

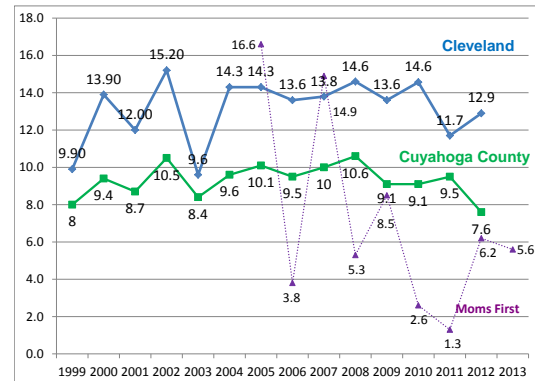
Infant Mortality in Cleveland – A report for Cleveland City Council Health Committee

Presented by CDPH Office of Biostatistics, September 3, 2014, revised October 1, 2014

From 2004 to 2010, infant mortality rate for Cleveland has been resistant to change, ranging from 13.6 to 14.6 deaths under 1 year of age per 1,000 live births. See **Figure 1**.

In 2011 and 2012 saw the first significant change in rates, respectively, 11.7 and 12.9 deaths per 1,000 live births. And in those two years, the change in rates between Cleveland and Cuyahoga County diverged, i.e. One rate rose while the other fell. Infant mortality rates for MomsFirst clients, while highly variable, are trending lower (better) overall.

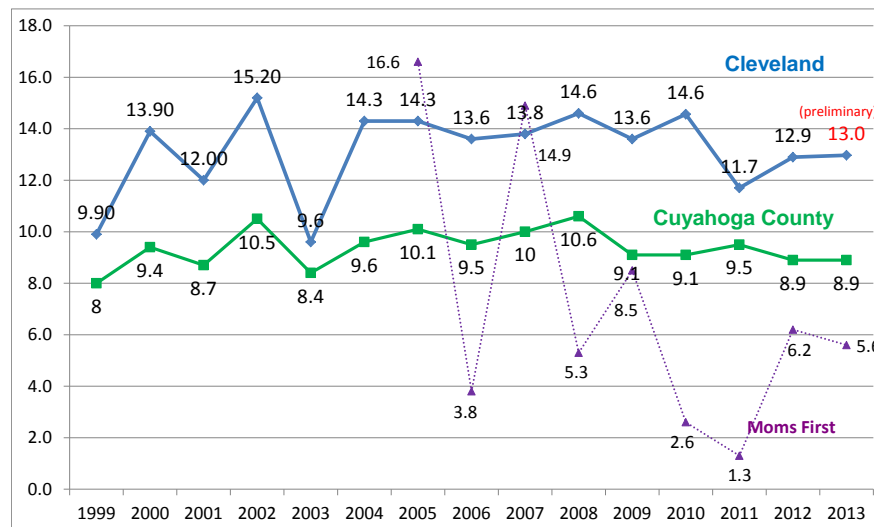
Figure 1. Trends in infant mortality for Cleveland, Cuyahoga County and CDPH Moms First Program clients



Five years of birth and death records, from **2008 to 2012**, are the most recent data available from the Ohio Department of Health.

Data from 2013 are preliminary. Infant death data were obtained from the Cuyahoga County Medical Examiner’s Office, courtesy of the Cuyahoga County Board of Health. The 2013 infant mortality rate for births in Cleveland was 13.0 deaths per 1,000 live births. This is seen in Figure 2. This preliminary rate is still lower than the 10-year moving average of 13.6 for 2004-2013.

