HEALTHY START

Florida HEALTH

Jefferson, Madison and Taylor Counties Maternal and Child Health Needs Assessment

July 2020

Comprehensive Maternal and Child Health Needs Assessment 2020

Prepared by the Healthy Start Coalition of Jefferson, Madison & Taylor Counties, Inc.

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Executive Summary

Jefferson, Madison and Taylor County residents have an average of 578 births per year, small numbers for the purposes of statistical significance for Florida, but substantial in terms of the disparity in birth outcomes. These are impoverished, rural communities considered to be economically disadvantaged with a poor prognosis for economic growth. It is important to note that while maternal and child health has improved significantly in Florida since the inception of the Healthy Start system of care in 1992, poor maternal and child health outcomes persist in these smaller communities.

One obvious trend that permeates this needs assessment is the presence of the black-white gap. While it is most prominent in Madison County, outcomes for all three counties signify true health disparities in birth outcomes. The Social Determinants of Health are key factors in the health outcomes in the rural communities of Jefferson, Madison and Taylor Counties, Florida. Perpetual poverty plays a key role in health outcomes, and these counties are some of the poorest in the state of Florida.

The causes of infant death in Madison County were primarily linked to short gestation, neonatal complications and overall health status. Preconception care and counseling are primary interventions needed for the African American maternal population in Madison County. In Taylor County, infant mortality has a discernable trend downwards for all races. For all counties combined, the primary cause of infant deaths were SIDS, unintentional injuries (suffocation) and birth defects for white babies. In Jefferson County, causes of death for black babies were related to maternal complications and prematurity.

Although premature birth is the leading cause of infant death, there are many contributing factors, most of which are associated with the preconception health status of the mother and her characteristics during pregnancy, which include nutritional status, pregnancy history, present pregnancy characteristics, psychological characteristics and adverse behaviors. 7.4% of babies born to residents of Madison County are born prematurely with low birth weight. In Jefferson County that percentage is 7% and 6.4% for Taylor County. The numbers are almost double for black babies, as 12.1% of all black babies in Madison County are born premature with low birth weight, compared to just 3.2% for white babies. In Jefferson County 9.7% of all black babies are premature with low birth weight, compared to 5.2% for whites. In Taylor County, the disparity narrows, with 7% of black babies born premature with low birth weight, compared to 6.2% for whites.

Smoking is associated with serious health concerns throughout all age groups, but smoking is especially detrimental to birth outcomes. Tobacco usage in all forms is linked to poor birth outcomes including preterm delivery, LBW and VLBW, IGUR and neonatal death. In JMT, the smoking rate is consistently above the state average and alarmingly, in Taylor County the rate is twice the state average. There is a substantial white-black gap with white women smoking 2.5 times more than their black counterparts.

Obesity during pregnancy can result in complications for both the mother and the fetus, but specifically women with a higher than normal body mass index (BMI) are linked to preterm labor, low birth weights and stillborn

deliveries; these women are more likely to receive a planned or emergent caesarian section due to health concerns. For Jefferson, Madison, and Taylor Counties, the average for women who are obese at conception are 35% for the three counties, up substantially from 13% in 2015. There are reasons to believe that this factor is a significant component to the overall health of the mother, and supports the notion that preconception health counseling is essential and should be included in planning service delivery.

The shorter the interval between the delivery of one baby and the conception of another has a strong correlation to LBW and VLBW outcomes. The accepted hypothesis is that nutritional depletion and stress on the mother's body from the labor and delivery process results in a higher-risk pregnancy and poor birth outcome for the subsequent infant due to lack of restoration. The lack of at least an 18-month interval is a significant concern for Jefferson County where over 41% of the births have a shorter interval, specifically for white mothers.

Although there are no private obstetric practices or birthing facilities in these counties, the local health departments do offer prenatal care services to low and moderate-risk women. The availability of these services has not been able to minimize the black disparity when it comes to birth outcomes, yet the absence would most likely create a greater gap based on access to care. In Madison County, over 60% of the pregnant women seek care at the local health department. Healthy Start services are also co-located in the health departments to expand the impact of prenatal care through education and home visiting. Rates of late entry into prenatal care have risen dramatically to nearly 11% in Madison County. Additional research conducted by the local health department suggests this data is inaccurate, as it is gathered during the process of the electronic birth record and many obstetric records from which the data is abstracted by birth clerks may be lacking completeness.

The recurring theme of racial disparity is present when discussing births to unwed mothers. In JMT births to unwed black mothers happen at a rate of three times that of their white counterparts and the percentages in these counties among black women are well above the state average. Research points to the presence of the father being more vital to positive birth outcomes than just financial security. When education and socio-economic status is accounted for among unwed mothers, the black-white birth outcome disparity persists. Determining the root cause for the disproportionate marital status among black women is a task beyond the scope of this needs assessment but is one that affects outcomes for black women in JMT, and service delivery planning should focus on engaging fathers.

Education status has continued to be a reliable tool in assessing the overall health of a population. Women in JMT are below the state average for high school completion among birthing mothers. Considered to be the most powerful determinant of health, mothers over the age of 19 without a high school diploma have improved dramatically from 2016 and are 2.7% for Jefferson, 2.2% for Madison, and 3.6% for Taylor County. However, the black-white gap still persists, with black mothers twice as likely as their white counterparts of not having a high school diploma.

Births to teens is linked to perpetual poverty among teen mothers as well as very pre-term delivery, LBW, VLBW and neonatal mortality. Within the JMT communities, this characteristic was previously a major issue among teens in Taylor County where the rate dropped from 26.1 per 1,000 live births in 2016 to 14.6. However, the trend in

Jefferson County is increasing with a rate twice the state average (13.6 per 1,000 births, compared to 7.4 for Florida). Teen pregnancy is conducive to poor conditions that span several disciplines from public health and social welfare to economic growth in the community. It is a perpetual problem that increases the vulnerable population and decreases the working population. Evaluation of existing service interventions is needed to pinpoint the limitations and create strategies to address the needs.

The lower breastfeeding initiation rates among black women in JMT are significant, especially in Taylor County, where only 48% of black women initiate breastfeeding, compared to 75% for their white counterparts. Breastfeeding is less common in women who receive WIC benefits and it is well documented that most low-income mothers know the health benefits of breastfeeding, but lack the peer and family support, face barriers at school and work, and receive information not conducive to breastfeeding. Strategies to improve the breastfeeding rate among black women in JMT should address the barriers that keep black women from engaging in healthy postnatal behavior for them and their babies. Some of these barriers have been identified in the breastfeeding survey conducted 2019/2020.

The characteristics of the birth mother provide a limited understanding of the maternal and child population of JMT. Similar to the analysis of infant mortality and birth outcomes, these characteristics reveal that there are significant differences between the three counties. There are factors outside the health of the birth mother that have significant implications on her unborn child. Some of these factors have different levels of influence and others are outside of the control of the birth mother. The Social Determinants of Health observed within these communities are a direct result of high rates of poverty, especially for the black population.

The characteristics of the three communities have an influence on the health of the women in the communities on both the personal, interpersonal and community level. This influence has no identifiable origin and this makes the task of addressing the need complicated, but not impossible. It is believed that interventions outside of the healthcare system are likely to have the greatest effect on health disparities as those contributing factors are present well before the issues are brought to the attention of medical providers. Healthy Start (HS) provides a health-social system of care within the JMT community that provides this intervention. The Healthy Start system provides targeted strategies at the community level and promotes the engagement of the healthcare system and social services as a support to the overall health of women before, during and after pregnancy as a method to tackle birth disparities in JMT. The most significant solutions observed in this needs assessment is the focus on preconception health among black women in all three counties. Preconception health is linked to poor birth outcomes and the characteristics of the birth mother that is linked to those outcomes. Science supports that a woman's health prior to her pregnancy holds immense control over the success of her pregnancy, and the life-course projection of her infant.

