Maternal and Child Health Community Systems Assessment Report
for the Winnebago County, Illinois
Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Project

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Final Version
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Several key informants discussed their perspectives about Maternal Child Health (MCH) issues in Winnebago and Boone counties with the corresponding and lead author, Dr. Martin MacDowell. Physicians were suggested by the administration and leadership of their health system or the Dean of UIC College of Medicine at Rockford. We acknowledge, appreciate and thank these individuals for their time, insights and contributions to this report.

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Purpose:

The purpose of this report is to provide an initial broad assessment of factors influencing maternal and child health (for the purposes of this report, defined as preconception through five years of age, in Winnebago County). This assessment is not designed to incorporate all possible sources of information. The report does seek to make use of a variety of data sources including interviews with key informants knowledgeable in maternal and child health issues in Winnebago County. It is intended that the results of this assessment will be helpful in developing a strategic plan that will lead to actions that improve a wide range of MCH outcomes in the county.

Outline of the report is as follows:

I. Background and Introduction – A brief review of the literature related to factors influencing MCH as well as a discussion of selected interventions seeking to improve MCH outcomes.

II. Description of Socio-Economic (SES) indicators variation between ZIP codes in Winnebago County.

III. Description of the variation in the patterns of MCH health status indicators by ZIP code with comparisons to the state of Illinois.

IV. Review of the structure and types of MCH services available in Winnebago County based on a community inventory. A complete listing of all identified providers is included in an Appendix B.

V. Discussion of gaps and issues related to MCH services identified from discussions with key informants and selected MCH medical and social providers.

VI. Summary of report conducted by Dr. Dalstrom’s exploring women’s experiences and perceptions of their medical and social experiences as related to pregnancy and child rearing. This report is based on interviews with clients of the MIECHV community and providers. The full report is available in an Appendix D.

VII. Description of the types of social service agencies providing MCH related services in the county. A complete listing is included in an Appendix E.

VIII. Overview of the health curriculums provided in the public schools located in the county and the unique aspects regarding the health curriculums of the particular school districts (Detailed information included in Appendix F.

IX. Suggestions by the corresponding author for next steps to aid in the organization and coordination of MCH improvements between key organizations and stakeholders.

Details and specific information are provided in referenced appendices.
I. **Background and Introduction**

The health and well-being of a community’s mothers, infants and children is an important public health goal. Their well-being determines the health of the next generation and can help predict future public health challenges. Unintended pregnancies, low-birth weight and pre-term births, health behaviors, socio-economic factors and the availability and access to health services all contribute to the short and long-term health of a community’s mothers, babies and children. Identifying the factors that affect maternal and child health as well as the availability of community resources to address these factors, is an important first step to improving their well-being.

**The Range of Child Health Outcomes**

Some of these maternal and child health factors as well as evidence-based recommendations will be discussed. A health status pyramid diagram that clarifies the major categories of pediatric health outcomes is provided below to provide perspective on the range of outcomes that can occur after birth. Infant mortality is tragic for the family and society, but the social, economic, and family impacts of having a child with major permanent physical or mental disabilities (level 2) can take place over the course of a child’s lifetime. The costs of level 3 - neonatal intensive care - can be high. For a normal full-term baby the average cost of care is $2,830 versus $41,610 for a premature baby (in 2010). This quote makes clear the difference in average costs.

*The average cost for infants hospitalized in neonatal intensive care units is around $3,000 per day. While the average cost to an employer of a healthy baby born at full-term, or 40 weeks of gestation, is $2,830, the average cost for a premature baby is $41,610. If the baby is born at 26 weeks, the cost can quickly rise to $250,000 or more.*

*Infants with a moderately low birth weight can cost 46 percent more than infants born at normal birth weight. The U.S. Agency for Healthcare Research and Quality reports that medical costs for the average very-low-birthweight infant are $79,000, compared with $1,000 for a normal newborn. (Kornhauser et. al, 2010)*
Clearly the goal is for every child to be at the bottom of risk in the levels shown below which is a totally healthy child without any socioeconomic problems in the child’s home or neighborhood.

**PEDIATRIC HEALTH STATUS PYRAMID**
Goal is for all children to be at lowest level

1. Infant Mortality
2. Children with major permanent disabilities (physical or mental)
3. Neonatal Intensive Care Unit Use
4. Compromised health (Preterm or low birth weight)
5. Children with minor health or learning issues
6. At-risk home due to parent SES issues
7. Totally healthy child with no SES issues

**Selected Prior Literature**
A brief review of the literature below highlights the many factors that influence maternal and child health outcomes.

**Unintended Pregnancies/Births**
Unintended pregnancies and births greatly impact maternal and child health outcomes. The reduction of unintended pregnancies has been a Healthy People (HP) objective since its inception in 1980 as numerous studies have indicated that unintended births are at an elevated risk of adverse social, economic and health outcomes for the mother and the child (Mosher et al, 2012). Unintended births are associated with delayed prenatal care, smoking during pregnancy, not breastfeeding the baby, poorer health status during childhood and more problematic outcomes for the mother and the mother-child relationship (Mosher et al, 2012). In a 2001 study, 49% of pregnancies were unintended of which 44% resulted in births (Finer & Henshaw, 2006). According to the 2006-2010 National Survey of Family Growth (NSFG) conducted by the Centers for Disease Control and Prevention’s (CDC) National Center for Health Statistics, 37% of births in the United States were unintended at the time of conception. The rate of unintended pregnancies among women whose income was below the federal poverty line was three times that of women whose income was at least double the poverty line (Finer & Henshaw, 2006).
Unmarried women, black women and women with less education or income are still much more likely to experience unintended births compared with married, white, college-educated and high-income women (Mosher et al., 2012). More specifically, Mosher et al. found using the 2006-2010 National Survey of Family Growth that unintended births occur disproportionately among non-Hispanic black women, unmarried women and women with less income and education. For example, for the period 2006-2010, the proportion of all births that were reported by respondents as unintended among non-married non-Hispanic black women is 61.7% compared with 34.5% for ever married non-Hispanic black women. Graphs of national data about variations in intended or unintended birth status by ethnicity, education level, and birth order are shown below. The source is: Mosher WD, Jones J, Abma JC. Intended and unintended births in the United States: 1982–2010. National health statistics reports; no 55. Hyattsville, MD: National Center for Health Statistics. 2012

![Figure 1. Percentage of births to ever-married women that were unintended (unwanted or mistimed) at conception, total and by race of mother: United States, 1982 and 2006–2010](image)
Figure 3. Percentage of births that were intended at conception, by education of mother: United States, 2002 and 2006–2010

Figure 6. Timing of unintended births by birth order, for unmarried women: United States, 2006–2010
For never married non-Hispanic white women, 60.9% of births were unintended compared with 21.6% for ever married non-Hispanic white women. 55.4% of all births to never married Hispanic women were unintended compared to 33.9% of births to ever married Hispanic women. In regards to education, for the period 2006-2010, the proportion of all births that were unintended was 7% for college graduates compared with 35% for women who did not complete high school. When income was looked at during the same period, 36.3% of all births to women below 150% of the poverty level were unintended while 9.4% of all births to women at or above 400% of the poverty level were unintended (Mosher et al., 2012).

**Preconception Care**

Related to unintended pregnancy is preconception care. If a pregnancy is unintended, more than likely preconception care is non-existent, lacking in scope, or minimal at best. The CDC has developed ten recommendations to improve preconception health and health care. The recommendations focus on changes in knowledge, clinical practice, public health programs health care financing and data and research activities (Johnson et al., 2006). One recommendation is to increase awareness of the importance of preconception health behaviors and health care across the population spectrum (Johnson et al, 2006). To accomplish this, new social marketing and health promotion campaigns focusing on how to prepare for childbearing and parenting are needed as well as age appropriate health education programs in the schools.

