

# Infant Mortality

## Definition

Infant mortality is the total number and rate per 1,000 of infants who died before their first birthday.

## Data in context

Infant mortality is one of the most accurate measures of the quality of health in a society. The prevalence of infant mortality is associated with health indicators such as maternal health, quality of health care, access to care, and socioeconomic conditions.<sup>1</sup>

There are many causes of infant mortality, but the leading cause is birth defects, which are responsible for one out of every five infant deaths.<sup>2</sup> The other leading causes include low birth weight, Sudden Infant Death Syndrome, maternal complications, and umbilical cord complications.<sup>3</sup> Early infant deaths, which occur in the first month of life, are most often due to preterm birth (before the 37th week of gestation) or low birthweight.<sup>4</sup>

In 2005, the infant mortality rate for the nation was 6.87 deaths per 1,000, and for Kentucky it was 6.64 deaths per 1,000.<sup>5</sup> Kentucky's rate improved from 2000 to 2005, and the state now ranks 21st in the nation on this indicator.<sup>6</sup>

Infant mortality rates can be improved through increased access to quality prenatal and newborn care.<sup>7</sup> Health coverage helps mothers access early and frequent prenatal care services, which is critical in ensuring healthy outcomes. Risk of infant mortality is higher for births to unmarried, and often under-resourced, mothers; male babies; preterm or low-weight births; births to women who did not receive prenatal care in the first trimester; and multiple births.<sup>8</sup> Infants born to women in their late twenties or early thirties face a lower risk of infant mortality than children born to teenage mothers or women over age 40.<sup>9</sup>

Protective factors, such as access to education, sufficient income, and neighborhood safety, improve health outcomes, yet communities of color are less likely to have these protections.<sup>10</sup> The infant mortality rate varies substantially by race and ethnicity both nationally and in Kentucky.<sup>11</sup> While congenital malformations were the leading cause of infant death for nearly all racial and ethnic categories, preterm and/or low-weight births were the leading cause of infant mortality for

infants born to Black mothers in Kentucky.<sup>12</sup> Sudden Infant Death Syndrome (SIDS) accounted for a higher proportion of deaths among Black and White children compared with other groups.<sup>13</sup> Kentucky can reduce disparities in infant mortality rates by ensuring prevention efforts reach all racial and ethnic groups and focusing on each group's highest risks.<sup>14</sup>

In Kentucky among counties with a rate calculated, rates ranged from 4 per 1,000 births in McCracken, Madison, and Oldham Counties to 16 per 1,000 in Butler County. The greatest increase in the number of infant deaths between the two time periods occurred in Campbell and Kenton Counties. Adair, Hardin, and McCracken showed the largest decreases in infant deaths.

Strategies to prevent infant mortality in Kentucky include the following:

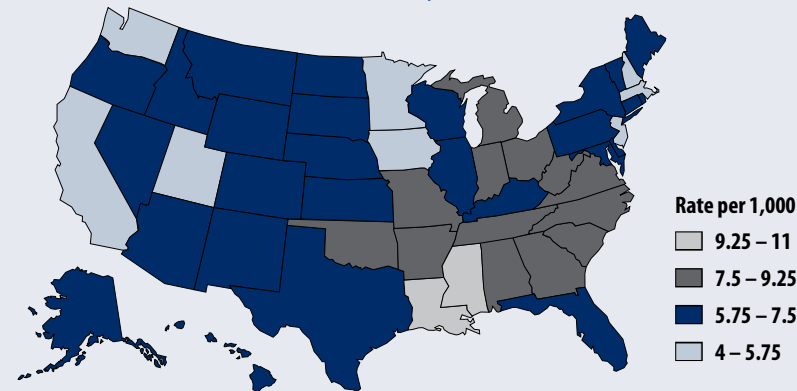
- ▶ Promote universal access to adequate early and frequent prenatal care and infant care, including the Healthy Start program, Medicaid and KCHIP, and childhood immunizations;
- ▶ Increase reach of public health campaigns such as Back to Sleep and Folic Acid to all families, with a special emphasis on those who are disproportionately affected by infant mortality;
- ▶ Offer intensive home visiting programs for high risk, first time pregnant mothers;
- ▶ Focus efforts on reducing teen births; and
- ▶ Fund ongoing research on the causes of infant mortality.<sup>15,16</sup>

**Data Source:** Kentucky Cabinet for Health and Family Services, processed by Kentucky Population Research at the University of Louisville Urban Studies Institute.