COVID-19
During the preparation of this needs assessment the health pandemic known as Coronavirus has greatly impacted the communities of Jefferson, Madison and Taylor Counties, in terms of access to health systems. While the current positivity rates are low comparable to the rest of Florida, pregnant women and infants are being impacted in ways that will not be measured for some time. It is clear that women are more reluctant to seek obstetric care due to the

threat of contracting the virus in the medical community, and some immunizations for their infants may be delayed for the same reason. It is also evident that more families are falling into poverty due to the economic impact of business closures and unemployment. Additionally, service providers report an increase in overall stress, lack of coping mechanisms for additional stress created as a result of the pandemic, including a rise in domestic violence. All of these factors, while not immediately measurable and included in this assessment, must be considered in the immediate planning needs for maternal and child health in these communities.

Process for Conducting Needs Assessment

The Healthy Start Coalition of Jefferson, Madison and Taylor Counties, Inc. is statutorily mandated to evaluate the needs of the maternal and child health population within its catchment area. The undertaking for this Needs Assessment includes the vision to enhance partnerships and engage new partners to create shared, meaningful goals for this area's maternal and child health populations and programs. The primary goal is to assess priority issues identified through careful data analysis and as described by the community. The Coalition is committed to addressing those issues considered most urgent through its strategic planning process.

Leadership

The Leadership Team for the MCH Needs Assessment includes executive, management and research expertise in the Coalition, its Board of Directors, and its contracted service providers. The primary data collection and analysis is provided by the Executive Director, Donna Hagan with assistance from contracted consultant, Pam Beck. The Leadership Team met quarterly during 2019-2020 to facilitate, guide, and make decisions about the progress and outcomes of the assessment. The Leadership Team was active in all aspects of the assessment, including survey development and input into the data analysis.

Methods

The methods for the assessment include a broad approach in order to ensure input from as many stakeholders and experts as possible and analysis that balances the quantitative and qualitative research. The methods covered three different processes: data analysis, surveys, and program evaluation for Healthy Start services. Figure 1 is an illustration of the process for data collection and priority setting.

Data collection and analysis for the assessment began in spring 2019 and included collecting and analyzing many reports and assessments that had been completed prior to that date. Survey instruments were designed to collect feedback from Coalition members, service providers, and Board members; these were administered through the summer and early fall 2019. Coalition member input includes those who are employed in school districts, community-based services, local public health agencies, childcare, home visiting, early intervention services, reproductive health services, private medical representatives, mental health services, and services for children with special health needs.

Throughout the fiscal year 2019-2020, targeted surveys were conducted to determine reasons behind choosing not to breastfeed. During December 2019 a satisfaction survey was issued to all open Healthy Start participants as of December 1, 2019. Additional consumer input is gathered through community education sessions; each women's health workshop is evaluated, and the results are included in the consumer feedback portion of the assessment.

Figure 1
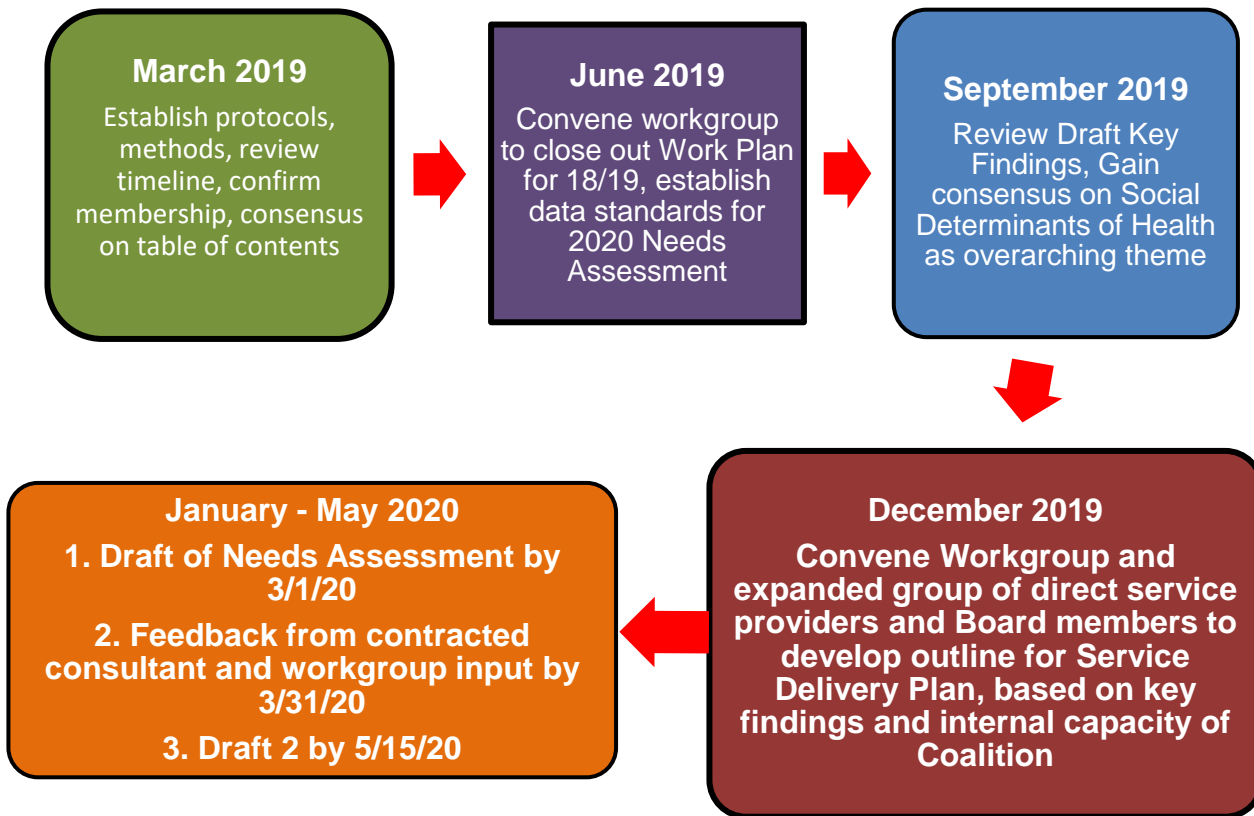
The result of the early workgroup meetings was an intentional focus on developing instruments and outlines for content. Gaining consensus early in the process in a workgroup comprised of members with competing priorities has resulted in a more fluid process in the final work stages of gathering and analyzing data.

Florida's Strategic Plan

The Coalition mirrors the Florida Department of Health, in terms of its cyclical approach to strategic planning for maternal and child health needs. In its most recent strategic plan, updated March 2019, there are stated goals for reducing racial disparity in infant mortality.

A. *By December 31, 2020, reduce the annual black infant mortality rate from 11.4 (2015) to 10.0 per 1,000 live births.*
B. *By December 31, 2020, reduce the black-white infant mortality gap from 2.6 (2015) to less than two times higher.*

The Department of Health in Jefferson and Madison Counties included maternal and child health goals and objectives in the 2019-2022 Strategic Plan and in the 2018-2021 Community Health Improvement Plan (CHIP). The overarching goal in the Jefferson and Madison Strategic Plan is, "Reduce infant mortality by ensuring access to prenatal care and by addressing underlying toxic stress to improve pregnancy outcomes by December 31, 2022." The Jefferson and Madison CHIP Maternal and Child Health Subcommittee established the driving goal, "Infant mortality rates will be below the state as a whole in five years." DOH-Jefferson and Madison's strategic

plan and CHIP include objectives in the areas of prenatal entry to care, breastfeeding, teen sexual risk avoidance education, and addressing toxic stress to support meeting the goal of reducing infant mortality.