Specifically CDC’s Goals and Recommendations to Improve Preconceptual Health are:

Four CDC Goals:

- **Goal 1.** Improve the knowledge and attitudes and behaviors of men and women related to preconception health.
- **Goal 2.** Assure that all women of childbearing age in the United States receive preconception care services (i.e., evidence-based risk screening, health promotion, and interventions) that will enable them to enter pregnancy in optimal health.
- **Goal 3.** Reduce risks indicated by a previous adverse pregnancy outcome through interventions during the interconception period, which can prevent or minimize health problems for a mother and her future children.
- **Goal 4.** Reduce the disparities in adverse pregnancy outcomes.

CDC Ten Recommendations:

- **Recommendation 1.** Individual Responsibility Across the Lifespan. Each woman, man, and couple should be encouraged to have a reproductive life plan.
- **Recommendation 2.** Consumer Awareness. Increase public awareness of the importance of preconception health behaviors and preconception care services by using information and tools appropriate across various ages; literacy, including health literacy; and cultural/linguistic contexts.
- **Recommendation 3.** Preventive Visits. As a part of primary care visits, provide risk assessment and educational and health promotion counseling to all women of childbearing age to reduce reproductive risks and improve pregnancy outcomes.
- **Recommendation 4.** Interventions for Identified Risks. Increase the proportion of women who receive interventions as follow-up to preconception risk screening, focusing on high priority interventions (i.e., those with evidence of effectiveness and greatest potential impact).
- **Recommendation 5.** Interconception Care. Use the interconception period to provide additional intensive interventions to women who have had a previous pregnancy that ended in an adverse outcome (i.e., infant death, fetal loss, birth defects, low birth weight, or preterm birth).
- **Recommendation 6.** Prepregnancy Checkup. Offer, as a component of maternity care, one prepregnancy visit for couples and persons planning pregnancy.
Recommendation 7. Health Insurance Coverage for Women with Low Incomes. Increase public and private health insurance coverage for women with low incomes to improve access to preventive women's health and preconception and interconception care.

Recommendation 8. Public Health Programs and Strategies. Integrate components of preconception health into existing local public health and related programs, including emphasis on interconception interventions for women with previous adverse outcomes.

Recommendation 9. Research. Increase the evidence base and promote the use of the evidence to improve preconception health.


(Full details about preconceptional health can be found at [http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5506a1.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5506a1.htm))

**Socio-Economic Determinants**

Socio-economic determinants such as race, ethnicity, education and income levels, environment and health insurance status influence maternal health as well as pregnancy outcomes and infant and child health. Racial and ethnic disparities exist in mortality and morbidity for mothers and children, particularly for African Americans (Tucker et al., 2007). These differences are likely the result of many factors including those listed. Racial and ethnic disparities in infant mortality exist, particularly for African American infants (Martin et al, 2011). Child health status varies by both race and ethnicity, as well as by family income (Larson and Halfon, 2010) and related factors, including educational attainment among household members and health insurance coverage (Larson et al., 2008). Overall, socio-demographic factors have a larger effect on poor educational outcomes than birth related factors (Resnick et al, 1999).

**Health Behaviors**

Health behaviors of the mother prior to pregnancy as well as during pregnancy affect birth outcomes as well as infant and child health, in some cases, far into the future. Prepregnancy health behaviors of the mother are influenced by a variety of environmental and social factors like access to health care and chronic stress as well as behaviors like nutrition, smoking, and alcohol consumption among others. Smoking by the mother during pregnancy is a known risk factor for psychological problems, including attention deficit and conduct problems in children (Gaysina et al., 2013). Consuming alcohol during pregnancy can harm the fetus and may result in long-term medical problems, like Fetal alcohol syndrome, in the child.

**Low-birth weight and pre-term births**

Pre-term, low birth weight (LBW, under about 5.5 lbs.) and very low birth weight (VLBW, under about 3.3 lbs.) babies are at an increase risk of infant mortality and morbidity, developmental delays and child maltreatment (Lee et al, 2009). The goal of Health People 2020 for pre-term births is 11.4%, 7.8% for LBW and 1.4% for VLBW. In 2011, 11.7% of all U.S. births were born premature (<37 weeks), of which 8.1% were LBW (<5.5 pounds) and 1.4% were VLBW (2 lbs. 3 oz.). Pregnant women who are young, black, poor, or a combination of those factors face a considerably higher risk of delivering LBW babies than other mothers (Lee et al, 2009). The affects of an infant being born pre mature, LBW or VLBW do not stop in infancy. At school age, VLBW children have poorer cognitive function and academic performance than normal-birth weight children. In addition, these problems persist into adolescence and are apparent even in children who have normal intelligence and no neurologic impairment (Hack et al, 2002).
Importance of Early Experiences and Environmental Influences

A growing body of scientific evidence shows that early influences—whether positive or negative—are critical to the development of children’s brains and their lifelong health. Critical aspects of brain architecture begin to be shaped by experience before and soon after birth. Many fundamental aspects of that architecture are established well before a child enters school (National Scientific Council on the Developing Child, 2007).

Beginning immediately after birth, a strong foundation for human well-being requires responsive environments and supportive relationships to build sturdy brain circuits, facilitate emerging capabilities and strengthen the roots of physical and mental health. The early years of life are a period of both great opportunity and great vulnerability for brain development because of the exceptionally strong influence of early experiences on brain architecture. Harvard University’s Center on the Developing Child found that, “An early, growth-promoting environment, with adequate nutrients, free of toxins and filled with social interactions with an attentive caregiver, prepares the architecture of the developing brain to function optimally in a healthy environment. Conversely, an adverse early environment, one that is inadequately supplied with nutrients, contains toxins, or is deprived of appropriate sensory, social, or emotional stimulation, results in faulty brain circuitry” (National Scientific Council on the Developing Child, 2007).

Furthermore, early experiences and the environments in which children develop in their earliest years can have lasting impact on later success in school and life. Barriers to children’s educational achievement start early and continue to grow without intervention. Differences in the size of children’s vocabulary first appear at 18 months of age, based on whether they were born into a family with high education and income or low education and income. By age 3, children with college-educated parents or primary caregivers had vocabularies 2 to 3 times larger than those whose parents had not completed high school. By the time these children reach school, they are already behind their peers unless they are engaged in a language-rich environment early in life (Hart & Risley, 1995). The more adversity a child faces, the greater the odds of a developmental delay. Risk factors such as poverty, caregiver mental illness, child maltreatment, single parent and low maternal education have a cumulative impact: maltreated children exposed to an additional six risk factors face a 90-100% likelihood of having one or more delays in their cognitive, language, or emotional development (National Scientific Council on the Developing Child, 2007). See the National Scientific Council on the Developing Child website for more reports and information related to the key importance of early childhood on later abilities and functioning of children. (http://developingchild.harvard.edu/activities/council/publications/)

Home Visiting as an Intervention

Numerous studies have looked at home visiting as an intervention to improve pregnancy and birth outcomes as well as provide education around infant/child development. Home visiting typically refers to a trained professional (but can also refer to paraprofessionals) who provides direct services to pregnant women and child(ren) in their home. The trained professional provides information about pregnancy, infant/child health, infant/child development skills and offers support and linkages to needed community resources (Bilukha et al., 2004). Home visiting has been shown to improve the quality of the home environment (Kendrick et al, 2000), prevention of child maltreatment (Bilukha, 2005) and decreases in harsh parenting, improved cognition and language development in young children, reduction in risk of low birth weight, improved weight-for-age in young children and reduction in child health problems (Peacock et al., 2013). What is not yet known and needs further researched is the frequency of home visits needed as well as the actual component or combination of components that makes home visiting successful.
To provide a framework for thinking about the variety of factors that influence a child’s developmental status at age five, a diagram is provided below. Obviously the type, magnitude and mechanism of a factor will have an influence on the degree to which a particular factor positively or negatively impacts a child’s developmental status at age five. These factors are familiar to health, education and social service professionals who may wish to suggest further refinements to this “web of factors” framework.