**Data Note:** All data refer to totals over the 3-year periods of 1999-2001 and 2004-2006. Data are reported by mother's place of residence, not infant's place of birth. Data on live births for the rate calculation for 2006 are preliminary and exclude births to Kentucky mothers that occurred in Ohio.

**Rate Calculation:** (number of deaths among infants during the first year of life between 1999-2001 \* 1,000) / (total number of live births between 1999-2001)  
(number of deaths among infants during the first year of life between 2004-2006 \* 1,000) / (total number of live births between 2004-2006)

Infant Mortality Rates, 2005



Source: Annie E. Casey Foundation, KIDS COUNT Data Center.

- 1 Federal Interagency Forum on Child and Family Statistics (2007). *America's Children: Key National Indicators of Well-Being, 2007*. Washington, DC: U.S. Government Printing Office.
- 2 Mathews, T., and MacDorman, M. (2008). "Infant Mortality Statistics from the 2005 Period Linked Birth/Infant Death Data Set." *National Vital Statistics Reports*, vol. 57, no. 2. Hyattsville, MD: National Center for Health Statistics.
- 3 Ibid.
- 4 Ibid.
- 5 Kung, H., Hoyert, D., Xu, J. and Murphy, S. (2008). "Deaths: Final Data for 2005." *National Vital Statistics Reports*, vol. 56, no. 10. Hyattsville, MD: National Center for Health Statistics.
- 6 Annie E. Casey Foundation. (2008). *2008 KIDS COUNT Data Book: State Profiles of Child Well-Being*. Baltimore, MD: Annie E. Casey Foundation.
- 7 Department for Health and Human Services (2006). *Fact Sheet: Preventing Infant Mortality*. Available at <http://www.hhs.gov>. Accessed August 2008.
- 8 Mathews, T., and MacDorman, M. (2008). "Infant Mortality Statistics from the 2005 Period Linked Birth/Infant Death Data Set." *National Vital Statistics Reports*, vol. 57, no. 2. Hyattsville, MD: National Center for Health Statistics.
- 9 Ibid.
- 10 Annie E. Casey Foundation (2006). "Unequal Opportunities for Health and Wellness." *Race Matters Toolkit*. Available at <http://www.aecf.org>. Accessed September 2008.
- 11 Mathews, T., and MacDorman, M. (2008). "Infant Mortality Statistics from the 2005 Period Linked Birth/Infant Death Data Set." *National Vital Statistics Reports*, vol. 57, no. 2. Hyattsville, MD: National Center for Health Statistics.
- 12 Data obtained from the Kentucky Cabinet for Health and Family Services, September 2008, processed by Kentucky Population Research at the University of Louisville Urban Studies Institute.
- 13 Ibid.
- 14 Mathews, T., and MacDorman, M. (2008). "Infant Mortality Statistics from the 2005 Period Linked Birth/Infant Death Data Set." *National Vital Statistics Reports*, vol. 57, no. 2. Hyattsville, MD: National Center for Health Statistics.
- 15 Department for Health and Human Services (2006). *Fact Sheet: Preventing Infant Mortality*. Available at <http://www.hhs.gov>. Accessed August 2008.
- 16 Donovan, E., Ammerman, R., Besl, J., Atherton, H., Khoury, M., Altaye, M., Putnam F., and Van Ginkel, J. (2007). "Intensive Home Visiting Is Associated With Decreased Risk of Infant Death." *Pediatrics*, vol. 119, no. 6. Elk Grove Village, IL: American Academy of Pediatrics.