The Department of Health in Taylor County's Strategic Plan listed the Maternal and Child Health goal as, "Reduce infant mortality by ensuring access to prenatal care and by addressing underlying stress to improve pregnancy outcomes by December 31, 2022." The most recent DOH-Taylor CHIP included a goal, "Improve birth outcomes in Taylor County." DOH-Taylor's strategic plan and CHIP include objectives in the areas of teen sexual risk avoidance education, reduction of STDs in ages 15-19, and addressing toxic stress to support meeting the goal of reducing infant mortality.

The Florida Department of Health is implementing an additional strategy to meet these goals, namely the **Healthy Baby Initiative.** County Health Departments are under the directive to formulate a quantitative data assessment for infant mortality and its root causes. This process will enhance local health systems' responsiveness to maternal and child health and support the role of the Healthy Start Coalition in each county in Florida. Currently, the Healthy Start Coalition of Jefferson, Madison and Taylor Counties is collaborating with its local health department in each of the counties to share needs assessment data, collaborate to educate the public, and partner to implement strategies.

Data Collection

Member Survey
The Coalition membership survey was prepared as part of the Internal Quality Initiative and focuses on the role of the Coalition in terms of mobilizing the community toward issues that improve maternal and child health. The survey was designed to reach, as survey respondents, a broad audience of health care and social services providers and community leaders. This audience of potential participants included state and local public health providers, state and local providers of other governmental social services, school-based health centers, child care providers, and representatives of organizations such as health professional organizations, non- profit organizations, community development/activist organizations, faith-based organizations, businesses, and volunteer organizations.

Consumer Input
Consumer input for this needs assessment was procured in three ways in a manner to elicit specific feedback from various types of maternal and child health consumers. A survey instrument was developed in March 2019 to reach Healthy Start and county health department clients who stated they would not be breastfeeding. The collection of reasons why and the trends are analyzed in the consumer survey section as well as discussed during the breastfeeding data analysis. The second set of consumer input data is derived from the evaluation of the women's health workshops conducted twice per year in each county. This feedback is critical in measuring the understanding of preconception health messaging and its role in improving birth outcomes. The third set of consumer input data is derived from the Healthy Start satisfaction surveys issued in December 2019.

Leadership Team Meetings

A small group of direct service providers and Board members served in an advisory capacity to oversee the development of the needs assessment and will be the coordination team of the Coalition's Service Delivery Plan for 2021-2026. In the first Leadership Team meeting (March 2019), the initial framework was established to gain consensus on the content, followed by a September 2019 meeting to determine the framework of the planning cycle around the Social Determinants of Health, and to review draft key findings.

The actual data collection and draft of the Needs Assessment was conducted by the Coalition's Executive Director during January and February 2020 with assistance from a contracted consultant during March – June 2020.

Data Sources
Maternal and Child Health data for Florida, by county, is easily accessible through the Florida Department of Health, Community Health Assessment Resource Tool Set (CHARTS), via web access at www.flhealthcharts.com. Many of the data indicators are available here, as developed by the Florida Department of Health, Division of Public Health Statistics and Performance Management. The Behavioral Risk Factor Surveillance System (BRFSS) is an on-going telephone health survey system, tracking health conditions and risk behaviors and is included as a reference that validates the exploration of the Social Determinants of Health. BRFSS data is collected monthly in all 50 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam. http://www.cdc.gov/brfss/.

Process for Linking Assessment with Priority Selection
The Leadership Team participated in the interpretation of survey results and reviewed the data analysis presented during March 2020. The Executive Director and contracted consultant provided detailed graphs of survey analysis, showing the frequency of responses for an issue for each population group. The discussions in Leadership Team meetings regarding priorities, barriers, and opportunities were captured electronically and used as resource information by the Leadership Team in conjunction with prioritization survey results. A matrix of all the surveys and meetings that shows the rank of the topic on the scale of priority or need in the surveys and the frequency the topic was selected as a priority in the stakeholder processes. Overall, the quality, validity, and comprehensiveness of the assessment surveys, stakeholder engagement, and evaluation increased the confidence of the Leadership Team that the final priorities for focus by the Coalition's next planning phase were truly those most important to families and their communities.

Dissemination of Findings
The priority goals created by this assessment process will drive planning and resource allocation by the Healthy Start Coalition. This five-year needs assessment has created an opportunity to address problems and disparities affecting the health of specific populations within these counties. The priority areas established through this process will result in establishing goals requiring the sharing of information, initiating new partnerships and collaborations, creating strategic plans and action plans, conducting additional assessment and research, and establishing an ongoing system of surveillance and policy and program development related to each priority goal area.

The Coalition plans to disseminate the assessment findings over the course of one year, inviting continuing

participation from families, stakeholders, and partners. The results will be published on the Coalition website for distribution with state and local partners, interested policy and advocacy groups, and health and public health professionals.

The Assessment findings will provide the basis for strategic planning around each priority area in collaboration with interested partners, stakeholders and providers. Research into the evidence-based or promising practices based on the assessment findings will help to further define the role in addressing broad and difficult social issues such as family violence, mental health, and addictions. This work will drive decisions in the allocation of resources. Additional assessment of disparities or inequities in access to available services or lack of appropriate services will be conducted to determine the need for specific populations and the specifics on reducing disparities through appropriate program and policies.
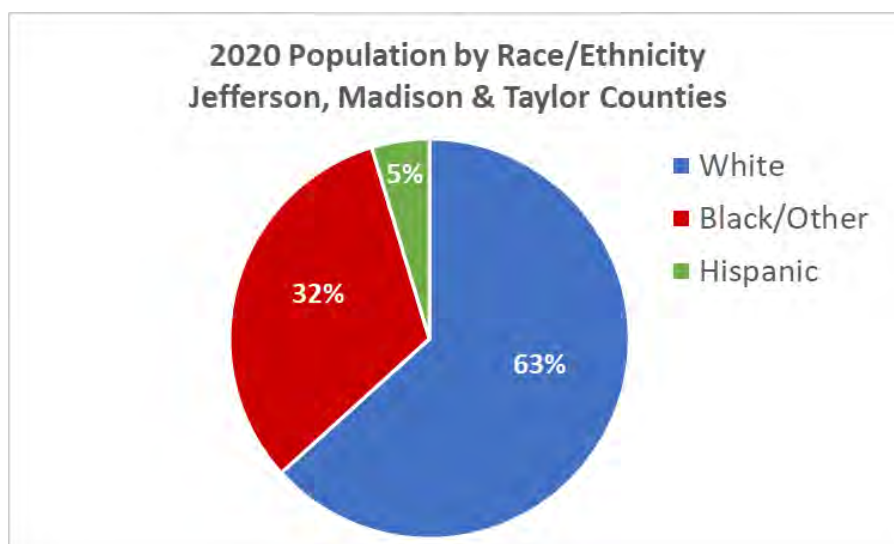
Demographics

These rural counties collectively have an estimated population of just over 57,000 people for 2020, with no significant increase or decrease since 2015. However, within each county, the racial makeup is markedly different. Jefferson County is roughly 60% white, 36% black, and 4% Hispanic and has slightly more males than females with a 52/48 split of the population.