The challenge in relation to improving MCH outcomes is that each factor is important to the mental, physical, social, or emotional developmental status of a child at age five. Clearly a child’s readiness to benefit and learn from K-12 and higher education is affected by what happens in relation to these factors from birth thru age 5. A dramatic example is the effects on children who were exposed to the Russian nuclear reactor that exploded in 1986, but effects on optimal development can also be more subtle and less obvious.
THE WEB OF FACTOR INFLUENCING A CHILD’S DEVELOPMENT STATUS

Level of a Child’s Development at Age 5

**BIOLOGICAL**
- Genetics
- Fetal development
- Nutritional
- Adverse biological adequately exposed, pre & post birth
- Birth outcome (weight & birth trauma)
- Physical activity

**HEALTHCARE**
- Financial and geographic access to pediatric care
- Provision of high quality pediatric wellness and treatment services

**EMOTIONAL**
- Family support for development
- Family structure
- Family stability
- Opportunities for positive interactions

**SOCIAL**
- Nature and type of interaction with other children and adults
- Environment of child’s neighborhood regarding recreation, crime, etc.

**EDUCATION**
- Involvement in age appropriate activities that develop physical, mental and social skills of the child as well as knowledge
- Exposure to settings where education is provided and valued

**COMMUNITY ENVIRONMENT**
- Safe neighborhood
- Level of crime
- Air, water and housing quality (e.g. lead paint)

**ECONOMIC**
- Adequacy of financial resources to provide for basic needs, e.g. food, shelter, clothing
- Access to developmental enrichment activities
II. Description of Socio-Economic (SES) indicator variation between ZIP codes in Winnebago County

A map based overview of the variation in socio-economic (SES) indicators within the county will be useful in thinking about improving MCH outcomes. The point of the maps is not to identify specific ZIP codes, but rather to identify the general geographic area of the county where SES indicators show adverse disparity relative to other areas. There is variation with a ZIP code so not all people in a given ZIP code will have the same SES status. The general geographic area can be identified using the ZIP code map provided in Appendix A.

If the MCH indicators in the most disadvantaged areas are not improved the county will continue to show an adverse profile relative to other counties in the State of Illinois. MCH outcomes are related to SES as discussed in the literature review. Review of the various SES indicators signifies consistent patterns as to which geographic areas show disparities. It is well and generally understood that higher education generally leads to higher income, less unemployment, lower poverty, higher income, and higher home ownership levels.

Source of maps is the most recent federal data available provided at this web site http://www.healthlandscape.org a nonprofit organization funded in part by the American Academy of Family Practice and the Health Foundation of Greater Cincinnati.

The area to the west, south and southwest of downtown Rockford and in South Beloit generally shows substantially lower levels of completed education among adults than other areas.
Unemployment and Poverty Patterns for Children under 18 and Adults are in some ways similar. However north of downtown, adult poverty is likely due to seniors living below the poverty level since unemployment is lower but poverty is higher in that area.

Three other SES/demographic indicators are owner occupied housing, percent of residents under age 18, and population under age 5 which are shown below. Note that some of the downtown areas with the highest percent of children ages 18 and less and lower rates of home ownership are also the same areas with the highest disparities related to completed education and poverty in prior maps.
III. Description of the variation in the pattern of MCH health status indicators by ZIP code with comparisons to the state of Illinois

Disparities exist in MCH outcome indicators in Winnebago County based on information available from birth certificates and hospitalization data.

Infant mortality rates during the first year of life are consistently higher for African American infants in Winnebago County as indicated in the graph below. (Data is from the wonder.cdc.gov website.)

Likewise low birth weight rates (birth weight under 5.5 lbs) are also consistently higher for African American infants in both Winnebago County and Illinois as shown below. (Data is from the wonder.cdc.gov website.)

Low birth weight is less than 5.5 lbs.
Looking at low birth weight (LBW) rates by Hispanic Ethnicity from 2007 to 2010, LBW rates in Winnebago County were only slightly higher among Mexican infants than non-Hispanic White infants. LBW rates were markedly higher among Non-Hispanic Blacks in both Winnebago County and the State of Illinois than for other ethnic groups. Puerto Rican infant LBW rates were slightly higher in Winnebago County than the state overall and were markedly higher than Mexican infant LBW rates in Winnebago County (10.3 versus 8.1 per 100 births, respectively).

Low birth weight is less than 5.5 lbs. 1

Mothers who have not completed high school have the highest LWB rates in Winnebago County and the State of Illinois. As expected, LBW rates decrease as mothers’ level of post high school education increases. As shown below using data from births from 1999-2009 among mothers with the lowest level of completed education have the highest LBW rate. The LBW rate for mothers not completing high school or equivalent is about 33% higher than for mothers who completed college or higher level of education.

Low birth weight is less than 5.5 lbs. 1
If rates are further stratified by completed education and race, clear patterns are shown related to greater risk of low birth weight births among mothers with less education especially among black mothers as coded on the birth certificate. Asian % other than college educated are based on low number of births and are not stable rates. Even among college educated black women LBW rates are about 3% higher than college educated white women. This difference is much more substantial in other education levels with black LBW rates being about twice or more the white LBW rate.

![Graph showing LBW rates by education and race, Winnebago County Resident Births, 2005-2009]
There is large variation in the percent of births that are LBW or very low birth weight (VLBW), between mothers residing in the City of Rockford versus the rest of the county from 1999-2009 as shown below with the LBW percent being about 35% higher in the city than the rest of the county. The percent of births VLBW is about 66% higher in the city than the rest of the county. There were 31,071 births in the city and 13,109 births outside the city during the time period thus the city has a disproportionate effect on the overall Winnebago County rates.

Low birth weight is less than 5.5 lbs.

Very low birth weight is less than 3.3 lbs.
There is major variation in the percent of births that are LBW based on ZIP code of mother’s residence from 1999-2009. There are generally 200 or more births for any given ZIP code so rates are not subject to major chance variation that could occur over a shorter time period. Mothers in ZIP codes 61101 and 61102 have LBW rates that are about twice the LBW rate of mothers residing in ZIP codes on the eastern side of the county where residents’ SES indicators reveal a higher level of completed education, higher median income and lower poverty rates.

A different view of LBW patterns by ZIP code is provided below using the metric average rate of LBW per 1,000 women ages 15-44 with 1999-2009 data. The ZIP codes with higher LBW rates per 100 live births generally show elevated rates using this alternative LBW metric. In general the patterns are similar with higher SES ZIP codes showing substantially lower LBW rates than lower SES ZIP codes and the overall county rate.
Although the absolute percent is low (ranging from 2.6% to 0.0%), there is considerable variation in the percent of births that are VLBW based on ZIP code of mother’s residence among births from 1999-2009. The number of births is generally 200 or more for a given ZIP code so rates are not subject to major chance variation that could occur over a shorter time period. Mothers in ZIP codes 61101, 61179, and 61102 have VLBW rates that are about 2.5 times the LBW rate of mothers residing in ZIP codes on the eastern side of the county that have higher SES indicators among residents related to completed education and poverty rates. For example, the VLBW rate in ZIP code 61101 is a little above 2.5% versus about 1.0% in ZIP codes with higher SES indicators.

Very Low birth weight is less than 3.3 lbs.
Another indicator of births status is the length of hospital stay after birth. The graph below indicates that many of the ZIP codes with high VLBW rates also had a higher percentage of infants ages 0 to 10 days who had a hospital length of stay of 30 days or more. (ZIP code 61114 is an exception). This graph was created using a hospital admission file for all admissions in the state so this includes mothers who were Winnebago County residents that gave birth outside the county or whose infants were transported outside the county to be admitted between ages 0 to 10 days of age. The number of admissions ranged from 258 to 2,056 in the ZIP codes so percentages are stable.
The percent of births to mothers ages 20-24) decreased slightly in 2009 as shown in the graph below. During these five years the percent of births to teen mothers has remained about the same.

