

**Maternal and Infant Health Monthly Surveillance Report**  
**Hamilton County**  
**September 2009**

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## Introduction

The series of Maternal and Infant Health Monthly Surveillance Reports is part of a county-wide initiative to improve maternal and infant health and reduce infant mortality. In order to make effective actions that improve the health and safety of infants in the community, it is essential to identify, describe and monitor the problem and the populations at risk. This report characterizes the current status of infant mortality and select risk factors in Hamilton County.

### Monthly surveillance

- Number of infant deaths by month
- Current monthly infant mortality rate
- Current monthly neonatal mortality rate
- Current monthly preterm birth rate

## What is Surveillance?

Public health surveillance is the ongoing, systematic collection, analysis, interpretation and dissemination of data regarding a health-related event for use in public health action to reduce morbidity and mortality and to improve health.<sup>1</sup> The Maternal and Infant Health Surveillance System is designed to better understand infant mortality in our community, monitor infant deaths that occur and evaluate whether collective actions to prevent infant death are effective. The “surveillance chart” is a very useful tool because it is set up to be interpreted quickly. Please read the General Guidelines for Using Surveillance Charts in the Appendix.

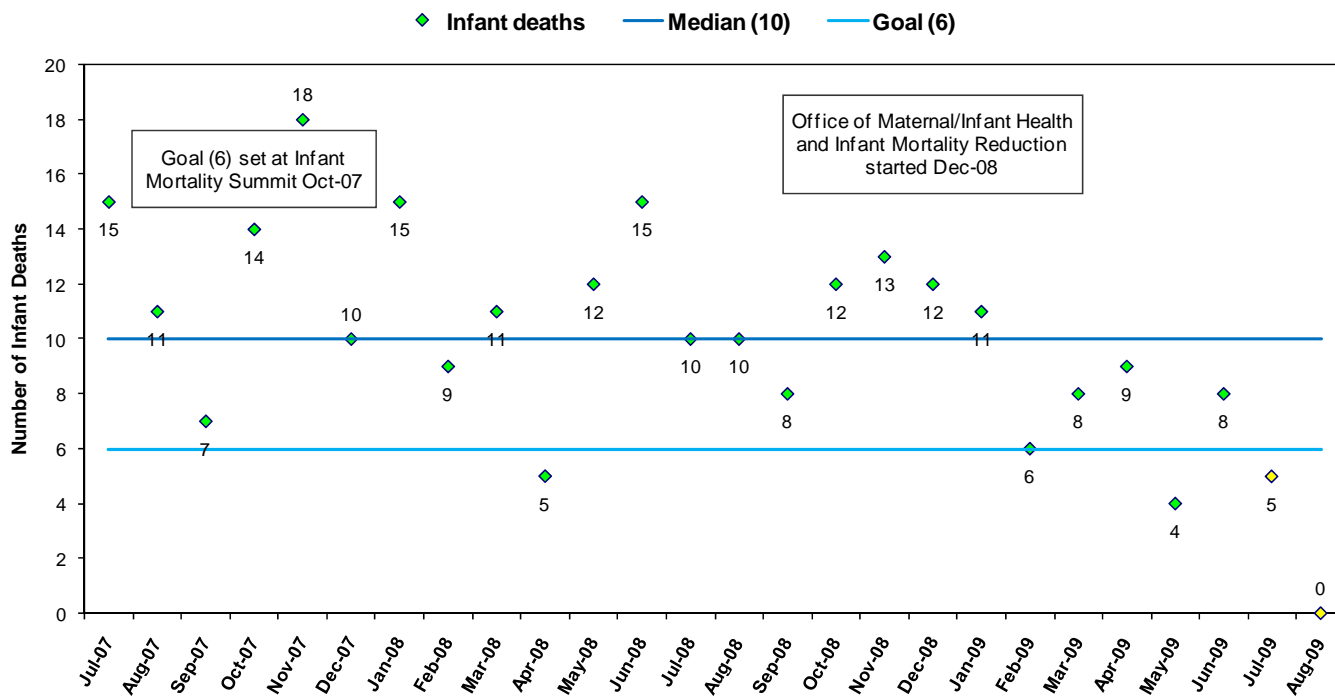
## Number of Infant Deaths

**There were 8 infant deaths in June.**

One way to monitor infant mortality is to count the number of infant deaths that have occurred. Figure 1 shows the count of infant deaths in Hamilton County by month over the past two years. In June 2009 there were 8 infant deaths. There were fewer infant deaths than the median (10) each month for the 5 most recent months. However, Hamilton County tends to have fewer infant deaths in the spring and summer months (see Seasonal Trend Analysis in the May surveillance report).