Madison County is roughly 55% white, 40% black and 6% Hispanic and has slightly more males as well with a 53/47 male to female split. Taylor County is a predominantly white community, with 73% of the population white, 23% black, and 4% Hispanic. However, Taylor County has even a higher male to female split at 55/45.

2020 Population by County, Race, Ethnicity, and Sex

County	White			Black & Other			Hispanic			Total
	Female	Male	Total	Female	Male	Total	Female	Male	Total	
Jefferson	4,279	4,690	8,969	2,566	2,793	5,359	240	327	567	14,895
Madison	5,131	5,581	10,712	3,699	4,049	7,748	376	709	1,085	19,545
Taylor	7,989	8,688	16,677	2,196	3,096	5,292	265	764	1,029	22,998
Total	17,399	18,959	36,358	8,461	9,938	18,399	881	1,800	2,681	57,438

2020 Population by Race/Ethnicity
Jefferson, Madison & Taylor Counties

- White
- Black/Other
- Hispanic

63% White, 32% Black/Other, 5% Hispanic

Compared to the state of Florida which is only 17% black for 2020 population estimates from the Florida Legislature's Office of Economic and Demographic Research (EDR), these counties have the highest black population, second only to Gadsden County.

2020 Percent of Total County Population, by Race/Ethnicity and Sex

County	White			Black & Other			Hispanic			Total Population
	Female	Male	**Total**	Female	Male	**Total**	Female	Male	**Total**	
Gadsden	17%	16%	**33%**	31%	26%	**57%**	5%	5%	**10%**	48,197
Hamilton	25%	30%	**55%**	13%	22%	**35%**	4%	6%	**10%**	14,967
Jefferson	29%	31%	**60%**	17%	19%	**36%**	2%	2%	**4%**	14,895
Leon	29%	27%	**56%**	20%	17%	**37%**	3%	3%	**7%**	298,858
Madison	26%	29%	**55%**	19%	21%	**40%**	2%	4%	**6%**	19,545
Taylor	35%	38%	**73%**	10%	13%	**23%**	1%	3%	**4%**	22,998
Total	27%	26%	**53%**	11%	10%	**20%**	13%	13%	**26%**	21,599,535

Data analysis for females of childbearing age (15-44) show that 43% of the 1,977 females in Jefferson County, 45% of the 3,027 females in Madison County and 23% of the 3,278 females in Taylor County are Black, non-Hispanic. Percentages for Hispanic females are 4% in Jefferson, 6% in Madison and 3% in Taylor.
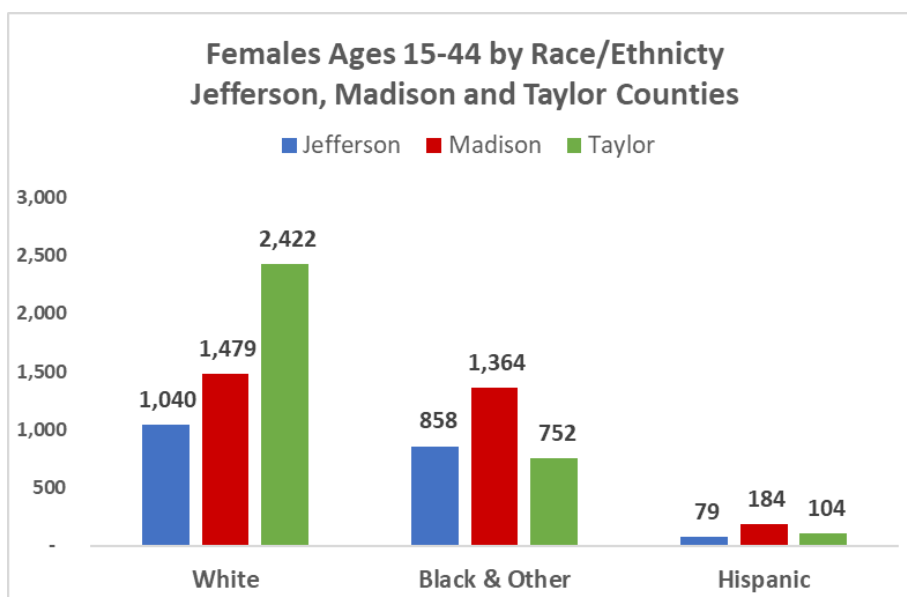
Although this needs assessment is most narrowly focused on maternal and child health, the substantial minority population lends itself to exploring the social determinants of health and the corresponding effects of the racial gap in all health outcomes, discussed later in the text.

INFANT and FETAL MORTALITY

Infant Mortality is simply defined as the death of children under the age of one year. However, its meaning for a community and as an indicator of overall well-being of human society is complex at best. The *infant mortality rate* is an estimate of the number of infant deaths for every 1,000 live births. This rate is often used as an indicator to measure the health and well-being of a county, state, or nation, because factors affecting the health of entire populations can also impact the mortality rate of infants. There are obvious differences in infant mortality by age, race, and ethnicity, which deepen the meaning for health planners who seek out root causes to reduce and eliminate infant mortality.

First identified as a social problem by William Farr in 1865, infant mortality has long been the instrument for which nations have been measured in terms of overall health. The primary role of the Healthy Start Coalition under Florida Statute 383.216 is to reduce and eliminate infant mortality in a geographical area of Florida assigned to the Coalition. The data used for evaluating infant mortality is provided by the Florida Department of Health through the FLHealthCharts web application.

The Florida Department of Health devotes considerable resources to collecting and reporting data on infant mortality. The FDOH publishes its annual Actual Versus Expected Infant Deaths by Coalition area. For the most recent 2017 updated analysis, there were no significant variances. Of the 521 births in 2017, the State Bureau of Family Health Services predicted 3 infant deaths. The area experienced 2 infant deaths for the 2017 single year for a rate of 3.84 infant deaths per 1,000 live births. This report is crucial in determining new emerging barriers to optimal maternal and child health care as well as local strengths that prevent poor birth outcomes.

ANALYSIS

The rural counties of Jefferson, Madison and Taylor Counties in North Florida experience an average birth count collectively each year of 578 births. Jefferson is the fourth smallest county in Florida in terms of population and has had a significant decline in its number of births beginning in 2009 with an overall decrease of 18% in the average number of births between the last two multi-year periods. Table 1.0 illustrates the birth counts for these counties over the last multi-years.

When birth *counts* are relatively small, the infant death indicator can be volatile when displayed as *rate for a single year*. Table 1.1 depicts the infant death counts for these counties and the State of Florida and Table 1.2 reflects these counts by race. While the infant death counts in Florida represent a marked trend downwards, the counts in the small counties reflect an infant death rate that should be reviewed with caution, in terms of discerning trends. The most remarkable example of this volatility occurs for Jefferson County when looking at the single year infant death rate for 2013 at 29.6, nearly five times the state average. The optimal methodology for reviewing infant death rates for smaller counties is the use of the three-year rolling average over a multi-year period. Figures 1.0, 1.1, and 1.2 reflect the infant death rates (rolling 3-year average) for the span of multi-years. There are no identifiable trends from this information, other than a positive trend in Taylor County with fewer infant deaths than the state.

Table 1.0 Births by Year of Birth and Mother's County of Residence

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Jefferson	155	127	126	139	135	127	124	121	142	111	1,307
Madison	229	211	214	212	221	191	210	197	175	184	2,044
Taylor	285	271	242	221	247	217	249	248	204	242	2,426
Total	669	609	582	572	603	535	583	566	521	537	5,777

For the multi-year period the average number of births is 578, the average for the last five years is lower at 548 for the three-county area, which mirrors the overall slight decline in births for the state.