There is marked variation in fertility rates (births per 1,000 women of childbearing age) by age and race of the mother as shown below (data from IDPH). Black women under the age 25 showed markedly higher fertility rates than women of other races under the age of 25. The fertility rates for white and Asian women are highest for ages 25-29 and then decline. Fertility rates for white women are highest between ages 20 to 34 and then decline.

Notes: Hispanic can be of any race.

Note: Fertility rates are defined as live births per 1,000 women of childbearing ages 15 to 44 in a population. The fertility rate is less affected by the age distribution of the population than the birth rate which is simply births per 1,000 population.
The national trend in the decline of births to teens is shown in the graph below from a recent federal publication (red line). Declines are observed nationally in other age groups also: 20-24 years and 25-29 years.

**Figure 3. Birth rates, by selected age of mother: United States, final 1990-2011 and preliminary 2012**

- 15-19 years
- 20-24 years
- 25-29 years
- 35-39 years
- 30-34 years
- 40-44 years

NOTE - Due to software limitation, this graph could not be plotted on a log scale. The published version of this graph will be plotted on a log scale.

NOTES: Rates are plotted on a logarithmic scale.

As the bar graph below indicates, there is considerable variation by ZIP code in the age at which mothers have births. The downtown ZIP codes show (the four ZIP codes to the bottom left side of graph below) the highest percent of births to mothers under age 20 and the lowest percent of births to mothers ages 30 or more. ZIP codes 61114 and 61073 have the highest percentage of mothers ages 35+ relative to other ZIP codes in the county. Why mothers in 61114 would have a higher percent of long stays in the NICU is only partially explained by a higher percentage of births occurring among mothers age 35 and older. +.

Mothers’ Age Category by ZIP Code, Winnebago County, 2006-2010
Although births among teens have declined in the county and in the nation within recent years there are still ZIP codes within Winnebago County where progress is needed, especially among teens less than 17 since it is important to at least finish high school before taking on the responsibilities of parenting. Some mothers may have more than one child before age 20. Data was not available that would have allowed us to look at the issue of more than one birth before age 20 by ZIP code.

The graph below is sorted from high to low related to percent of births to mothers ages 16 or less. Looking at births under age 20 in the county, the Pecatonica ZIP code 61063 has a substantially higher percent of births to mothers ages 16 or less, 30.4%, n = 23 versus 23.6% in the South Beloit ZIP code 61080, n = 63. The Rockton ZIP code, 61072 has 22.2% of teen births to mothers ages 16 or less.
IV. **Review of the structure and types of MCH services available in Winnebago County based on a community inventory.** A complete listing of all identified providers is included in Appendix B.

We sought to identify all obstetric and pediatric providers in Winnebago County, their location, number of providers by type, and information about acceptance of Medicaid as well as other practice characteristics.

**Winnebago Clinics offering Obstetrical Services or Primacy Care Pediatric Services, June 2013 by Type of Provider (Details in Appendix B)**

<table>
<thead>
<tr>
<th>Clinic Services</th>
<th># FTE Family Medicine Physicians</th>
<th># FTE Pediatricians</th>
<th># FTE Obstetricians</th>
<th># FTE NPs or Midwives</th>
<th># FTE Physician Assistants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinics offering both pediatrics and obstetric services</td>
<td>17.5</td>
<td>20</td>
<td>12.5</td>
<td>18</td>
<td>7</td>
</tr>
<tr>
<td>Clinics offering pediatrics only</td>
<td>21</td>
<td>16</td>
<td>0</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Clinics offering obstetrics only</td>
<td>4</td>
<td>0</td>
<td>32</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>44.5</td>
<td>41</td>
<td>45.5</td>
<td>37</td>
<td>10</td>
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</table>

Notes: There are also 6 family medicine physicians who provide urgent care pediatric services (not full scope pediatric primary care) at 4 urgent/convenient care locations. Also 14 pediatric sub specialists provide specialized types of pediatric services in the county.
Obstetric and pediatric care provider’s office locations are shown in the maps below.

The pediatric services’ location map includes acute care (urgent care pediatric providers) as well as primary care pediatric providers. Most pediatric providers are located in the eastern and northern areas of the county.
The obstetric service providers’ locations map is shown below. Almost all obstetric providers are located east of the Rock River in the county.

V. Discussion of gaps and issues related to MCH services identified from discussions with key informant MCH medical and social service providers

Conversations with leadership level pediatric and obstetric providers and Crusader Community Health staff did not indicate any major issues with the supply and/or access to pediatric or obstetric providers with the exception of the following issues:

1) Obstetric physicians are very hesitant to accept new Ob patients after 26 weeks gestation due to legal issues related to liability of birth outcomes. This can create issues for a pregnant woman initiating care after 26 weeks. Some Ob providers/clinics will not accept new patients unless they are referred by a primary care provider within their health system. Further investigation by project staff indicated that if a woman was identified as having Medicaid for insurance, primary care providers were not willing to take her as a new patient. New patients with Medicaid were referred to Crusader Community Health to obtain primary care. Crusader Community Health is viewed as a partner of the health system since all Crusader providers who do deliveries have admitting privileges only at that particular health system.
2) It is well known that Illinois Medicaid has experienced major issues in funding needed to make timely payments to providers. Payments are often delayed. In addition, the payment rates for Medicaid are not attractive relative to other private insurance coverage. This leads to very careful assessment by providers as to the authenticity and verification of any patient seeking to obtain Ob care that is covered by Medicaid in particular. Some providers require approval by an administrator or medical director before a new patient covered by Medicaid is accepted. One health system repeatedly told a project staff member who inquired about obstetric care that if she was covered by Medicaid she would be referred to one of the health systems primary care providers. When the staff member later inquired about becoming a new primary care patient at the health system if she was covered by Medicaid, she was told no openings were available for new primary care patients. She was then referred to Crusader Community Health for primary and obstetric care.

The payment issue can affect privately insured patients as well. While waiting to talk with a physician, the lead author was in the waiting group of an Ob office for 30 minutes and heard a steady stream of calls to the secretary about making appointments. One of the first questions always asked was the patient’s payment mechanism/insurance. The discussion then continued about whether the patient’s insurance would cover the visit as an in-network visit. The patient was frequently told to check with their insurance to find out what physicians in the Ob group were in-network providers for the patient’s insurance. These issues are common in the US health care system, but women may not be prepared for the complexity of navigating and finding an in-network Ob provider of their choice.

3) Project staff met with two home visitors to better learn about their work and the issues they encounter when visiting women in their homes. Visits last from an hour to an hour and half with frequency of visits varying by agency from once a week to every other week. The home visitors indicated that their respective client face a variety of life challenges. In a non-threatening approach, the home visitors seek to have their clients carefully consider choices they make related to relationships, use of money/resources, parenting, and career decisions. Some of their clients are isolated from other adult interactions and very much welcome the chance to talk with someone about their life issues. Many of the women face a variety of factors creating stress and need assistance thinking about choices they make including use of family planning and readiness to have additional children. Some women are monitored by others in the family during the visit which can create difficulty for them to talk freely with the home visitor; however, without the home visits in some situations they would have little contact with an adult outside of their family unit. The capacity of home visiting agencies is limited relative to the number of women who would benefit. Current case loads and wait list number are shown below.
4) Discussion with the administrator for the county department of social services indicates there are a variety of social service programs in place to support women who are low income and become pregnant. Nationally coverage under regular Medicaid (eligibility 100% of the federal poverty level) will change January 1, 2014 and all adults ages 19 and over who meet eligibility requirements can apply to be covered by Medicaid. In Illinois expanded Medicaid will be offered to adults and families who are up to 133% of the federal poverty level. To receive on-going coverage a person must be a documented US Citizen. There is a program for pregnant undocumented women to be covered for pregnancy care thru 6 days post-partum. If a child has a deprivation situation (absent, disabled, or deceased parents) a relative of the child can apply for Medicaid coverage for the child.