## Infant mortality (number & rate per 1,000 live births)

	1999-2001		2004-2006	
	Number	Rate	Number	Rate
Kentucky	1,079	7	1,223	7
Adair	13	21	1	*
Allen	3	*	5	*
Anderson	4	*	5	*
Ballard	0	*	2	*
Barren	6	4	15	9
Bath	4	*	4	*
Bell	5	*	8	7
Boone	18	4	28	6
Bourbon	2	*	5	*
Boyd	11	7	12	7
Boyle	6	6	10	10
Bracken	4	*	1	*
Breathitt	8	16	2	*
Breckinridge	3	*	10	14
Bullitt	12	6	22	10
Butler	3	*	8	16
Caldwell	1	*	2	*
Calloway	3	*	5	*
Campbell	19	5	38	12
Carlisle	0	*	0	*
Carroll	5	*	0	*
Carter	7	6	9	8
Casey	2	*	6	11
Christian	24	5	26	6
Clark	8	6	13	10
Clay	9	10	6	7
Clinton	2	*	1	*
Crittenden	1	*	2	*
Cumberland	3	*	4	*
Daviess	27	7	27	7
Edmonson	2	*	1	*
Elliott	2	*	2	*
Estill	5	*	6	10
Fayette	87	8	90	8
Fleming	0	*	3	*
Floyd	8	5	17	10
Franklin	15	8	12	6
Fulton	1	*	2	*
Gallatin	1	*	1	*
Garrard	4	*	1	*

	1999-2001		2004-2006	
	Number	Rate	Number	Rate
Grant	5	*	7	6
Graves	6	4	10	7
Grayson	7	7	7	7
Green	2	*	4	*
Greenup	11	9	11	9
Hancock	1	*	4	*
Hardin	47	11	33	7
Harlan	12	10	9	8
Harrison	5	*	7	10
Hart	5	*	4	*
Henderson	14	8	22	12
Henry	4	*	5	*
Hickman	0	*	2	*
Hopkins	8	4	13	7
Jackson	2	*	7	13
Jefferson	209	7	215	7
Jessamine	7	4	14	7
Johnson	6	6	7	8
Kenton	37	5	77	12
Knott	2	*	4	*
Knox	11	8	14	9
LaRue	5	*	1	*
Laurel	13	6	17	7
Lawrence	1	*	6	9
Lee	2	*	2	*
Leslie	5	*	3	*
Letcher	7	8	7	7
Lewis	1	*	4	*
Lincoln	6	6	4	*
Livingston	1	*	3	*
Logan	3	*	7	6
Lyon	1	*	1	*
McCracken	20	8	10	4
McCreary	5	*	4	*
McLean	1	*	2	*
Madison	18	6	12	4
Magoffin	4	*	5	*
Marion	5	*	3	*
Marshall	2	*	6	6
Martin	8	15	4	*
Mason	7	10	3	*

	1999-2001		2004-2006	
	Number	Rate	Number	Rate
Meade	8	9	4	*
Menifee	1	*	2	*
Mercer	2	*	3	*
Metcalfe	3	*	5	*
Monroe	2	*	2	*
Montgomery	10	10	14	13
Morgan	5	*	1	*
Muhlenberg	6	5	6	5
Nelson	6	4	8	5
Nicholas	1	*	3	*
Ohio	6	7	5	*
Oldham	8	5	7	4
Owen	5	*	3	*
Owsley	1	*	0	*
Pendleton	2	*	6	11
Perry	7	6	12	10
Pike	23	10	16	7
Powell	4	*	5	*
Pulaski	10	5	12	5
Robertson	0	*	0	*
Rockcastle	4	*	2	*
Rowan	0	*	9	12
Russell	5	*	2	*
Scott	8	5	5	*
Shelby	9	6	10	6
Simpson	7	10	5	*
Spencer	0	*	5	*
Taylor	5	*	4	*
Todd	9	17	1	*
Trigg	3	*	4	*
Trimble	0	*	3	*
Union	5	*	2	*
Warren	30	8	32	8
Washington	1	*	2	*
Wayne	5	*	2	*
Webster	8	15	4	*
Whitley	5	*	18	14
Wolfe	4	*	1	*
Woodford	7	8	6	7

\* Rates were not calculated for counties with fewer than 6 occurrences.