<sup>1</sup> Centers for Disease Control and Prevention. *Updated Guidelines for Evaluating Public Health Surveillance Systems: Recommendations from the Guidelines Working Group*, WMMR, July 27, 2001, Vol.50 No. RR—13

Figure 1. Number of Infant Deaths, Hamilton County 2007-2009\*



NOTE: The median is from July 2007 – June 2009 data.  
 NOTE: Yellow points are derived from preliminary data and are likely to change.  
 \*Data for 2008 and 2009 are preliminary  
 Data Source: Ohio Department of Health

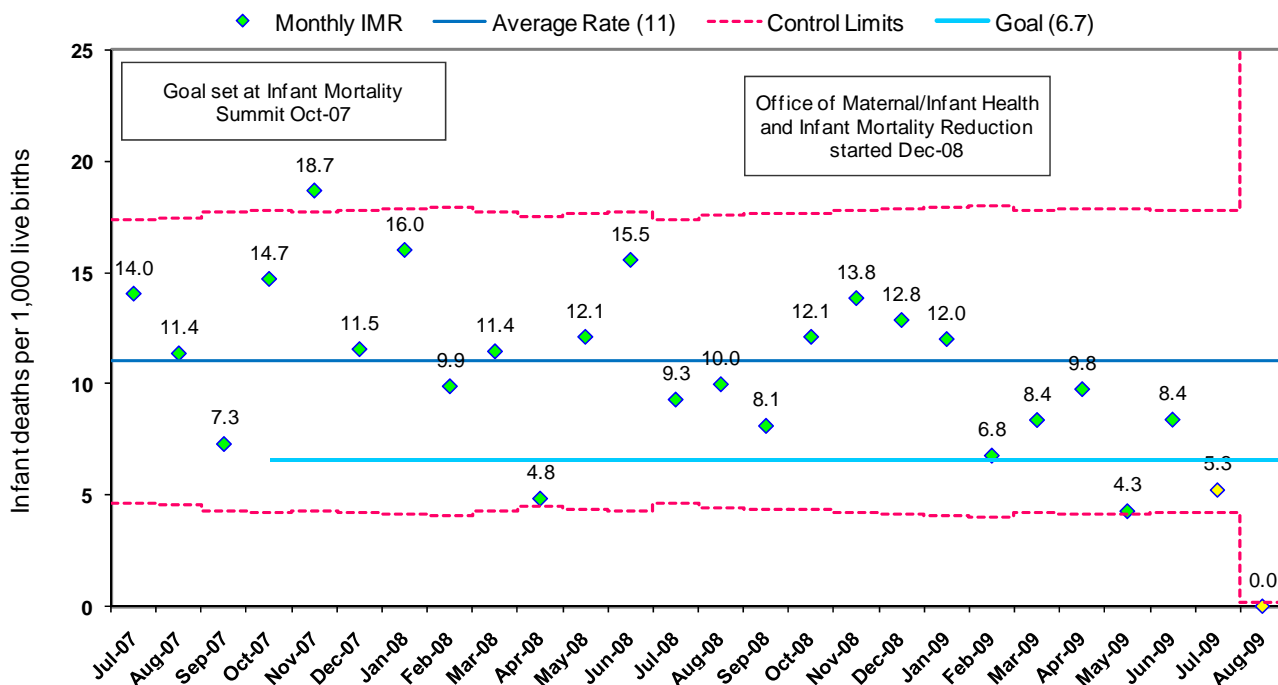
## Infant Mortality Rates

Another way to monitor infant mortality is to look at the number of infant deaths with the number of births that occur. An increase in the number of infant deaths may not be surprising if there is also an increase in the overall number of babies born. To evaluate infant deaths with regard to the number of births, we use the Infant Mortality Rate (IMR), or the number of infants less than one year who died per 1,000 live births. The Neonatal Mortality Rate (NIMR) is a specific IMR for neonates, or infants less than 28 days who died per 1,000 live births.