In the past, there were limited Medicaid services offered to women over 18. That will change on January 1, 2014 with the implementation of the Affordable Care Act (ACA). Prior to January 1, 2014, if a woman was not pregnant or did not have a child and was over the age of 18, she could obtain limited women’s health services through an Illinois social services program referred to as “pink” care which included family planning services. Not all women knew about “pink” care. This has been a factor in lack of access to family planning services. Once a woman had a documented pregnancy, she became eligible for Medicaid. It will be important for low income teens and their parents to be aware that they can apply for this expanded Medicaid coverage even if they are not pregnant. This will allow them to obtain needed health services including contraceptives.

Additional support for low income women in addition to Medicaid and the supplemental nutrition assistance program (SNAP) can be provided by the Temporary Assistance for Needy Families (TANF) which is a federal block grant program to help move recipients into work and turn welfare into a program of temporary assistance. Under the welfare reform legislation of 1996, TANF replaced the welfare programs known as Aid to Families with Dependent Children (AFDC) program, the Job Opportunities and Basic Skills Training (JOBS) program, and the Emergency Assistance (EA) program. TANF requires recipients to seek work (with few exceptions), provides case worker support, day care and transportation assistance, and is only offered for a maximum of 60 months if the

<table>
<thead>
<tr>
<th>MCH Home Visiting Capacity and Demand July 2013</th>
<th>MIECHV #</th>
<th>Non-MIECHV clients #</th>
<th>Total Possible Clients (Capacity) #</th>
<th>Wait List #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Visit Agency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easter Seals</td>
<td>18</td>
<td>18</td>
<td>36</td>
<td>0</td>
</tr>
<tr>
<td>LaVoz</td>
<td>12</td>
<td>12</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>City of Rockford</td>
<td>22</td>
<td>84</td>
<td>106</td>
<td>40</td>
</tr>
<tr>
<td>Rockford Public Schools</td>
<td>23</td>
<td>186</td>
<td>209</td>
<td>40</td>
</tr>
<tr>
<td>Totals</td>
<td>75</td>
<td>300</td>
<td>375</td>
<td>80</td>
</tr>
</tbody>
</table>
recipient participates as required by the program. The four purposes of TANF are to: 1) assist needy families so that children can be cared for in their own homes; 2) reduce the dependency of needy parents by promoting job preparation, work and marriage; 3) prevent out-of-wedlock pregnancies; and 4) encourage the formation and maintenance of two-parent families.

5) Pediatric issues were also discussed during this assessment and the following points were made regarding provider and parenting issues.

a. The addition of several pediatric subspecialties would be helpful in providing care to children in the county. Specifically pediatric neurology, pulmonology, ear, nose and throat (ENT), and dermatology are needed. Access to all types of pediatric care for children covered by Medicaid could be improved.

b. Child abuse prevention and treatment is an issue that needs more attention due how common child abuse cases are within the county. Details are provided in Appendix C.

c. Education of parents about proper child nutrition could be improved and stronger efforts made to avoid childhood obesity. This could include how to cook and avoid use of processed foods. Rockford Health System (RHS) is working on developing a weight management program for children.

d. The percent of children being breast fed has increased and there is an initiative in the RHS neonatal intensive care unit to encourage mothers to breastfeed. Pediatricians should encourage all mothers to breastfeed, but also caution against the child sleeping with the mother. Some settings are still providing free formula to mothers following delivery which can discourage mothers from breastfeeding.

e. Encourage safety as children engage in exercise activities.

f. There is a need for steps to be taken to improve parenting education in the county.

6) Issues identified related to maternal knowledge and behavior that could influence outcomes:

a. Knowledge of basic biology – Several providers mentioned women arriving for their appointments confused about their symptoms, not aware that the symptoms they were experiencing may indicate pregnancy. There is a wide variation in the school health curriculums in regards to biology. If students do not receive this knowledge during their K-12 years, they can arrive in adulthood uninformed or misinformed about the basics of reproductive biology.

b. Often there is confusion about when conception is most likely to occur during a women’s menstrual cycle leading women to make incorrect judgments about contraception. This may result in an unintended/unplanned pregnancy. As mentioned in the literature, a birth being intended is related to an increased chance of a positive birth outcome and supportive home environment for the child.
c. Access to and/or use of family planning services could be improved. Although Crusader Community Health clinics and the Winnebago County Health Department are major providers of these services, women could do more to carefully consider the decision to become pregnant, including discussions with partners and making a deliberate decision to become parents. If women were informed during routine primary care about the importance of positive preconception health and the benefits that can occur related to birth and infant outcomes this could also be of benefit. The mother’s health status at the time of pregnancy and events during the first trimester can have major effects on birth outcome.

d. Timing of early prenatal care could be improved. Most providers indicated that their goal was to see new Ob patients within two weeks of the patient seeking an initial appointment. Most providers indicated that unless payment issues were an issue they could schedule new Ob patients within two weeks. Of course this depends on the woman realizing she may be pregnant, the importance of early and regular prenatal care, positive maternal health behaviors, AND seeking to initiate prenatal care. With regard to all these aspects, providers indicated that more needed to be done to get women to seek and receive prenatal care during the first trimester of pregnancy.

e. One group of providers offered an explanation for the pattern of early and repeat pregnancies among low income/low educated mothers. Many mothers were reported to have low self esteem and self image. They lacked an understanding of how their choices influenced their future life. Because the focus is on the woman during pregnancy, pregnancy is generally a positive experience. Once the baby is born, the focus shifts to the infant. To re-establish focus on them, some women make choices that lead to another pregnancy.

7) A variety of ideas were suggested by providers as to how obstetric related services could be improved in ways that might be helpful to improving birth outcomes:

- A comprehensive grade appropriate health education curriculum conducted in the schools by knowledgeable health professionals is needed. Young people need the facts about how their bodies function and the behaviors they should engage in to live a healthy life. This will aid in preparing young people to function as responsible adults with regard to knowledge, attitudes, and behaviors about relationships and the responsibilities of becoming a parent. Providers report regular contact with teens that are uninformed on MCH related topics and indicate this is impacting MCH outcomes. Teens need to be better informed about how and where they can obtain birth control without parental consent. One suggestion is employing a “Life choices” game that could be incorporated into the school curriculums.

