



Maternal and Infant Health Monthly Surveillance Report
Hamilton County
October 2009

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HAMILTON COUNTY
PUBLIC HEALTH

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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.¹ 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.

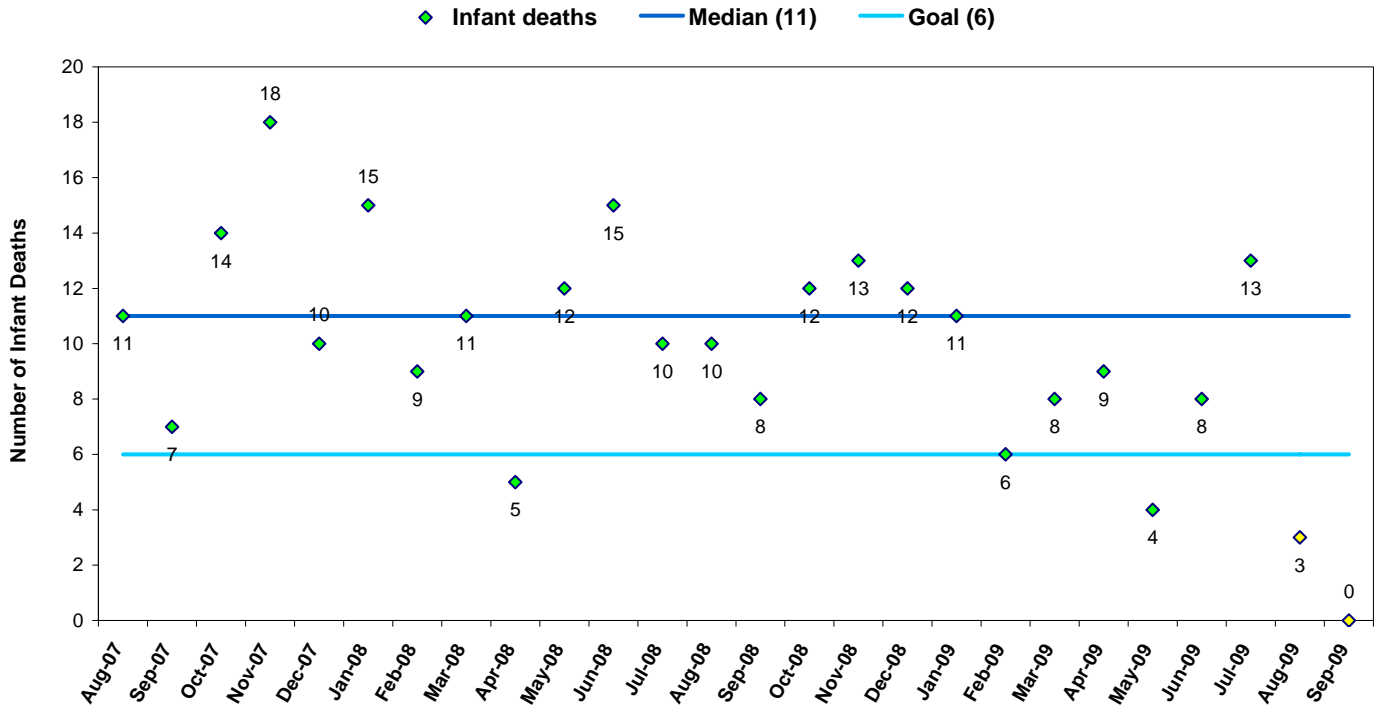
Number of Infant Deaths

There were 13 infant deaths in July.

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 July 2009 there were 13 infant deaths. This was higher than the median (11) and occurred after five consecutive months where the number of infant deaths was below the median. Continued surveillance will reveal whether this higher number is part of an increasing trend.