**The monthly IMR and NIMR have remained below the two-year average in recent months.**

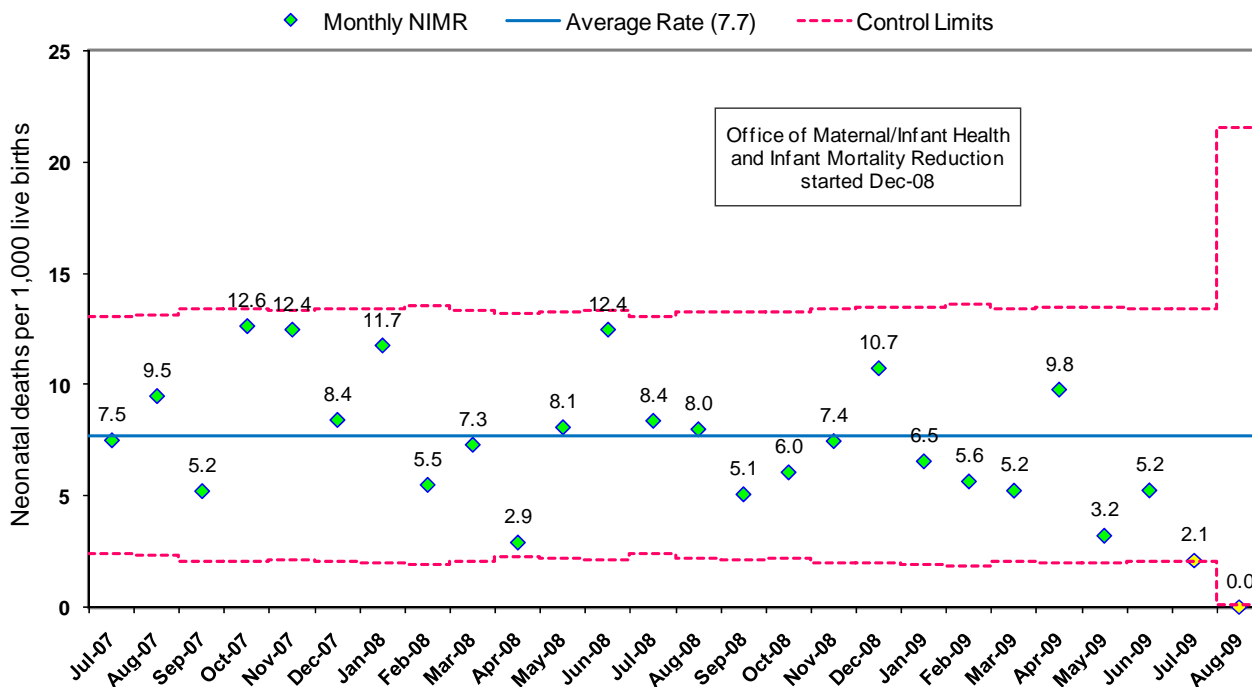
The IMR remained below the two-year average for the five most recent months. The NIMR remained below the two-year average for five of the six most recent months. As noted in the General Guidelines for Using Surveillance Charts in the Appendix, a run of eight consecutive points below the average is considered statistically significant and noteworthy.

Figure 2. Infant Mortality Rate Surveillance Chart, Hamilton County 2007-2009\*



NOTE: The IMR average rate is from July 2007 – June 2009 data.  
 NOTE: Yellow points are derived from preliminary data and are likely to change.  
 \*Data for 2008 and 2009 are preliminary  
 Data Source: Ohio Department of Health

Figure 3. Neonatal Mortality Rate Surveillance Chart, Hamilton County 2007-2009\*