Table 1.1 Infant Deaths, Counts and Rates Per 1,000 Live Births

Year	Jefferson		Madison		Taylor		Florida	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate
2009	3	19.4	1	4.4	2	7.0	1,525	6.9
2010	1	7.9	4	19	5	18.5	1,400	6.5
2011	1	7.9	3	14	3	12.4	1,372	6.4
2012	1	7.2	2	9.4	1	4.5	1,285	6.0
2013	4	29.6	0	0.0	0	0.0	1,318	6.1
2014	1	7.9	4	20.9	0	0.0	1,327	6.0
2015	0	0.0	0	0.0	3	12.0	1,400	6.2
2016	0	0.0	3	15.2	0	0.0	1,380	6.1
2017	1	7.0	1	5.7	0	0.0	1,355	6.1
2018	1	9.0	2	10.9	2	8.3	1,334	6.0

For the multi-year period, Jefferson County had 13 infant deaths; Madison had 20 and Taylor, as the largest county by population, had 16 infant deaths.

Table 1.2, Resident Infant Death County by Year by Race/Ethnicity by Residence County

Year	Jefferson			Madison			Taylor			Totals
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic	
2009	2	1	0	0	0	1	1	1	0	6
2010	1	0	0	0	4	0	3	2	0	10
2011	1	0	0	0	3	0	2	1	0	7
2012	0	1	0	0	1	1	1	0	0	4
2013	0	4	0	0	0	0	0	0	0	4
2014	0	1	0	2	2	0	0	0	0	5
2015	0	0	0	0	0	0	2	1	0	3
2016	0	0	0	0	3	0	0	0	0	3
2017	0	1	0	0	1	0	0	0	0	2
2018	0	1	0	1	1	0	1	1	0	5
Totals	4	9	0	3	15	2	10	6	0	49

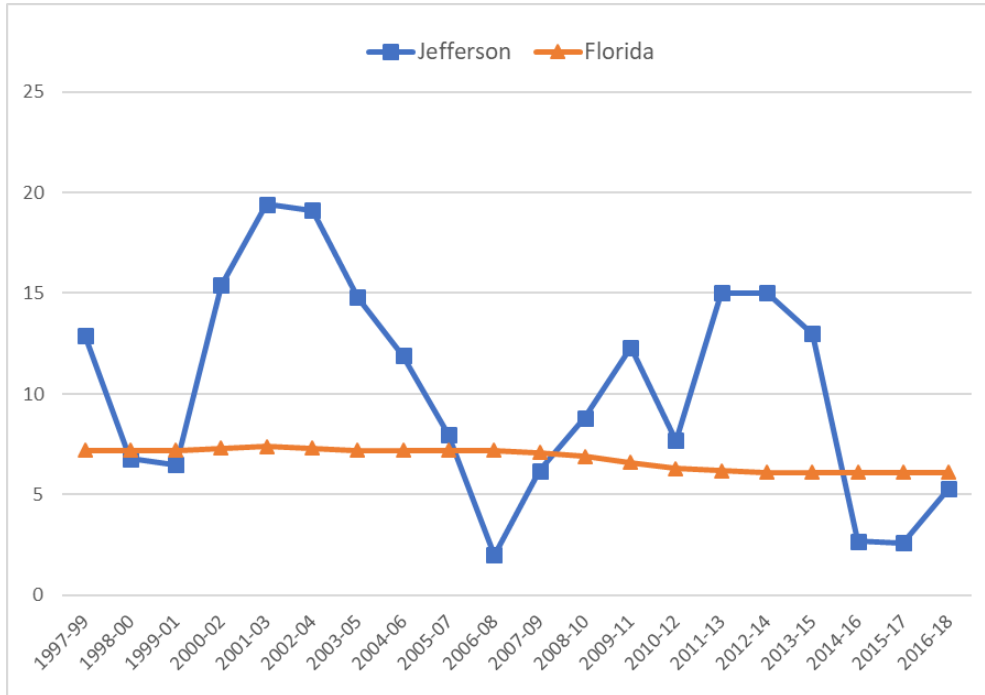**Figure 1.0 Infant Deaths Per 1,000 Live Births, 3-Year Rolling Rates, Jefferson County and Florida**

Figure 1.1 Infant Deaths Per 1,000 Live Births, 3-Year Rolling Rates, Madison County and Florida
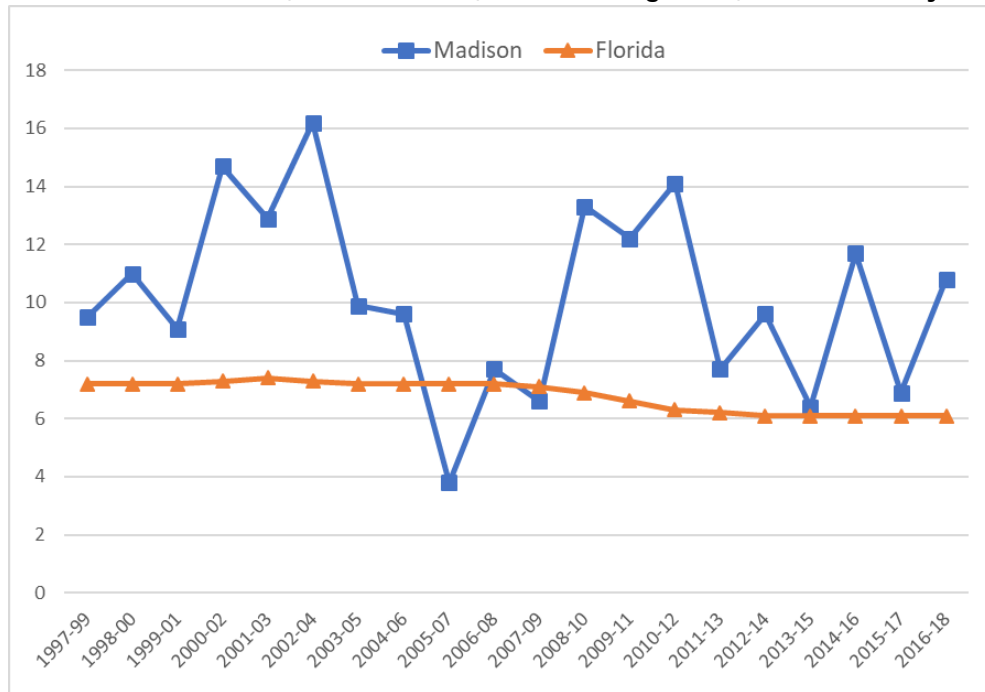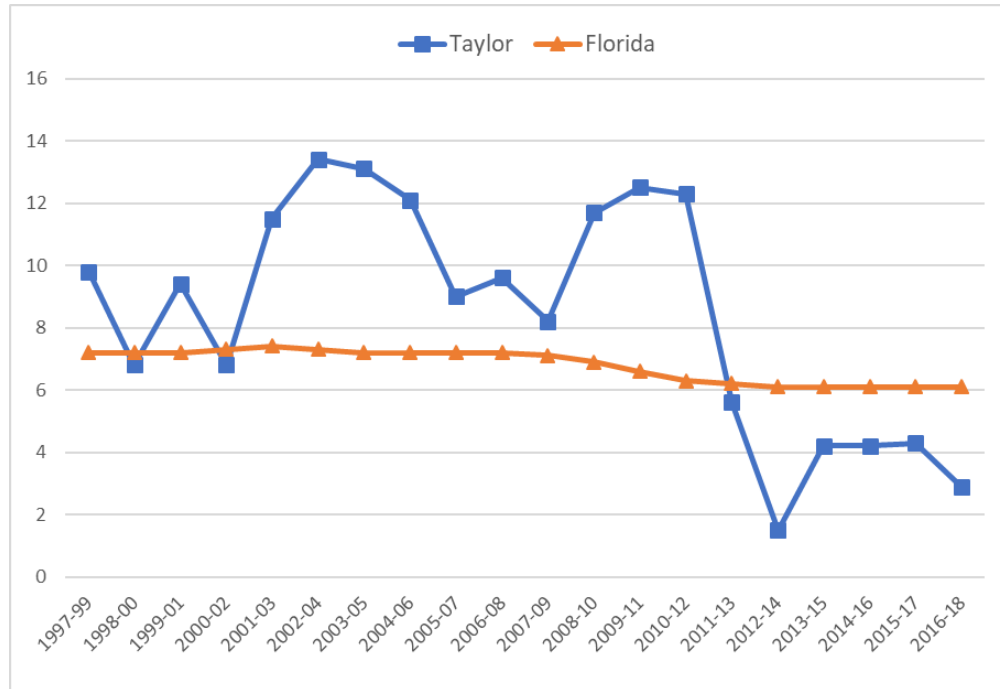
Figure 1.2 Infant Deaths Per 1,000 Live Births, 3-Year Rolling Rates, Taylor County and Florida