- Improving the systems of care to provide a more comprehensive broad scope of services that impact MCH outcomes in the community. Providers regularly see pregnant women who are facing issues well beyond simply accessing medical services related to pregnancy. It was suggested that a more comprehensive approach would involve:* Education of potential mothers about the importance of preconception health and being ready to be a parent both physically, mentally and economically as a part of primary care to women of childbearing age (which starts as young as age 13 one provider mentioned).* Improved access to and proper use of contraception was mentioned as a major issue.
o An effort should be made to redefine what is normal among some at-risk groups in the county who start child bearing too early and have children whose birth spacing is less than optimal for the health of the mother and child.

o Women who are older should be made aware of the risks of delaying childbearing. Preeclampsia is more likely among older mothers (ages 35+) creating a greater risk of a premature birth occurring.

o Providing educational classes to patients as a part of prenatal care that addresses issues related to having a health pregnancy. Appropriate nutritional intake and appropriate weight gain were mentioned as issues of confusion and topics for education that were lacking even among more affluent maternity patients. Topics related to infant health issues as well as infant/child behavior were also mentioned. The “Centering Pregnancy” education program was mentioned as an approach others would like to see expanded. It is currently offered at Rockford Memorial Hospital reference here in a Rockford Register Star article. http://www.rrstar.com/health/x380040247/A-different-way-to-do-prenatal-care.

o Providing post-partum education to mothers including review of contraceptive options to help women make intended choices regarding any next pregnancy.

o Provide interprofessional clinics where a wide range of services can be provided in an integrated way (especially important for high risk moms). This would involve obstetricians, fetal and neonatal medicine specialists as consultants, nurse practioners, access to psychologist/psychiatrists, dietitians, social workers and nurses plus perhaps others. The purpose of this integrated clinic would be to offer services that deal more broadly with the range of issues maternity patients may be experiencing. Education, referrals to resources and health care services could be offered more comprehensively with the ultimate goal of improving MCH outcomes.

o Ensuring all prenatal patients and their families have been immunized against pertussis due to the drop in the level of TDAP immunization status in the community.

o There is a need to inform women (and perhaps providers who influence women’s thinking) in the community that induction of labor should be carefully considered. In accordance with the American Congress of Obstetricians and Gynecologists (ACOG) guidelines, induction should not be started before 39 weeks of gestation to improve birth outcomes unless there are very special medical reasons (not simply patient preference). The corollary point to be made to the community is that a woman is not post date for delivery until after 42 weeks not 40 weeks as many women think.

o One physician noted a shortage of mental health and substance abuse treatment options for pregnant patients, especially if they are covered by Medicaid.

o Low income women are in need of education about basic money management and wise food shopping choices.
Creating venues for at-risk youth to hear from other teens about the choices they made i.e. a low income teen who didn’t have a child and is pursuing a college education, a teen who had one child but has chosen not to have more children and is pursuing post high school education, and teen moms who are not in school and have one or two children. The idea would be to have them tell their stories and talk about making choices. This was suggested as a way to reduce risk taking behaviors associated with teen pregnancy. Teens in high school that are at risk could benefit from hearing such a discussion.

The need for babysitting while moms participate in various types of educational and peer interaction sessions was mentioned. It is also difficult for the provider to effectively communicate with the individual patient if she has other children present.

Providers indicated they would be willing to work with others in the community related to resolving care delivery and community education issues. It was mentioned there is need for an organized community wide approach to educating parents and potential parents about MCH topics.

VI. Summary of report conducted by Dr. Dalstom exploring women’s experiences and perceptions of their medical and social experiences as related to pregnancy and child rearing. Full report is available in Appendix D.

Dr, Dalstrom conducted a twelve month project exploring whether differences exist in the medical and social experiences between African-American, Hispanic and Caucasian women who have LBW/premature children and those who do not. This was accomplished in three ways:

1) semi-structured interviews and focus groups with a select group of health care providers and social service organizations;
2) semi structured interviews with postpartum participants of a MCH program offered through the Winnebago County Health Department and;
3) longitudinal case studies of pregnant African-American women.

Findings from Interviews with Healthcare Providers and Social Service Organizations

Nine organizations (with multiple participants) participated in the semi-structured interviews or focus groups including Catholic Charities, Crusader Community Health Clinic, Easter Seals, La Voz Latina, MELD, Swedish American Hospital, Head Start, Rockford Early Childhood Prevention Program and Youth Services Network. Respondents identified medical compliance, medical beliefs, funding, communication and educational level as factors that impacted their organization’s ability to provide prenatal care to women in Winnebago County.
When asked what they felt impacted a women’s usage of prenatal services, most frequently identified were that women are in a state of crisis, have limited social support, have housing problems, are given conflicting information, have limited transportation, are in an tenuous emotional state, rely upon poor intergenerational parenting knowledge, they are not empowered and have limited access to childcare.

Most common problems identified by home visitors from the representative organizations listed above are:

- neighborhood safety;
- drug use in home;
- domestic violence;
- trust and;
- control the woman has over the household.

Home visitors focused largely on support, referrals and child development information when meeting with their clients.

**Findings from Interviews with Low Income Pregnant Women**

Fourteen pregnant African-American women were interviewed for the project of which seven were considered high-risk. All 14 women were enrolled in WIC and had the medical card. Ages ranged from 19 to 38 and with a range of zero to six previous pregnancies. Of the 14 participants, two of the pregnancies were planned. Three interviews were completed with each participant. The first interview was conducted within the first or second trimester, the second during the third trimester and the third interview occurred with one to two months after giving birth. Women were interviewed in either their home or at the health department. Participants were asked about their experiences seeking and using prenatal care, what medical advice they did or did not follow and reasons for not following medical advice or making appointments.
In response to being asked about their experiences seeking and using prenatal care, women talked about the amount of time they spend seeking care, the amount and type of pregnancy care information received, access to care, the relationships with their medical providers, transportation and using the medical card.

When asked what medical advice they did not follow or had difficulty following, women mentioned nutrition, exercise and drugs/alcohol.

### Table 2: Adverse Health Behaviors (n=14)

<table>
<thead>
<tr>
<th>Finding from Interviews with Healthcare Providers and Social Service Organizations</th>
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<tr>
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<tr>
<td>Alcohol Consumption</td>
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<tr>
<td>Poor Nutrition</td>
</tr>
<tr>
<td>Lack of Exercise</td>
</tr>
<tr>
<td>Exposure to Cigarette Smoke</td>
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<tr>
<td>Smoking Marijuana</td>
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As for reasons why participants did not follow medical advice or make scheduled appointments the most common reasons cited were stress, lack of time and lack of social support.

Findings about the Pregnancy from Interviews with Low Income Women

In total, 29 women were interviewed (14 longitudinal and 15 postpartum) for a total of 43 interviews. This section will explore some of the differences and similarities between the groups of women. It will also discuss how women’s experiences impact the type of care that they receive.

**Impacting the Pregnancy Experience**

When asked what factors influenced their usage of prenatal health care services and their overall pregnancy experience women in both groups focused on the quality of social relationships, stress, and the delivery of medical information as the most important categories that impacted prenatal care.
Table 1: Pregnant African-Americans (N=14)

Table 2: Postpartum Interviews (N=15)

For additional information on the themes, see Chapter VI.
Social Support

21 of the women mentioned that social support was pivotal for a healthy pregnancy. However, few of them had consistent support throughout the pregnancy. The result was that at certain times during the pregnancy women, especially the beginning, were very and emotionally vulnerable. Many mentioned that they were, “doing it alone,” withdrawing from their friends, and dealing with the stress within the family for becoming pregnant. In most situations the father of the baby was largely unsupportive.

Stress

The second most commonly cited problem that women expressed was stress. The type of stress varied between women but overall it centered on financial and the accessing care, family issues, and social support. The stress that women experienced impacted their ability to focus on the pregnancy and take care of themselves. This resulted in missed appointments, not eating appropriately, and not being able to focus during medical appointments.

Patient-Provider Relationships and Delivery of Information

Across all categories of women, having a positive relationship with their medical provider and having access to information was seen as critical to having a good pregnancy. For many women the quality of the relationship impacted their desire to receive medical care and their ability to get the information they receive. As one women explained,

I felt uncomfortable going to the doctor a couple of times because it’s like they – it is timed and when you go to the doctor, it shouldn’t be timed. If I’m coming in here and I’m paying you my money or if I’m not paying you my money, I still need help and I want to understand what’s going on. Once I leave here, I want to be reassured that I know what’s going on, but sometimes you just don’t get that reassurance.

Since she felt rushed out of the office because her provider was too busy, she complained that they often substitute talking with patients with brochures.

Yes. They always want to give you a brochure to read up on. I don’t want a brochure. You’re the doctor. You know what’s going on. I would like you to explain it to me before I leave here. I don’t leave here with any questions because I already know what’s going on or what’s to be expected and stuff.

