The goal of the Michigan WIC program is to improve the health outcome of low income, nutritionally at-risk women, infants and children by providing supplemental nutritious foods, nutrition education and counseling, breastfeeding support, and referral to other health and social services. This report is developed to provide specific local information regarding the health and nutritional status of WIC participants. Three-year averages were calculated for each health indicator to provide statistics. Consequently, the point estimates represent the incidence or prevalence of an indicator between the years 2005 and 2007. Trends were constructed using 3 year rolling averages and cover the period between 2001 and 2007. Trends of selected characteristics stratified by race/ethnicity are also reported where data are sufficient.

Figure 1. Number of children < 5 years of age and women of reproductive age in HDI 2000 US census, MI PNSS/PedNSS 2007

The Health Delivery Inc. (HDI) serves Arenac, Bay, Lapeer, Macomb, Saginaw and St. Clair counties. According to the 2000 U.S. Census, there were 1,377,753 persons residing in the area served by the HDI.

Approximately 21.1% of the population were women of child-bearing age (15-44 years old). Among these women, 20.2% lived below 185% of the Federal Poverty Level (FPL). The HDI WIC agency served approximately 583 pregnant, postpartum, and lactating women, representing 0.9% of women participating in the Michigan WIC program in 2007 (Figure 1).

The 2000 Census also revealed that 7.8% of the population served by the HDI agency was less than five years of age. Among infants and children younger than five years old, 26.0% lived below 185% of the Federal Poverty Level. In 2007, the HDI WIC agency served 2,634 infants and children, representing 1.1% of all infants and children participating in the Michigan WIC program in 2007 (Figure 1).

The distribution of race/ethnicity is shown in Figure 2.

Figure 2. Distribution of race/ethnicity among HDI WIC participants, MI PNSS/PedNSS 2007
HDI At-A-Glance

For the year 2007, enrollees in the HDI agency tended to enroll earlier in WIC and later in prenatal care than women enrolled statewide. More women reported a pregnancy interval of at least 18 months and normal pre-natal body mass index (BMI) compared to women enrolled in the WIC program statewide.

Fewer women enrolled in the HDI agency reported adequate pregnancy weight gain, smoking during pregnancy, breastfeeding initiation and 6 months duration compared to the state WIC program.

More infants were born with low birth-weight (full term). More children were overweight/obese and fewer were underweight in the HDI agency compared to children enrolled statewide.

Table 1. Selected Characteristics of WIC participants in HDI, MI PedNSS/PNSS 2007 1 year data. 1,2

<table>
<thead>
<tr>
<th>HDI</th>
<th>State</th>
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<tbody>
<tr>
<td></td>
<td>N</td>
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<tr>
<td>Income &lt; 50% FPL</td>
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<tr>
<td>Income 50%-100% FPL</td>
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<tr>
<td>Child &lt;2 underweight</td>
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<tr>
<td>Child 2-5 yrs Overwt/Obese</td>
<td>418</td>
</tr>
</tbody>
</table>

* PNC= Prenatal Care

Figure 3. Health Progress Review for HDI WIC women, infants and children under five years old, 2005-2007 compared to 2001-2003 MI PNSS & PedNSS

From 2003 to 2007, the average prevalence of short stature, high birthweight and breastfeeding initiation showed the most improvement in the HDI agency. However the average prevalence of 1st trimester WIC enrollment, child obesity, and ideal pregnancy weight gain worsened during the same period.
The proportion of women who enroll in WIC in the first trimester of their pregnancy was consistently higher among women in the HDI agency compared to WIC participants statewide.

The average prevalence was highest among White, non-Hispanic women and lowest among Black, non-Hispanic women. Data were not sufficient to report the trend among American Indian, Asian and Multiracial women.

More women enrolled in the HDI agency had a high prenatal BMI compared to their national and state counterparts.

From 2003 to 2007, the average prevalence of less than recommended weight gain decreased 5%, while the average prevalence of greater than ideal weight gain increased 17% among women in the HDI agency.
The average prevalence of recommended pregnancy weight gain among women enrolled in the HDI agency during their first trimester was similar to women who enrolled later in their pregnancies.

The average prevalence of anemia during the 3rd trimester and postpartum was higher among women enrolled in the HDI agency compared to women participating in WIC throughout the state. Anemia is measured at WIC enrollment and thus reflects the health status of women at the time of enrollment.

The average prevalence of smoking during the last 3 months of pregnancy was lower among women enrolled in the HDI agency compared to the state WIC program. The rate decreased 2% in the HDI agency compared to 15% for the state from 2003 to 2007. Rates were highest among White, non-Hispanic women and lowest among Hispanic women. Data were not sufficient to report the trend among American Indian, Asian and Multiracial women.
The average incidence of low birthweight among infants whose mothers enrolled in the HDI agency was higher compared to children enrolled statewide.

From 2003 to 2007, the average incidence decreased 15% in the HDI agency. Low birthweight was highest among Black, non-Hispanic infants and lowest among Hispanic infants.

Data were not sufficient to report the trend among American Indian, Asian, Multiracial and White, non-Hispanic infants.

The average incidence of high birthweight among infants whose mothers enrolled in the HDI agency was lower compared to children enrolled statewide.

From 2003 to 2007, the average incidence decreased 16% in the HDI agency. High birthweight was highest among Hispanic infants and lowest among Black, non-Hispanic infants.

Data were not sufficient to report the trend among American Indian, Asian, Multiracial and White, non-Hispanic infants.
The average prevalence of breastfeeding initiation was higher among women who enrolled in the HDI WIC program in their first trimester compared to women who enrolled later.

Data were not sufficient to report the analysis of breastfeeding to 6 months by trimester of WIC enrollment.

The average prevalence of anemia among children enrolled in the HDI agency was higher compared to children enrolled statewide.

From 2003 to 2007, the average prevalence decreased 19% in the HDI agency. Anemia was highest among Black, non-Hispanic children and lowest among Hispanic children.

Data were not sufficient to report the trend among American Indian, Asian, and Multiracial children.

(Children with sickle cell disease and other hemoglobinopathies are included and thus the prevalence of nutritional anemia may be lower).
The average prevalence of short stature among children enrolled in the HDI agency was similar to children enrolled statewide.

From 2003 to 2007, the average prevalence decreased 28% in the HDI agency. Short stature was highest among Black, non-Hispanic children and lowest among Hispanic children.

Data were not sufficient to report the trend among American Indian, Asian and Multiracial children.

The average prevalence of overweight among children enrolled in the HDI agency was similar to children enrolled in WIC statewide. From 2003 to 2007, the average prevalence increased 2% in the HDI agency. Overweight was highest among White, non-Hispanic children and lowest among Black, non-Hispanic children.

Data were not sufficient to report the trend among American Indian, Asian and Multiracial children.
The average prevalence of obesity and overweight was higher among children whose mothers enrolled in the HDI agency during their first trimester compared to women who enrolled later in their pregnancies.