Black-White Gap in Infant Mortality

Although infant mortality rates have dropped for Florida as a whole, rural communities experience infant death as volatile rates when compared to the state. However, what is comparable is the racial gap between black and white infant death rates. The difference between white and black infant death rates is significant and is persistent across Florida, across small counties, and across the United States. For Jefferson County, Figure 1.3 reflects the disparity in infant mortality between blacks and whites; for 2016-2018 the black-white gap is significant. The rate for black infant deaths is 12.7, compared to zero for whites, or *13 to 1*.

For Madison County, Figure 1.4 depicts the infant mortality rate over the last multi-years by *race*. The most recent three-year average is 8.4 for black infant deaths, compared to just 3.2 for whites for 2016-2018. This is a ratio of nearly 3:1. The trend of the black-white gap is significant in Madison County, in that it is *consistent* across the years. The only years where the gap narrows are 2012-2015 where the Hispanic deaths occur. Since most Hispanics also often identify as white, this raises the white rate to almost that of the black rate for those years. The small Hispanic population and the significant impact on the infant mortality rate for the Hispanic ethnicity is an example of volatility when comparing rates in small population sets. The Hispanic population is less than 1% of the Madison County population; one infant death in 2012 results in a three- year rolling rate of 58.8. (Hispanic population is now close to 6%) Table 1.2 shows the actual number of Hispanic infant deaths (3) over the multi-year period.

Taylor County has a slightly different outcome for infant mortality by race. The infant mortality rate overall has sharply declined in Taylor since 2013 yet the black white gap is nearly 2:1 for all multi-years. The 2016-2018 rates, however, are very low for both races, at zero for blacks and 1.9 for whites.

It is difficult to disentangle the direct links between the recent trends in infant mortality and their causes without additional research, but the persistence of this black-white gap challenges efforts to reduce health disparities. It is important to investigate factors behind this worrisome trend. It is possible that more black women have high-risk pregnancies than others.

Social factors like increases in unemployment and poverty rates or reduced access to health care are important social factors to consider when approaching the black-white gap.[2]
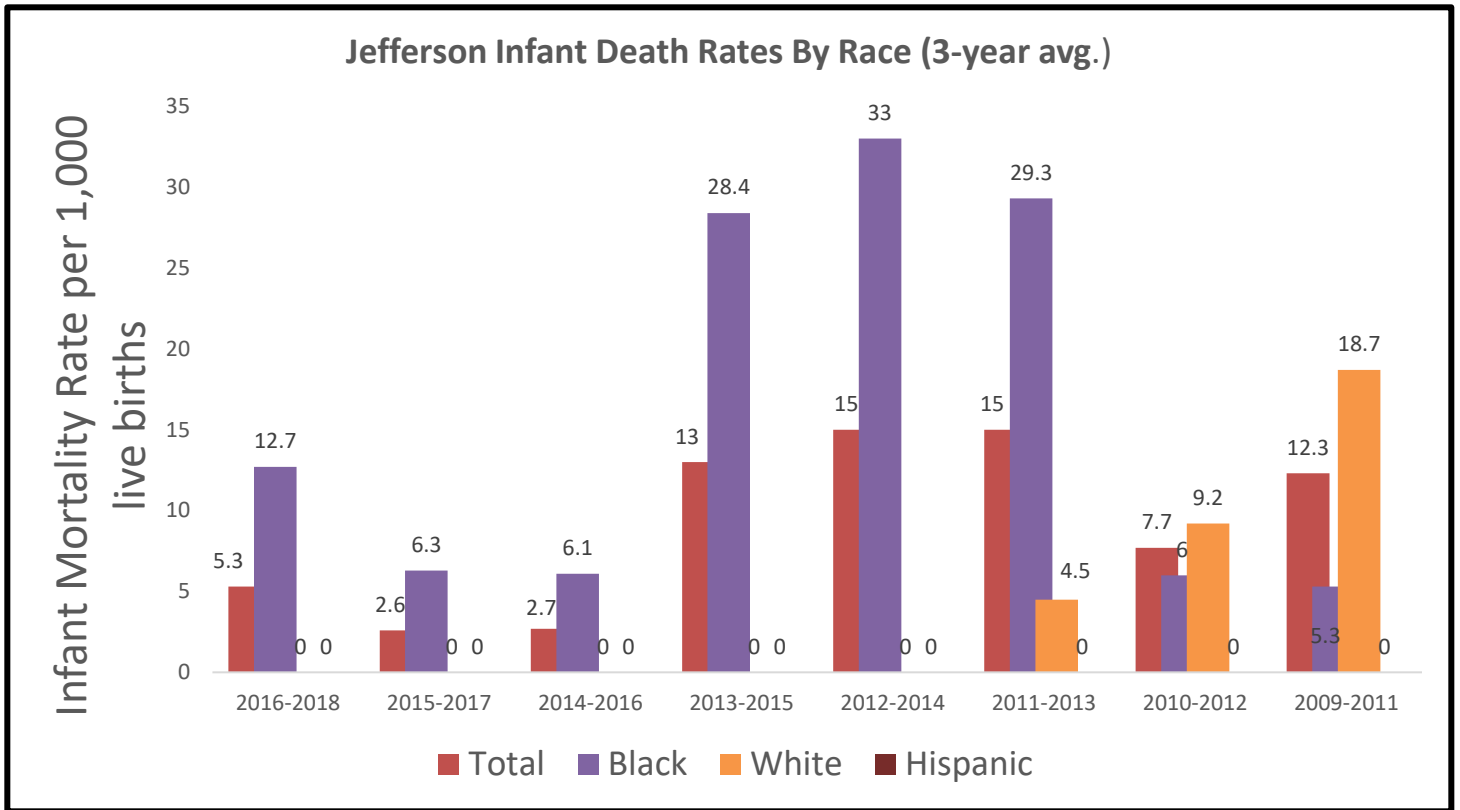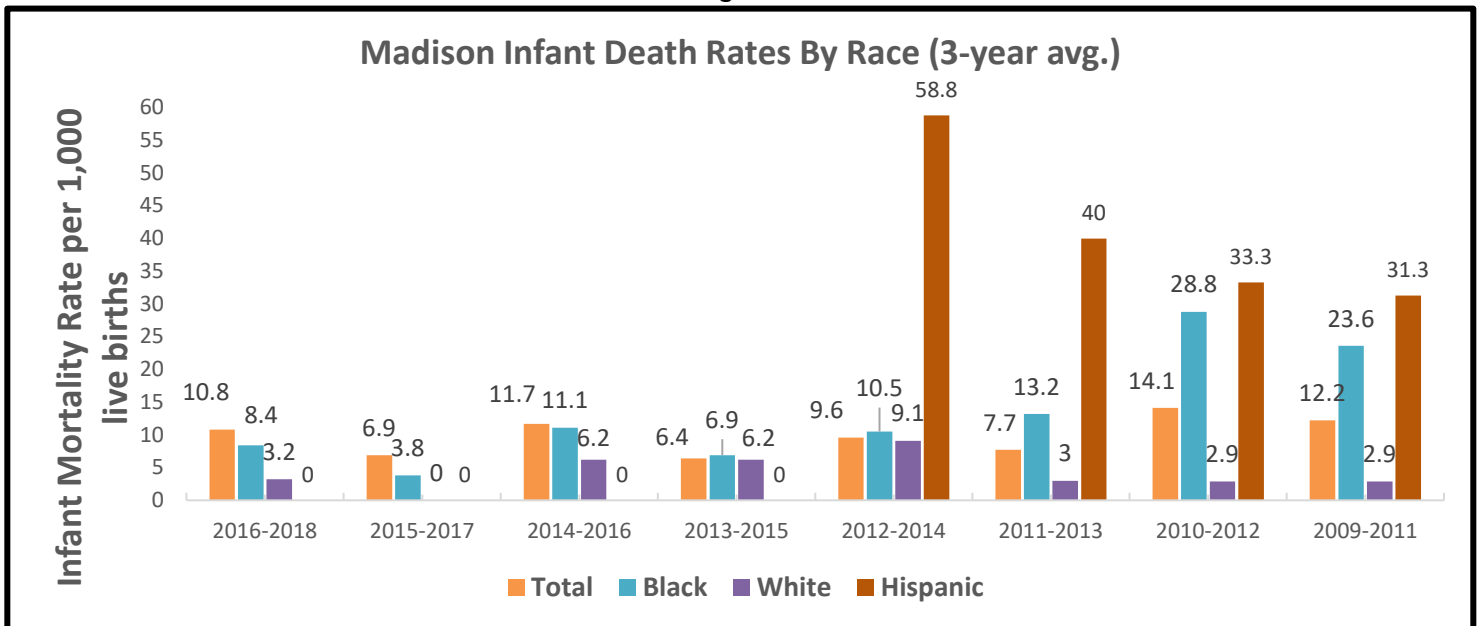
Figure 1.3

