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LOW BIRTHWEIGHT AND VERY LOW BIRTHWEIGHT BY PLURALITY: HAMILTON COUNTY, 1993-1994.

This issue of the Maternal and Child Health Report addresses the relationship between plurality and low birthweight levels in the county. It is well known that multiple births have an increased risk for low birthweight along with an increased risk for other adverse outcomes, including mortality.

A recent study explored national trends in higher order multiple births (e.g., triplet, quadruplet, and quintuplet births)[1]. In the U.S., the number of live births in triplet and other higher order multiple deliveries tripled between 1980 (1,337) and 1994 (4,594) and quadrupled between 1971 (1,034) and 1994. The importance of accounting for this trend is underscored by the greater risk for poor outcomes among these births, such as low birthweight. The authors attributed this sharp increase to two factors—changes in the maternal age distribution, which accounts for about one-third of the increase, and the use of fertility-enhancing drugs and techniques, which accounts for the remaining two-thirds of the increase. As a result of delayed childbearing and an aging female population, the percent of mothers 30 years and older who gave birth in 1994 was much higher than in 1980. This is significant because the risk of having a multiple birth increases as maternal age increases until about age 40.

The current impact of rising multiple birth ratios on low birthweight was recently examined in another study[2]. Using national data, the authors demonstrated that while the overall level of white low birthweight increased slightly between 1980 and 1992 (from 5.7% to 5.8%), the low birthweight levels for white singletons actually declined from 4.9 to 4.7 percent. The increase in the overall white low birthweight level, then, reflects the increase in white multiple births, and to a lesser extent, a small increase in low birthweight among these births. Multiple birth ratios and overall low birthweight also rose in this period for blacks. While low birthweight for black singletons also increased, the increase was at a slower pace than for all pluralities combined. Low birthweight trends should be examined by plurality to determine accurate changes over time.

Table 1 shows the distribution of births in 1993-1994 to Hamilton County women, by plurality. In addition, Table 1 shows the relationship between plurality and low birthweight status and very low birthweight status. Among Hamilton County residents, 6.8 percent of all singleton births, 54.5 percent of all twin births, 97.7 percent of all triplet births, and 100.0 percent of all quadruplet and quintuplet births were born low birthweight. About 1 percent (1.3 %) of singletons and 14.5 percent of all twins were born very low birthweight. In addition, 29.5 percent of triplets and 66.7 percent of quadruplets were born very low birthweight. A close inspection of the data in the last column of Table 1 (i.e., percent < 2,500 grams and percent <1,500 grams) shows that the risk for very low birthweight is greater among multiples than risk for low birthweight. For example, an eightfold increase in risk is demonstrated, comparing singleton to twin risk for low birthweight (54.5/6.8=8) while an elevenfold increase in risk is demonstrated, comparing singleton to twin risk for very low birthweight (14.5/1.3=11).

[1] Martin et al. Vital Health Stat, 21(55):1997.

[2] Martin, J. and S. Taffel. Statistical Bulletin, April/June:1995.

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Table 1. Percent low birthweight and very low birthweight infants, by plurality: Hamilton County 1993-1994.

	Low birthweight (<2,500 grams)			
	Total	Number >=2,500 grams	Number <2,500 grams	Percent <2,500 grams
Singleton	24732	23048	1684	6.8
Twin	747	340	407	54.5
Triplet	44	1	43	97.7
Quadruplet	12	0	12	100
Quintuplet	4	0	4	100
Missing	24			

	Very low birthweight (<1,500 grams)			
	Total	Number >=2,500 grams	Number <2,500 grams	Percent <2,500 grams
SIngleton	24732	24412	320	1.3
Twin	747	639	108	14.5
Triplet	44	31	13	29.5
Quadruplet	12	4	8	66.7
Quintuplet	4	4	0	0
Missing	24			

Note: For twin and other higher order multiple births, these data refer to individual live births, not to sets of twins and higher order multiple births. For example, a delivery resulting In 2 live births and 1 stillbirth would be reported as 2 live births in a triplet delivery, or 2 triplet births.