Negative Experiences with the Medical System

Postpartum women and pregnant women were also asked to reflect on their experience and indicate what if anything negatively impacted their pregnancy.
These experiences can be grouped into two general categories, structural and social. Structural problems that women faced were limited access to preconception care, number of medical providers who took the medical card, time spent waiting in doctors’ offices, and being able to use the medical card. The social problems that women faced centered around their interactions with their medical provider, encompassed their relationship with their provider, and also how their medical provider disseminates medical information. Problems arose when the women perceived that their medical providers did not have good patient-provider communication, provide continuous care throughout the pregnancy, treat them with respect, and were not compassionate for their situation.

Participants’ Suggestions for Improving the Medical Experience

At the end of the interviews, women were asked what changes to the medical system would make their pregnancy experience better. The follow is a list of their suggestions.

- Have snacks in waiting room.
- Allow men to attend pregnancy classes.
- Make the medical card easier to get and use.
- Provide a list of medical providers who take the medical card.
Spend more time with women and explain the medical procedures that are being performed.
Do not assume that having a previous pregnancy means that the women understand what is going on.
Put a public aid office in the WCHD so it is easier to access.
Make it easier to switch doctors if the patient does not like them.
Update the pregnancy materials given at the WCHD and Crusader Health Clinic. Put the information online.
Improve transportation options and reduce the number of places that women have to travel to.
Put more pregnancy resources (information, medical services) in west Rockford.
Increase the number of doulas and make them available to women of all ages.

Suggestions to Improve Prenatal Care

Based upon the data collected we suggest that the following six interventions could be implemented to improve birth outcomes and experiences.

1. **Standardize sex education courses and evaluate health literacy to assess and improve women’s knowledge of preconception, prenatal, and postpartum medical care.** Currently the sexual education classes in Winnebago County are inconsistent and consequently the degree of knowledge can vary drastically between women. As previously mentioned some women do not know how to use contraceptives, what the signs of pregnancy are and what constitutes a “healthy” pregnancy. Improving health literacy is central to improving prenatal care and has been linked to the use of preventative services (Gazmararian and Baker 2002), reducing shame (Parikh et al. 1996), and lowering health care costs.

2. **Improve information pertaining to preconception and maternal health.** Women complained that they were given too much information about pregnancy and not enough information about what to do after they found out they were pregnant at the WCHD or Crusader Health Clinic. To address this issue women could be provided with a checklist of what to do and what forms they need. In addition, the amount of pregnancy information (pamphlets) could be reduced and additional information could be put online or at the library so women could access information before and after conception.

3. **Advertise social services and promote use to stabilize women’s crisis events.** There is a robust literature on the role that stress, poverty, and lack of social support play on both the usage of medical care and health outcomes (Pike 2013; Rosenthal and Lubel 2011). However, only a few of the women in the study were aware of the resources available in the community that help women deal with these issues. Advertising services like 211 and the types of support available might help women stabilize themselves during crisis moments, which would enable them to focus more on their pregnancy.

4. **Make information on social services and prenatal care available online.** Currently many women are going online to get information about their pregnancy. However, they are going to a wide variety of sources with questionable information. Providing a list of approved websites or developing one around the specific needs of Winnebago County will assist women in getting quality information.
5. **Improve the patient-provider relationship through cultural awareness.** In the literature and within the study, African-American women emphasized that they wanted their medical providers to have good patient-provider communication, provide continuous care throughout the pregnancy, treat them with respect, and be compassionate for their situation (Lori et al. 2011). Emphasizing these qualities in the medical encounter could improve patient-provider interactions and possibly birth outcomes.

6. **Educate family members, not just pregnant women.** Data from this study reinforce existing literature that has found that African-American women rely heavily upon family members for medical information and that family plays a central role in influencing women to seek prenatal care (Winston and Oths 2000). Therefore focusing educational outreach beyond just the biological father and mother could positively impact the information received and the use of prenatal services.
VII. **Description of the types of social service agencies providing MCH related services in the county. A complete listing of all identified agencies is included in Appendix E.**

There are an abundance of social service agencies in Winnebago County that provide services supportive of improving MCH outcomes among residents in need of assistance. Although capacity related to providing needed services was not assessed as a part of this project, given the number and geographic distribution of agencies as shown on the map below it would appear that social service resources are adequate and the major challenge a resident may encounter is finding the appropriate agency(ies) that would best assist with a given issue. The social service agencies providing MCH related assistance are found throughout Rockford with a focus on the central and western part of Rockford as shown below.

![Map of social service agencies](image)

The Community Inventory (attached) identifies agencies and services in Winnebago and Boone Counties aligned with five benchmark areas of Maternal Infant Early Childhood Home Visiting (MIECHV) initiative.
MCH Provided 1.5 billion to states over five years to establish home visiting programs for at-risk pregnant women and children from birth to age 5, and serves as a partnership between federal, state, local government and community-based organizations. MIECHV is designed to use evidence-based home visitation as a strategy to: 1) strengthen and improve the programs and activities for the target populations, 2) improve coordination of services for at-risk communities and 3) identify and provide comprehensive services to improve outcomes for families who reside in at-risk communities. Benchmarks of MIECHV are central and address the home visiting service-delivery framework for five components of the Early Childhood Comprehensive System, such as access to healthcare and medical homes; social-emotional development/mental health; early care and education; parenting education, and family support. The Community Inventory charts non-profit, social service agencies aligned with the following MIECHV benchmarks (in bold) targeting birth to age 5. The number of agencies offering services related to each category of service is shown in parentheses below.

Number of Agencies Providing various types of Social Services:

<table>
<thead>
<tr>
<th></th>
<th>Maternal and Newborn Health</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Prevention of Child Abuse and Neglect</td>
<td>106</td>
</tr>
<tr>
<td>3</td>
<td>Improved School Readiness and Achievement</td>
<td>83</td>
</tr>
<tr>
<td>4</td>
<td>Reduction in Crime or Domestic Violence</td>
<td>92</td>
</tr>
<tr>
<td>5</td>
<td>Improvements in Family; Economic Self-sufficiency</td>
<td>77</td>
</tr>
<tr>
<td>6</td>
<td>Improvements in Family; Economic Self-sufficiency</td>
<td>310</td>
</tr>
<tr>
<td>(For purposes of local information, review, and data collections, three additional benchmarks were added)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Support agencies for at-risk children</td>
<td>133</td>
</tr>
<tr>
<td>7</td>
<td>Preconception Healthcare</td>
<td>45</td>
</tr>
<tr>
<td>8</td>
<td>Support agencies for Adolescent/Tens</td>
<td>121</td>
</tr>
</tbody>
</table>

Assessment Tools: The Community Health Toolkit (communityhealth.ku.edu) suggests a number of resources to accomplish the goal of assessments.

Resources used for the Community Inventory/assessment was the local United Way of Rock River Valley Family Resource Guide (2011-2012), and the recently updated website of Cap4Kids where nearly 300 entries of organizational resources/websites are listed. Agency information in each guide/resource was issued on a voluntary basis. The United Way 211 website was used as a secondary resource, as well as the Winnebago and Boone County Resource Guides from the Rockford Health Council. Agencies in each directory were charted individually, then combined to remove duplicate listings. Categories of each directory were then merged to assimilate like agencies and services. This resulted in approximately 20 categories under each benchmark. Agencies listed are a linked to the actual benchmark and the service category listing. Agencies identified are not inclusive of all services rendered in that particular agency due to the numerous services available, but intended to list what the agency is most utilized for, or most widely known for, in the community. Agencies not identified did not target the MIECHV population and/or benchmarks, were located outside the Boone /Winnebago geographical service areas, or was not offered as a resource/information in the agency guides.
VIII. Overview of the health curriculums being provided by the public schools in the county and unique aspects regarding the health curriculums of particular school districts.