Jefferson Infant Death Rates By Race (3-year avg.)

Figure 1.3 — Jefferson Infant Death Rates By Race (3-year avg.). Infant Mortality Rate per 1,000 live births.

Year	Total	Black	White	Hispanic
2016-2018	5.3	12.7	0	0
2015-2017	2.6	6.3	0	0
2014-2016	2.7	6.1	0	0
2013-2015	13	28.4	0	0
2012-2014	15	33	0	0
2011-2013	15	29.3	4.5	0
2010-2012	7.7	6	9.2	0
2009-2011	12.3	5.3	18.7	0

Figure 1.4

Madison Infant Death Rates By Race (3-year avg.)

Figure 1.4 — Madison Infant Death Rates By Race (3-year avg.). Infant Mortality Rate per 1,000 live births.

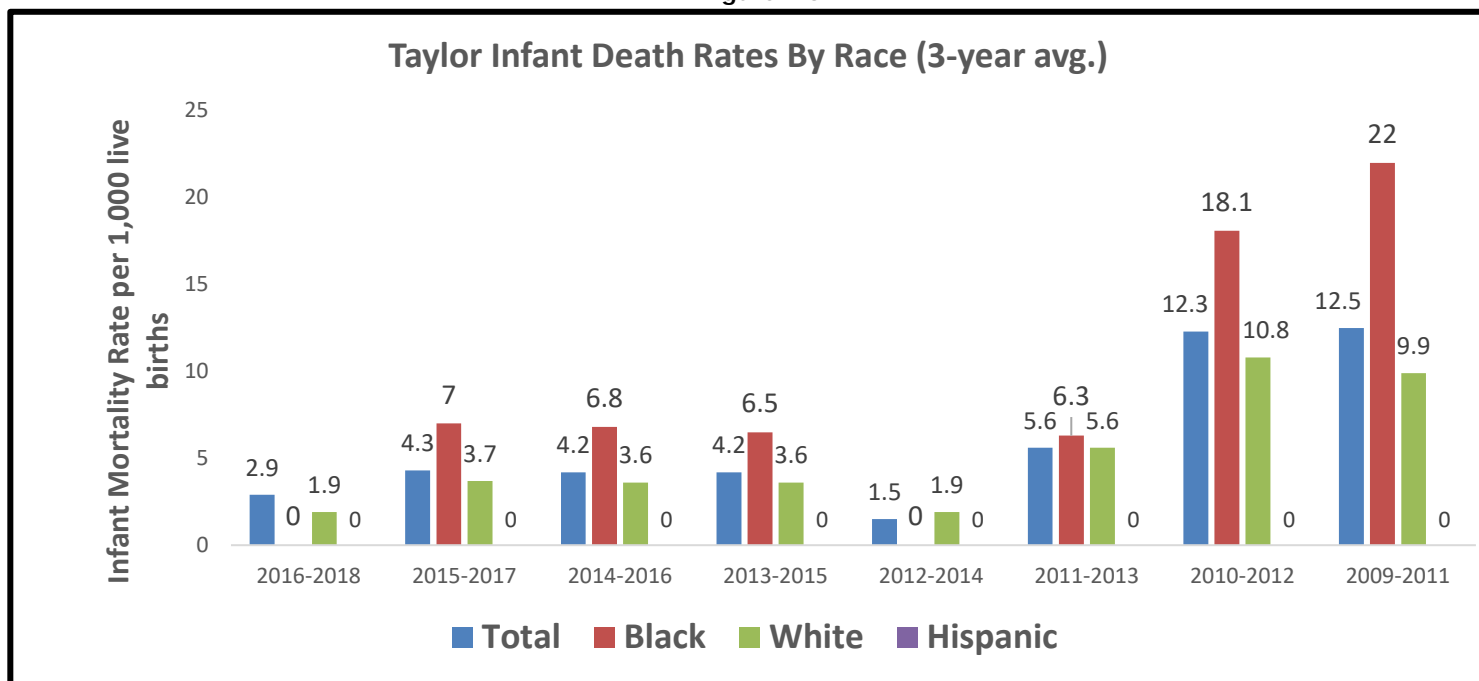| Year	Total	Black	White	Hispanic
2016-2018	10.8	8.4	3.2	0
2015-2017	6.9	3.8	0	0
2014-2016	11.7	11.1	6.2	0
2013-2015	6.4	6.9	6.2	0
2012-2014	9.6	10.5	9.1	58.8
2011-2013	7.7	13.2	3	40
2010-2012	14.1	28.8	2.9	33.3
2009-2011	12.2	23.6	2.9	31.3

Figure 1.5


Taylor Infant Death Rates By Race (3-year avg.)

PERINATAL MORTALITY

The perinatal period commences at 22 completed weeks (154 days) of gestation and ends seven completed days after birth. Perinatal mortality and maternal health are closely linked. Perinatal mortality refers to the number of stillbirths (fetal deaths) and the number of infant deaths in the first week of life (early neonatal mortality).