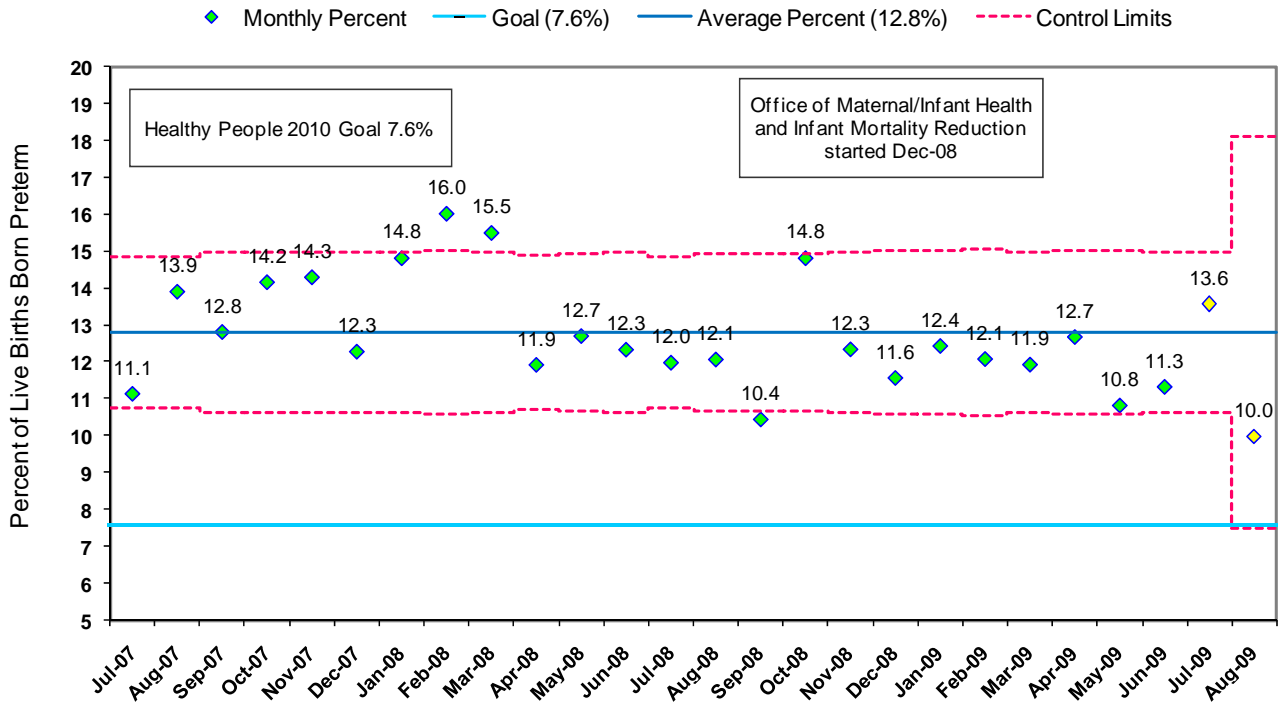
NOTE: The NIMR average rate is derived from July 2007 – June 2009 data.  
 NOTE: Yellow points are derived from preliminary data and are likely to change.  
 \*Data for 2008 and 2009 are preliminary  
 Data Source: Ohio Department of Health

# Preterm Birth Rates

The overall significant decline in preterm birth rate continued through the first half of 2009.

The preterm birth rate is the percentage of infants born before 37 weeks gestation. The overall significant decline in the preterm birth rate over 2008 was first noted in the February surveillance report. This decline continued through the first half of 2009. In June the percentage (11.3%) was below the two-year average (12.8%).

Figure 4. Preterm Birth Rate Surveillance Chart, Hamilton County 2007-2009\*



NOTE: The average percent of preterm births is from July 2007 – June 2009 data.  
 NOTE: Yellow points are derived from preliminary data and are likely to change.  
 \*Data for 2008 and 2009 are preliminary  
 Data Source: Ohio Department of Health

### General Guidelines for Using Surveillance Charts

The Hamilton County Infant Mortality Surveillance System, part of the Office of Maternal and Infant Health and Infant Mortality Reduction, uses **surveillance charts** to monitor infant mortality rates and preterm birth rates. These charts provide a method for monitoring the status of infant health over time and provide timely feedback on the effectiveness of local efforts to reduce infant deaths and preterm births.

Several tools are included in the surveillance charts that help facilitate interpretation: (1) a baseline - the center line [solid] which is the average number of deaths or births per month over the preceding two years, (2) a goal line which shows the goal that has been established by the community and (3) upper and lower control limits [dashed] that allow users to detect unusual events. Annotations indicate when certain interventions began or special changes occurred.

Here are some types of unexpected events that could be detected within surveillance charts:

- \* A single point outside of the control limit
- \* A run of eight or more consecutive points below or above the center line
- \* Six consecutive decreasing or increasing points
- \* Two out of three consecutive points near a control limit

**This report was prepared for the Office of Maternal and Infant Health and Infant Mortality Reduction, now known as the Women and Infant Vitality Network.**



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**With questions or comments regarding this report please contact:  
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