

## MHBP LOCAL EVALUATION REPORT: SYNOPSIS

Title: Indicators of Infant Mortality and Morbidity in 2003: A Comparison of Clients in MHBP Interventions with the Population of Mothers and Infants in the MHBP Project Area

### Overview

This report was prepared by the local evaluator for presentation to MHBP's Data Management Committee. The goal of the evaluation was to assess the success of project interventions with pregnant women in 2003. The overall design of the evaluation consisted of a static (single year) comparison of aggregate data extracted from birth certificate records for all live births in the population (project area, N=7097) versus those for pregnant MHBP participants.<sup>1,2</sup> Outcome measures analyzed included indicators for prenatal care (early, late); infant birthweights (total low, moderate low, and very low); preterm births; and small-for-gestational-age (SGA) births. To control for putative sociodemographic differences between MHBP clients and project area cases, the data were further broken down by categories of race/ethnicity, age, and education. Percent differences between MHBP participants and the project area population in health outcome measures were assessed for all cases and within each sociodemographic subgroup. The statistical significance of differences found in these proportions was determined by a Z-test for equality of a sample proportion with a population estimate.<sup>3</sup>

### Results of the Analysis

Low birthweight outcomes. Results of the aggregate (all-case) comparisons of all project area births with those for Healthy Start prenatal participants who gave birth in 2003 are presented in Table 1. These analyses showed significantly lower incidence of total LBW among the MHBP clients. The key indicator, accounting for much of the variance between Healthy Start clients and the project area, was the outcome for "moderate" low birthweight (MLBW, between 1500 and 2499 grams). The overall rate of MLBW births in the project area was 2 to 3 times higher than that for prenatal MHBP participants. Among African-Americans, the incidence of MLBW infants in the project area was almost 3 times higher than the rate among prenatal clients. Furthermore, the data indicated that MHBP's black prenatal clients had a lower MLBW rate than both Hispanic and White women in the project area. This was an important finding because African-Americans accounted for more than half of all live births in the project area in 2003, and the incidence of low birthweight in the black population was more than twice the rate among Whites or Hispanics. When we controlled for mother's age, MLBW rates among Healthy Start clients were consistently lower than those found in the population, especially among prenatal clients over 19 years old, who had significantly lower rates of MLBW than project area women in this demographic category. Education appeared to have only a minor effect on MLBW rates. The data on very low birthweight (VLBW, <1500 grams) presented a pattern that contrasted with the findings for MLBW. The aggregate rate of VLBW births in the project area was lower,

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<sup>1</sup> The full report, which is available upon request, compared outcomes in the project area population with those both for project participants (i.e., including postpartum enrollees) and for only participants in MHBP's prenatal interventions. For the sake of brevity, we refer only to results of the comparisons between the prenatal clients and all project area mothers and infants.

<sup>2</sup> Note that these numbers include duplicate records for 72 plural births for the project area population and 11 plural births (all twins) among MHBP clients. Since we were not able to identify and exclude records from the aggregate data for the project area, we included all MHBP infants in the comparison. Thus, the unit of analysis is the infant.

<sup>3</sup> The formula for this test is  $Z = (p - P) / SE(p - P)$ , where  $p$  is the sample proportion,  $P$  is the population proportion, and  $SE$  indicates the standard error.

though not significantly, than that for MHBP prenatal clients. Comparisons among subgroups showed that African-American and White (but not Hispanic); younger (< 20 years old), and more educated (high school grad-plus) MHBP clients had higher rates of VLBW infants than similar groups of women in the project area. However, as was pointed out previously, the highest incidence of VLBW occurred among those MHBP clients who delivered twins, and the rate of plural births was almost four times higher among MHBP participants than among all project area women. When we removed plural birth clients from the MHBP data (something we, unfortunately, could not do with the aggregate data for the project area), the rate of VLBW for all pregnant participants was 1.9%. Thus, we infer that the actual levels of VLBW among MHBP clients were at least the same as in project area, and perhaps lower.

Small for gestational age. Although the analysis did not reveal any significant differences in rates of SGA births between the project area population and MHBP client groups, results generally showed lower levels of SGA births among Healthy Start prenatal participants. One exception to this pattern occurred when we controlled for mother's race/ethnicity. The SGA rates for African-American and White MHBP clients were lower than the rates among project area mothers of each race; but no differences were observed in the data for Hispanic women. Analyses by mother's age and education suggested that MHBP clients who were older than 19 years and participants who graduated from high school were less likely to deliver SGA infants than project area mothers with the same characteristics. With respect to younger and less educated groups, the data showed that prenatal clients had similar or slightly lower rates of SGA when compared to the project area population within the same demographic categories.

Preterm births. The data on rates of premature birth revealed few notable differences between the project area and groups of MHBP clients. Analyses of subgroups showed that the incidence of preterm birth was highest among African-Americans (and lowest among Hispanics), and higher among women less than 20 years of age when compared to older mothers. Level of education did not appear to be associated with preterm birth.

Prenatal care outcomes. The analysis of prenatal care health outcomes indicated that MHBP prenatal participants were significantly more likely than project area women to initiate prenatal care early (first trimester) in their pregnancies and were less likely to access care in the third trimester, or not at all. The data showed that African-American clients had the highest rates of early prenatal care, while White clients had the lowest rates of late/no prenatal care. Hispanic women were least likely to access medical care early in their pregnancy. Among MHBP clients, age appeared to have no effect on rates of early prenatal care; however, younger project-area women were 12% less likely to access prenatal care in the first trimester of pregnancy than older women in the population (63% versus 75%). With respect to education levels, MHBP clients had uniformly high rates of early prenatal care; however, less educated project-area mothers were approximately 14% less likely to access prenatal care early in their pregnancy than women who had at least a high school diploma.

### Conclusions and Recommendations

Rates of VLBW and preterm births—which are highly correlated with each other—remain too high, especially among African-Americans. A recommendation was made to emphasize education on early signs of labor with all prenatal clients, in an effort to have women who experience such symptoms to immediately seek treatment from their health care providers. Another recommendation was to implement more aggressive, culturally-appropriate outreach and public advertising to overcome barriers to early initiation of prenatal care within the Hispanic community, where the disparity with women of other ethnicities remains approximately 10-12%.

**Table 1. Comparisons of Project Area with All MHBP Clients Who Delivered in 2003 and All Prenatal Clients Who Delivered in 2003 on Birth Outcome and Prenatal Care Indicators**

Health Outcome Indicator	MHBP Project Area		Prenatal Clients	
	N	%	N	%
Total live births	7097	100.0%	229	100.0%
Total low birthweight	964	13.6%	21	9.2%*
Moderate low birthweight	771	10.9%	10	4.4%**
Very low birthweight	193	2.7%	11	4.8%
Small for gestational age births	185	2.6%	3	1.3%
Preterm births	833	11.7%	26	11.4%
Prenatal care in 1st trimester	5144	72.5%	189	82.5%**
Prenatal care in 3rd trimester/none	421	5.9%	4	1.7%**

\* p < .05, \*\*p < .01