

Prematurity, low birth weight significantly impact mortality rates

April 1 2013, by Jennifer Lollar



(Medical Xpress)—A study by University of Alabama at Birmingham (UAB) researchers published April 1, 2013, in the journal *Pediatrics* showed that increasing numbers of premature and other low birth weight infants are the leading cause for the leveling off of infant mortality and neonatal mortality rates in the United States.

[Infant mortality rate](#) is defined as the number of infants who die before their first birthday. Neonatal [mortality](#) rate is defined as the number of

infants who die before reaching 28 days old.

Researchers concluded the leveling off of these rates is due to increases in live birth registration of smaller and more immature infants, particularly infants with birth weights of less than 500 grams or 1.1 pounds.

"Doctors today are able to keep smaller babies alive due to improved obstetrical and [neonatal care](#)," said UAB Edwin M. Dixon Professor of Pediatrics Wally A. Carlo, M.D., the study's senior author, director of the UAB Division of Neonatology and director of UAB's newborn nurseries. "Because of this, more and more [small babies](#) are being reported as [live births](#), and a large proportion does survive thanks to medical advances. However, because so many more small babies are being reported as live births, and a number do not survive past their first birthday, the rates of infant and neonatal mortality are not going down as much as they have in the past."

Throughout the 20th and into the 21st centuries, there has been a steep, continual decline in the number of babies who die before their first birthday. According to previous research published in Pediatrics, from 1915 to 2008, [infant mortality](#) rates in the United States decreased from 99.9 deaths to 6.6 deaths per 1,000 live births. The neonatal mortality rate decreased from 20.5 in 1950 to 4.3 deaths per 1,000 live births in 2008.

However, infant mortality and neonatal mortality rates in the United States plateaued from 2000 to 2008, from 6.6-7.0 and 4.3-4.7 deaths per 1,000 live births, respectively. Data from the Centers for Disease Control and Prevention shows that from 1983-2005, preterm birth rates increased from 9 percent to 12.7 percent, and the percentage of [low birth weight](#) infant births increased from 6.8 percent to 8.2 percent.

The research team sought to determine the impact of [birth weight](#) and the infant's gestational age at birth on mortality rates.

"We know that preterm birth and low birth weight are among the most frequent causes of infant and neonatal death in the United States," Carlo added. "What we did not know before this study was if the increasing proportion of very preterm births (babies born at less than 28 weeks' gestation) and very low birth weight (babies weighing less than 3.3 pounds at delivery), particularly those less than 1.1 pound, disproportionately affect mortality rates."

Using data compiled by the National Center for Health Statistics, Carlo and the research team looked at birth and infant death data for all the years available, 1983-2005. Years 1992-94 were unavailable in the database and excluded from the study. For the birth-weight specific neonatal and infant mortality rates, the data were analyzed following weight subgroups used in the database: 3,500 grams; 3,000-3,499 grams; 2,500-2,999 grams; 2,000-2,499 grams; 1,500-1,999 grams; 1,250-1,499 grams; 1,000-1,249 grams; 750-999 grams; 500-749 grams; and

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