2009

Brief Description: This dataset contains the annual number of infant deaths annually, cumulative number of infant deaths, and average annual infant mortality rate with corresponding 95% confidence intervals, by Chicago community area, for the years 2005 – 2009.

Description: For this analysis, the infant mortality rate is defined as the number of resident newborns in a specified geographic area (e.g., community area) who died before reaching the age of one year, divided by the number of resident live births for the same geographic area during the same specified time period; this proportion is then multiplied by 1,000 to represent the approximate number of infant deaths per 1,000 live births.

CDPH calculated the indicators using geocoded annual birth certificate and death 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 and 1% of deaths per year in the birth and death 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 and deaths 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 and approximately one out of every 25,000 deaths.

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., deaths). 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, an infant mortality rate 10 infant deaths per 1,000 live births 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 deaths per 1,000. Conversely, there is a 5 percent chance that the rate was lower than 8 or higher than 12. Infant mortality 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 deaths. 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 pages 26-28 of *Public Health Data: Our Silent Partner, Module 2* at http://www.cdc.gov/nchs/data/training/module2.pdf.

Nationally, 6.7 infant deaths per 1,000 live births occurred in 2006. The Healthy People 2020 target is 6.0. (See http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=26, item MICH-1.3.)

Disclaimers: IDPH specifically disclaims responsibility for any analysis, interpretations, or conclusions. When fewer than 20 infant deaths attributed during the period of study were recorded (cumulatively, not annual average), the rate and confidence interval estimates are unreliable; this instability should be considered when making comparisons. 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 June 2013.

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

Time Period: 2005 - 2009

Frequency: Updated as new data becomes available.

Related Applications: N/A

Version History: In the original dataset posted to the Open Data Portal on June 1, 2012, 28 infant deaths from 2008 were erroneously excluded from the table. A corrected dataset was posted on July 3, 2012.

Following an address review and additional geocoding of records from the 2008 death certificate dataset that initially had insufficient or invalid address information, the community areas of residence for 8 Chicago infant decedents were determined. On August 16, 2012 a revised version of the dataset was posted to incorporate these results.

The version of the dataset posted on June 4, 2013 incorporates data from 2005 - 2009 and replaces the previous version, which covered 2004 - 2008.