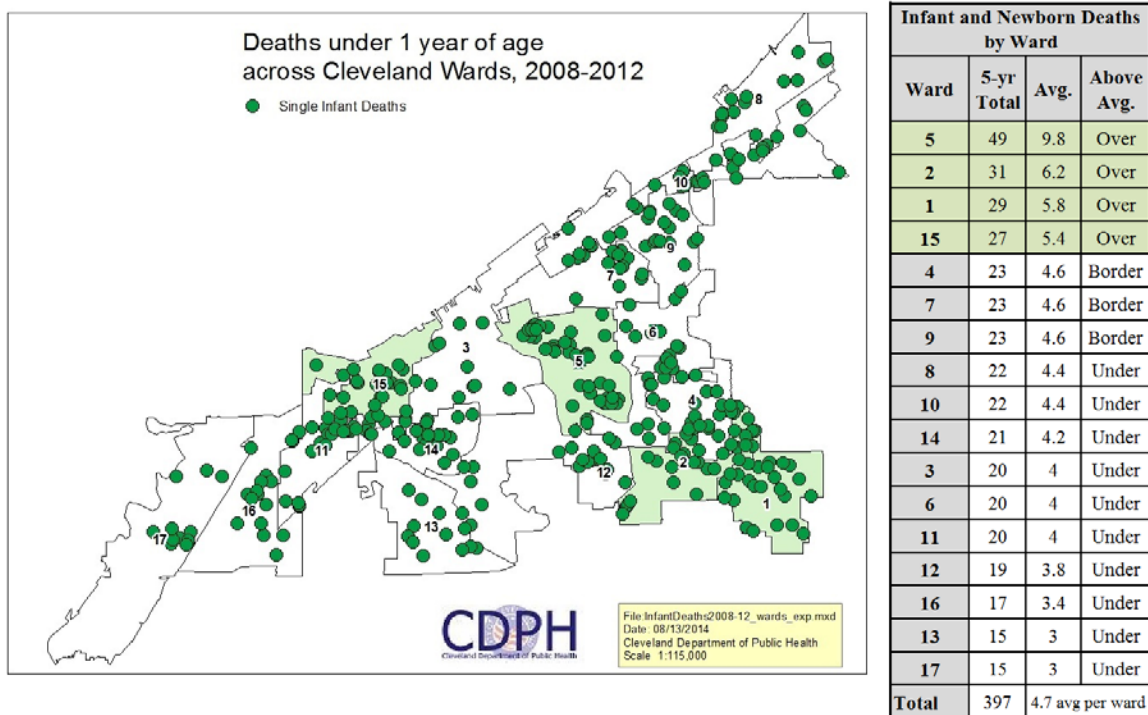
Figure 2



Deaths by Ward

From 2008-2012, there were 397 deaths under 1 year of age among Cleveland residents, an average of 4.7 per ward. **Wards 5, 2, 1, and 15** had the highest average number of deaths, all above the city average (**Fig. 3**).

Figure 3

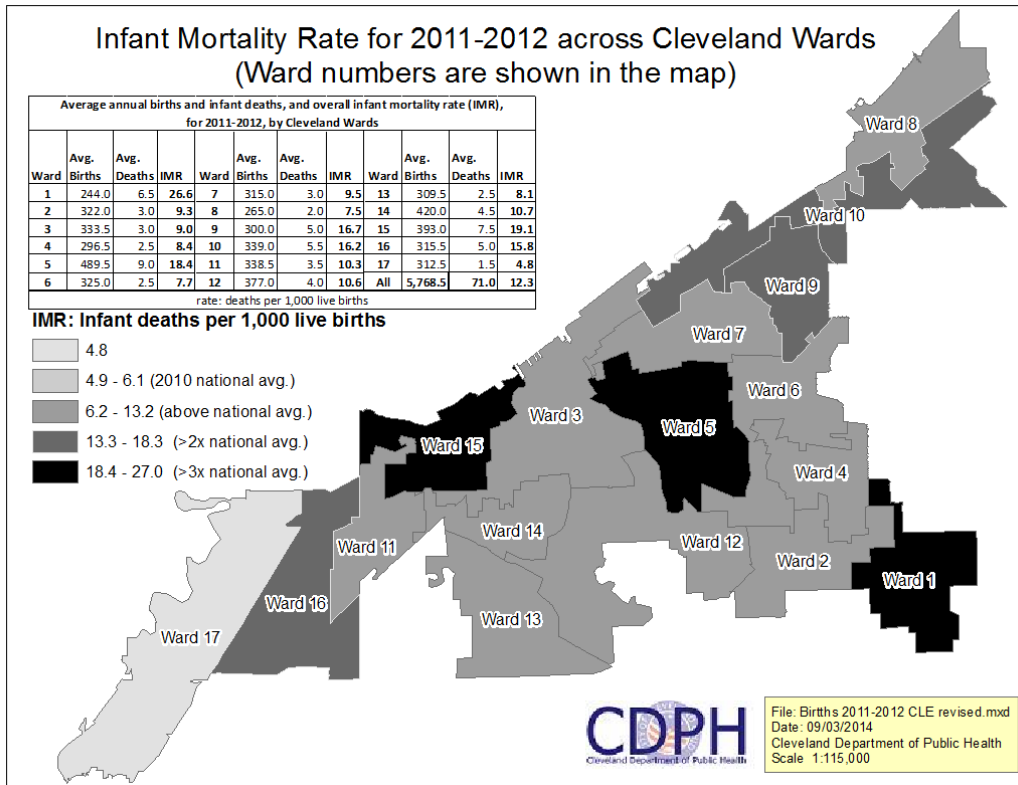


Infant Mortality Rates, 2011-2012, by Ward

Using the two most recent years of data, 2011 and 2012, three of the four wards with the highest number of deaths also have the highest infant mortality rate (IMR). These are **Ward 1 (IMR = 26.6)**, **Ward 15 (IMR = 19.1)**, **Ward 5 (IMR = 18.4)**. See Figure 3.