¹ 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 August 2007 – July 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

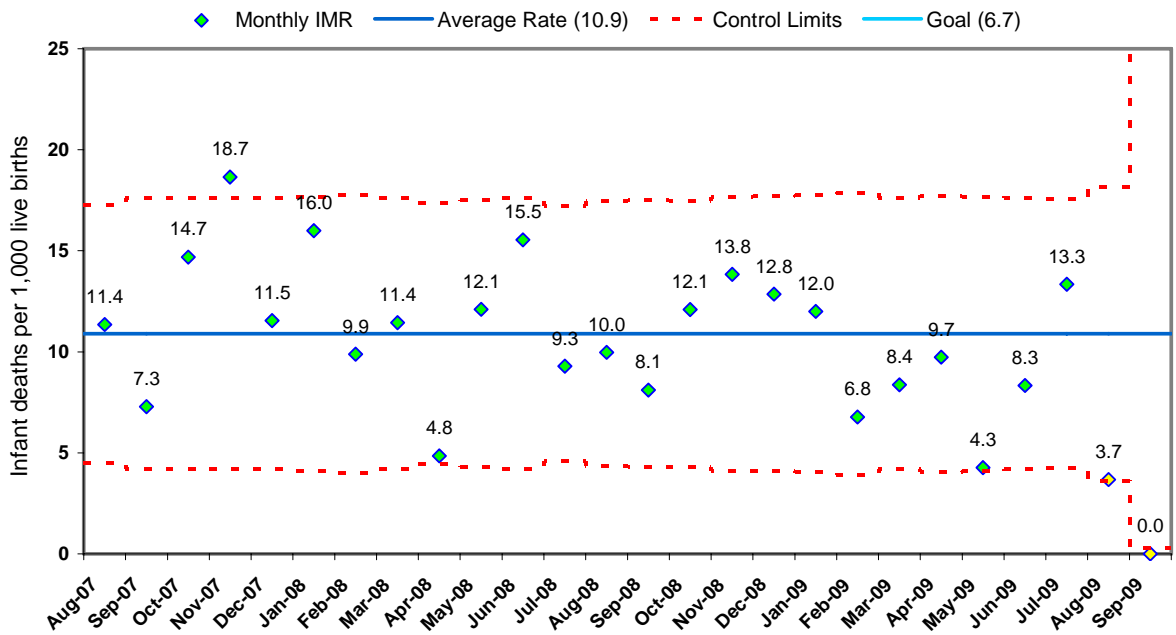
Infant Mortality Rates

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 in July were higher than average.

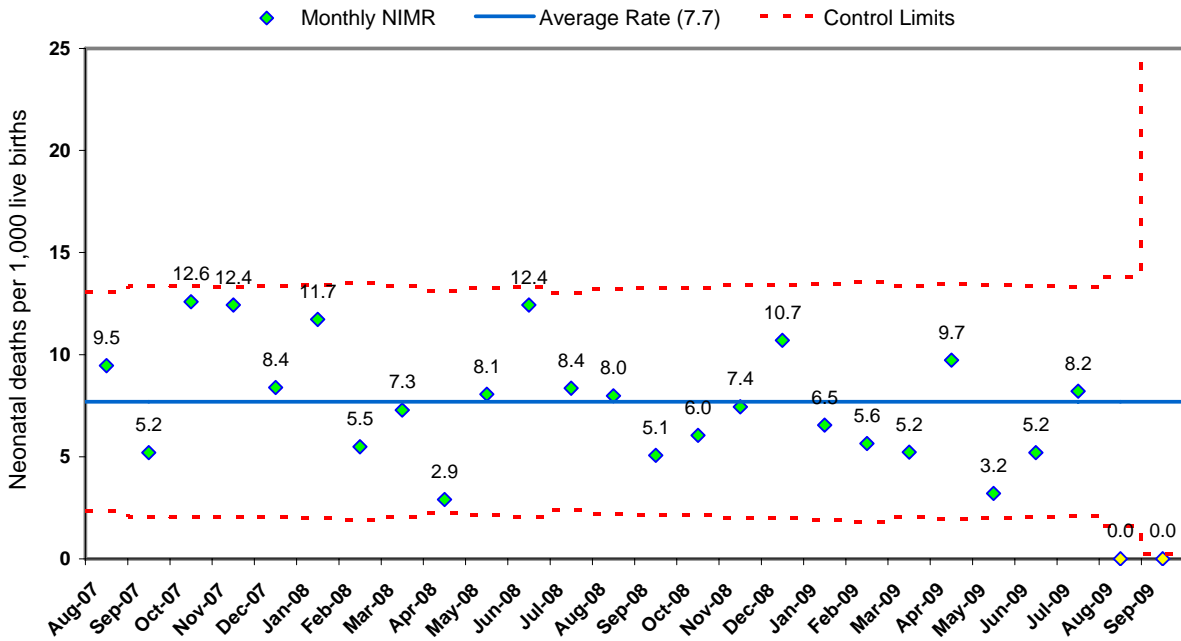
The IMR in July (13.3 deaths per 1,000 live births) was higher than the average (10.9). This followed five consecutive months where the IMR remained below average. The NIMR in July (8.2) was also above the average (7.7) after five of six consecutive months below average. As previously stated, continued surveillance will show whether these higher rates are part of an increasing trend.