The 2012 Illinois School Code References in Comprehensive School Health Education and Physical Education does not require sex education. It is optional. However sexual abuse and assault awareness is mandated and to the lead author seems inconsistent (full state code provided in Appendix F):

- Sex Education Optional for grades K-12
- Sexual Abuse and Assault Awareness Mandated in grades PreK-12

Successful completion of a high school health class is required for graduation. This may be the only course students have during their life about health topics including reproductive health and parenting. It is important that the course cover key topics that relate to maternal and child health. The school curriculum content related to MCH topics is approved by the local school board. There are state goals regarding the content of what is taught at each grade level as shown in Appendix F. In most of the curriculums, there are topics related to relationship issues and human biology. A review of the exact lesson plans related to the reproductive system and pregnancy would need to be assessed to understand what level of detail is covered related to the structure and function of the reproductive system, avoiding unintended pregnancy, maternal behavior that promotes health of the mother and infant if a woman is pregnant, and basic concepts related to child care and parenting.

There may be variation between teachers in a school related to how and what is taught in health classes and that aspect should also be examined at the school level. How are young people prepared for life if they don’t have these basic MCH topics as a part of their thinking? “Too many of our children start school unready to meet the challenges of learning, and are adversely influenced by…drug use and alcohol abuse, random violence, adolescent pregnancy, AIDS and the rest” (US Department of Education, America 2000 and Department of Education, 1991)

The way the health curriculum in general is taught is important as well. If it is taught as a lecture course where the relevance of the course material to their current and future life is not made clear, the impacts on wise behavior and decision making will be diminished. The Durand School District appears to have a health curriculum that provides good coverage of many MCH related topics. All curriculums should include discussion of relationships and considerate behavior as part of any relationship.

The Illinois Learning standards serves as a framework to guide and assist schools, and teachers with curriculum, instruction and assessments. To this end, findings of school health curriculums in Rockford and surrounding districts reflect these standards which schools can augment and supplement in their own health curriculums. One District official informed project staff (CB) that their health curriculum incorporates standards that are only relative and important to issues and concerns in their own community.

For the most part, findings in health curriculums were as follows:

1) Health education was incorporated/embedded in Physical Education classes

2) Districts used various portions of the Illinois Learning Standards, depending on grade level including:
   - Acquire movement skills and understand concepts needed to engage in health-enhancing physical activity (Goal19)
   - Achieve & maintain a health-enhancing level of physical fitness based upon continual self-assessment (Goal 20)
   - Develop team-building skills by working with others through physical activity (Goal 21)
• Health Promotion, Prevention and Treatment (Goal 22- attached)
• Human Body Systems (Goal 23-attached), and
• Communications and Decision-Making (Goal 24 - attached)

3) Districts have the option of using Illinois School Board Education (ISBE) resources that support Physical Development/Health in creating/designing their own health curriculums. Resources for additional supplements to the health curriculums are primarily web-sites such as the National Campaign to Prevent Teen and Unplanned Pregnancy and the Resource Center for Adolescent Pregnancy Prevention.

4) Physical Education/Health was recently updated to include new mandates to the Illinois School Code that appear to be more reflective of MIECHV benchmarks such as: Family Life (emotional, psychological and social), mental health and illness, sex education, teen dating violence, Violence prevention, sexual abuse and assault, Alcohol, Tobacco and Drug use and abuse, Child Abuse and Neglect. Though the ISBE site mentioned the update, there appeared to be no timeline in which schools would begin implementing the new Physical Education/ Health update. Course topics are not only for teachers, but for school personnel that work closely with students. The updated health topics more closely reflect MIECHV benchmarks.

On several occasions the issue of promoting self-esteem and enabling academic success through sound educational strategies was mentioned during community discussions. One factor that can lead to teen pregnancy is lack of success in school and becoming disconnected from seeking a career and/or job training. The Rockford Public School District is beginning a deliberate program designed to have middle school students begin to examine career/job choices, choose an education track to pursue as they move into high school, and attend school academies within the district focusing on different career options. A newsletter item about these plans is provided in Appendix G. The goal is to have young people begin thinking early about what they will do after high school and develop a plan to achieve his/her career and educational goals. This approach has been used previously in the Nashville, Tennessee public schools to better guide students in choosing and preparing for a career.

Most schools have a school nurse, but at the Auburn Campus, Rockford Public Schools is opening a student health clinic that will provide a variety of health services to middle school and high school age teens. The South Beloit school system also has school-based health clinics at the middle school and high school that will be staffed by UIC family medicine providers starting in January. Such clinics can provide access to acute and preventive medical as well as dental services. Because the providers can bill Medicaid or other health insurance coverage access to care can be enhanced in a way that is financially sustainable.
IX. **Suggestions by the corresponding author for next steps to aid in the organization and coordination of MCH improvements between key organizations and stakeholders.**

Reflection about the findings of this assessment:

1) The community should be made aware that there are disparities in MCH outcomes that are impacting children, the schools, and the community in a variety of ways (at the individual opportunity level, in terms of economic costs/lost productivity, and in the societal situation - especially among residents in particular geographic areas of the county where repeatedly the indicators in this report show adverse disparities relative to other geographic areas.)

2) Women with health MCH disparities should be included in development of a strategic plan (they are a stakeholder in efforts to improve MCH outcomes). What are their views of whether unintended pregnancy is a concern for example? What do they think would improve their life situation and/or that of their child(ren)?

3) Efforts should be made to have primary care physicians take a preconception health approach to women of child bearing age (which is occurring as young as age 13.) This would include focusing on pregnancy being a decision that has lifelong effects on the life of the mother, father and future child. The goal would be for every pregnancy in the county to be intended at the time it occurs. Family planning services should be readily/easily available regardless of income, location or insurance status.

4) If expansion of the home visitor program occurs in the future, agencies hiring home visitors should be sure to provide comprehensive training and orientation about their role and now to effectively interact in home situations and best approaches resolving situations and issues they will encounter.

5) School districts should carefully review their health curriculums with regard to what concepts and ideas are taught at each grade level and examine whether MCH related topics related to biological knowledge and behaviors are being taught in a way that is understood and remembered by young people. This question needs to be answered: “Where are the future parents in the county going to get the information needed to make informed decisions about becoming parents and functioning as responsible parents?”

6) Efforts should be made to help all children do well in school and function to their full ability. The critical step of being able to “read to learn” needs to be reached by all children. Children cannot stop at the step of simply “learning to read” to function effectively in today’s society. An article about efforts in the Rockford Public Schools to help youth think about careers and post high school options is provided in Appendix G.

7) If not already in place, a community directory should be developed on a website where providers and consumers can search for sources of medical, mental and social services and get details about who to contact for questions. Dr. Schultz, a pediatrician at Crusader Community Health has taken the lead in developing a website ([http://cap4kids.org/rockford/](http://cap4kids.org/rockford/)) that lists services related to children by topic area in the Rockford area. A similar site should be developed related to services for women of child bearing age and parents in general.

8) A leadership group needs to be created that includes medical, social service, educational, and governmental representation to focus on what can be done in the neighborhoods where MCH outcomes are most adverse with regard to LBW, VLBW, and NICU use and lack of adult completion of education beyond high school. A few key initiatives should be chosen and worked on using an operational plan.

9) Some type of media campaign needs to occur using a multimedia approach over a long period of time to adequately reach the community using patient education (classes and individual education), social media tools, and even perhaps text messaging to some patients to communicates key points related to MCH topics such as these and others:
a. the importance of deliberately planning pregnancy,
b. the importance of early prenatal care,
c. where to access MCH related services of various types,
d. the importance of maternal/partental behavior as an influence on the health of the infant, before and after birth, and
e. the importance of and key concepts for supporting and developing children birth to age 5.
REFERENCES


Winnebago County Planning Department (WIN GIS) Socio-Economic Indicator Maps, February 2014.