The two-year IMR for **Ward 1** is over four times the national rate and over three times the national rate in **Wards 5 and 15**. The IMR in **Wards 9, 10 and 16** are over twice the national rate (6.1 per 1,000 live births, 2010). Source: CDC).

Figure 3



Causes of Death

Cause of death is provided in the death certificate and coded by the Ohio Department of Health. **Figure 4** presents two tables that group cause of death into four categories:

- Prematurity-related and in utero complications
- Labor and delivery complications
- All others, usually involving infection, congenital causes, GI disorders, etc.
- Generally preventable causes

Generally preventable causes are those involving, as listed from the death certificates:

- Sudden Unexplained Infant Death (SUIDI), formerly SIDS
- noxious influences transmitted in placenta or breast milk
- exposure to narcotics
- accidental
- asphyxia
- strangulation
- suffocation
- unspecified cause of mortality

Figure 4: Causes of death and infant mortality rate for Cleveland deaths age under 1 year, 2008-2012

2008-2012 Causes of Death (#)					
Ward	Prematurity-related or in utero complications	Labor & Delivery related	Generally Preventable*	All others (e.g. infection, obstruction, Cystic Fibrosis, congenital causes etc.)	Total Deaths
1	19	5	5	0	29
2	18	4	5	4	31
3	12	2	1	5	20
4	15	4	2	2	23
5	20	7	17	5	49
6	11	3	3	3	20
7	15	2	3	3	23
8	13	2	4	3	22
9	13	4	4	2	23
10	18	3	1	0	22
11	11	5	2	2	20
12	12	1	4	2	19
13	10	3	2	0	15
14	10	6	4	1	21
15	8	7	8	4	27
16	10	2	1	4	17
17	9	1	4	1	15
Total*	224	61	70	41	397
*Sudden Unexplained Infant Death, noxious influences transmitted in placenta or breastmilk, exposure to narcotics, accidental, asphyxia, strangulation, suffocation, unspecified cause					

2008-2012 Causes of Death (%)					
Ward	Prematurity-related or in utero complications	Labor & Delivery related	Generally Preventable*	All others (e.g. infection, obstruction, Cystic Fibrosis, congenital causes etc.)	Total Deaths
1	66%	17%	17%	0%	29
2	58%	13%	16%	13%	31
3	60%	10%	5%	25%	20
4	65%	17%	9%	9%	23
5	41%	14%	35%	10%	49
6	55%	15%	15%	15%	20
7	65%	9%	13%	13%	23
8	59%	9%	18%	14%	22
9	57%	17%	17%	9%	23
10	82%	14%	5%	0%	22
11	55%	25%	10%	10%	20
12	63%	5%	21%	11%	19
13	67%	20%	13%	0%	15
14	48%	29%	19%	5%	21
15	30%	26%	30%	15%	27
16	59%	12%	6%	24%	17
17	60%	7%	27%	7%	15
Total*	57%	15%	18%	10%	397
*Sudden Unexplained Infant Death, noxious influences transmitted in placenta or breastmilk, exposure to narcotics, accidental, asphyxia, strangulation, suffocation, unspecified cause					

We used all five years of data to provide a more representative and informative sample.

Ward 5 (Central, northern Kinsman and Buckeye-Slavic Village) **had the most infant deaths (n=49) during 2008 to 2012 where 35% of the infant deaths were due to generally preventable causes.**

In **Ward 15** (parts of Ohio City, Detroit-Shoreway, and Edgewater) 30% of the 27 infant deaths were generally preventable. **Ward 1** (Lee-Harvard, Lee-Seville, and the eastern portion of Union-Miles) and **Ward 2** (Union-Miles, and portions of Mt. Pleasant) had 29 and 31 infant deaths, respectively; about 1 in 6 (16 to 17%) of their infant deaths were generally preventable.

Wards 3, 10, and 16 are notable having the smallest percentage of infant deaths (5-6%) during 2008-2012 that were generally preventable.

Demographics

The burden of infant deaths is highest among the Black/African American population.