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



NOTE: The median is from August 2007 – July 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*



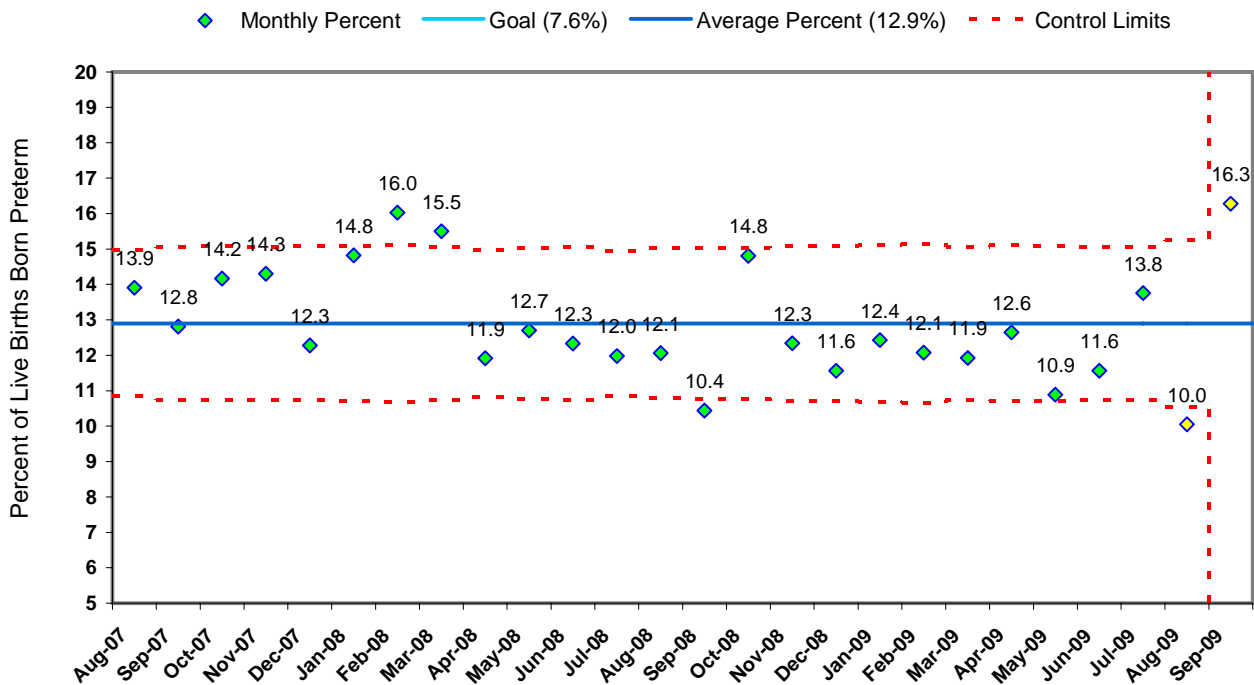
NOTE: The median is from August 2007 – July 2009 data.
 NOTE: Yellow points are derived from preliminary data and are likely to change.
 *Data for 2008 and 2009 are preliminary
 Data Source: Ohio Department of Health

Preterm Birth Rates

The percentage of births born preterm in July (13.8%) increased over two percentage points from June (11.6%).

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 July the percentage (13.8%) increased over two percentage points from June (11.6%) and was above the two-year average (12.9%). Continued surveillance will reveal whether this increase is isolated or part of trend of increasing preterm births.

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



NOTE: The median is from August 2007 – July 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.



Thank you to John Paulson at the Ohio Department of Health for providing data for this report, the Child Policy Research Center at Cincinnati Children's Hospital Medical Center for ongoing quality improvement support and the HCIMSS Data Work Group for input and guidance.

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