52% of Cleveland’s population is Black/African American non-Hispanic (2010 US Census). Although about 60% of all births in 2008-2012 were to Black/African American non-Hispanic mothers, 78% of infant deaths during the same period were Black/African American non-Hispanic.) **See Figure 5.**

For 2012, the IMR for Black infants was 15.73 deaths per 1,000 live births (vs. 11.84 White and 10.87 Hispanic).

- Neonatal death among was 8% higher among White infants (11.18 deaths per 1,000 live births) than Black neonates (10.29) and 20% higher than Hispanic neonates (9.32).

- Post-Neonatal death among Black infants was 8 times greater (5.43 deaths per 1,000 live births) compared to White infants (0.66) and Hispanic infants (1.55)
- Prematurity having very low birth weights (under 1500 g) among Black infants was 2.8 times greater than among White and Hispanic babies
 - Black: 3.72% of births
 - White: 1.32% of births
 - Hispanic: 140% of births
- Prematurity having moderate birth weights (1501-2500 g) among Black infants was 1.5 times greater than among White and Hispanic babies
 - Black: 12.35% of births
 - White: 8.29% of births
 - Hispanic: 11.65% of births

10% of Cleveland’s population is Hispanic/Latino (2010 US Census). Although 12% of all births in 2008-2012 were to non-Hispanic mothers, 9% of infant deaths during the same period were Hispanic/Latino. **Figure 5** shows that as many as a fifth (20%) of infant deaths in **Wards 3, 11, 14, 15, and 17** were Hispanic/Latino.

33% of Cleveland’s population is non-Hispanic White (2010 US Census). Although 27% of all births in 2008-2012 were to White non-Hispanic mothers, 13% of infant deaths during the same period were White non-Hispanic.

Note: We cannot determine the age of the mother at the time of the infant death. This information is not provided in the individual death certificate of the infant. In addition, the ODH file that links the infant birth and death records is not yet available.

Fig. 5. Demographics (%) of infant deaths per ward, reported between 2008 and 2012.

Race & Ethnicity	Percent (%) Race/Ethnicity per Ward, 2008-2012																	Total	
	Unk	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	%
Black/ non – Hispanic	100	100	100	40	100	96	95	100	91	96	95	40	84	27	52	44	35	53	78
Hispanic	0	0	0	30	0	2	0	0	0	4	0	35	5	13	24	22	18	20	9
Other non-Hispanic	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	<1
White non-Hispanic	0	0	0	30	0	2	0	0	9	0	0	25	11	60	24	33	47	27	13

Fig. 6. Demographics (#) of infant deaths per ward, reported between 2008 and 2012.

Race & Ethnicity	Race/Ethnicity (#) per Ward, infant deaths, 2008-2012																	Total (#)	
	Unk	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		17
Black/ non – Hispanic	1	29	31	8	23	47	19	23	20	22	21	8	16	4	11	12	6	8	309
Hispanic	0	0	0	6	0	1	0	0	0	1	0	7	1	2	5	6	3	3	35
Other non-Hispanic	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
White non-Hispanic	0	0	0	6	0	1	0	0	2	0	0	5	2	9	5	9	8	4	51
All	1	29	31	20	23	49	20	23	22	23	22	20	19	15	21	27	17	15	397

Note: Apart from US Census and CDPH MomsFirst data, data from the Ohio Department of Health vital statistics records were used for this analysis. The number of infant deaths in 2013 to Cleveland mothers were abstracted from records provided by the Cuyahoga County Medical Examiner’s office, courtesy of the Cuyahoga County Board of Health, Terry Allan, Commissioner.

Tables of infant births and deaths by ward are located on the next page.

Fig 7. Deaths under 1 year of age to Cleveland mothers by ward, 2008-2012

Ward	2008	2009	2010	2011	2012	Total infant deaths	Average infant deaths
Unable to locate	0	0	0	1	0	1	N/A
1	4	6	6	7	6	29	5.8
2	9	7	9	2	4	31	6.2
3	6	5	3	1	5	20	4.0
4	7	5	6	4	1	23	4.6
5	9	8	14	5	13	49	9.8
6	9	3	3	1	4	20	4.0
7	3	8	6	3	3	23	4.6
8	5	7	6	4	0	22	4.4
9	9	3	1	4	6	23	4.6
10	2	5	4	5	6	22	4.4
11	4	5	4	6	1	20	4.0
12	4	4	3	5	3	19	3.8
13	4	3	3	1	4	15	3.0
14	3	4	5	2	7	21	4.2
15	6	3	3	10	5	27	5.4
16	4	2	1	6	4	17	3.4
17	6	3	3	1	2	15	3.0
Grand Total	94	81	80	68	74	397	79.4