The denominators for all perinatal rate computations are per 1,000 live births plus fetal deaths for their respective time period. The distinction is useful for monitoring perinatal mortality throughout the gestational age spectrum because the majority of fetal deaths occur before 28 weeks of gestation.[2]
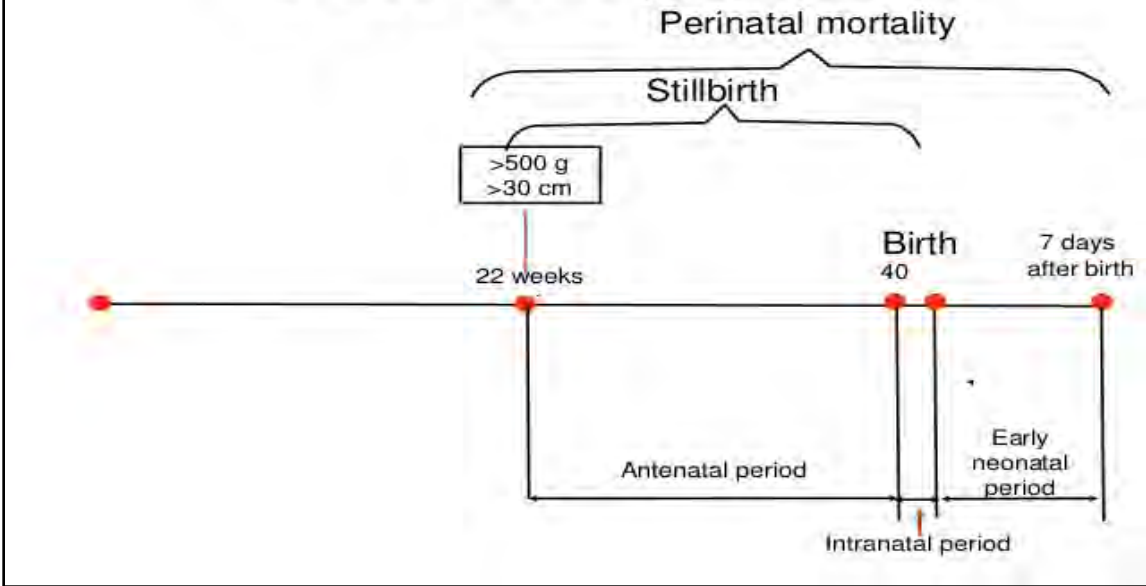
Fetal mortality

Fetal death refers to the intrauterine death of a fetus prior to delivery. Fetal mortality is generally divided into three periods: early (less than 20 completed weeks of gestation), intermediate (20–27 weeks of gestation), and late (28 weeks of gestation or more). Although the vast majority of fetal deaths occur early in pregnancy, Florida, like most states in the United States only report fetal deaths at 20 weeks of gestation or more, and these intermediate and late fetal deaths are the subject of this analysis. Statistics on fetal death exclude data for induced terminations of pregnancy. Fetal mortality rates in this report are computed as the number of fetal deaths at 20 weeks of gestation or more per 1,000 deliveries. Table 1.3 below reflects the fetal death rate for all races for the last multi-years. These numbers are less volatile than infant mortality and indicate significant perinatal health issues addressed later in the text. Although the state of Florida has experienced a steady decline in fetal deaths over the last multi-years, the counties of Jefferson, Madison and Taylor have seen an increase in fetal deaths, especially in Jefferson County, which is currently twice the state average.

Table 1.3

Fetal Deaths Per 1,000 Deliveries, 3-Year Rolling Rates				
Year	Jefferson	Madison	Taylor	Florida
2016-18	15.8	8.9	5.7	6.8
2015-17	12.8	10.2	8.5	6.9
2014-16	5.3	6.6	9.7	6.9
2013-15	7.7	8.0	9.7	7.0
2012-14	9.9	6.4	5.8	7.1
2011-13	12.3	7.7	9.8	7.2
2010-12	7.6	10.9	9.4	7.2
2009-11	4.9	12.1	11.2	7.2
2008-10	0.0	13.2	9.3	7.2
2007-09	0.0	6.6	12.7	7.3
2006-08	0.0	5.1	13.0	7.4
2005-07	2.0	2.5	8.9	7.4
2004-06	4.0	8.2	4.0	7.4
2003-05	4.2	8.4	2.9	7.5
2002-04	4.2	11.7	4.4	7.6
2001-03	6.4	8.6	4.3	7.7
2000-02	8.7	14.5	6.8	8.0
1999-01	17.1	13.5	8.0	8.0
1998-00	15.7	17.0	8.1	7.9
1997-99	14.9	12.5	9.7	7.8

Neonatal mortality

A neonatal death is defined as a death during the first 28 days of life (0-27 days). The rate is calculated by the number of neonatal deaths x 1000 divided by the total number of live births for the same time period. Neonatal mortality and the neonatal mortality rate reflect the health and well-being of the population's women of reproductive age and their infants as well as the quality of the health care available. Neonatal mortality information is generally associated with risk factors and issues related to pregnancy and birth. Table 1.4 shows the neonatal infant death rate for the last multi-years for all three counties. When overlaid with total infant death rates, the data is identical for most years, indicating that nearly all infant

deaths were in the neonatal period. The statistical differences occur during 2014-2016 in Madison County where the infant deaths occurred primarily beyond the neonatal period and in Taylor County for four out of the last five years, where the infant deaths were classified as SIDS deaths beyond the neonatal period. For the purposes of developing general themes, however, the neonatal infant death rate and the overall infant death rate are the same or very close in all years in all counties, reflecting that the target infant risk period is the first 28 days of life.

Table 1.4

Neonatal Infant Deaths Per 1,000 Live Births, 3-Year Rolling Rates				
	Jefferson	Madison	Taylor	Florida
Years	**Rate**	**Rate**	**Rate**	**Rate**
2016-18	2.7	10.8	2.9	4.1
2015-17	2.6	6.9	0.0	4.2
2014-16	2.7	6.7	0.0	4.2
2013-15	7.8	1.6	0.0	4.1
2012-14	10.0	4.8	0.0	4.0
2011-13	7.5	7.7	1.4	4.1
2010-12	5.1	11.0	8.2	4.2
2009-11	9.8	9.2	10.0	4.4
2008-10	8.8	7.4	9.4	4.5
2007-09	6.2	4.0	5.8	4.5
2006-08	2.0	3.9	6.0	4.6
2005-07	8.0	2.5	6.4	4.6
2004-06	9.9	5.5	6.7	4.6
2003-05	12.7	5.6	7.3	4.6
2002-04	14.9	8.8	7.4	4.8
2001-03	15.1	7.2	5.8	4.9
2000-02	11.0	8.8	2.7	4.8
1999-01	4.3	6.1	6.7	4.7
1998-00	6.8	7.9	6.8	4.7
1997-99	12.9	6.3	7.0	4.8

Postneonatal Deaths

Postneonatal Mortality Rate is the number of resident newborns dying between 28 and 364 days of age divided by the number of resident live births for the same geographic area (for a specified time period, usually a calendar year) and multiplied by 1,000. Compared to fetal deaths and neonatal deaths these numbers are relatively small for all years, further indication that the most vulnerable periods of risk are the perinatal and neonatal periods for determining interventions. The majority of the Taylor postnatal deaths for the most recent multi-years were SIDS deaths.

Table 1.5

Postneonatal Infant Deaths Per 1,000 Live Births, 3-Year Rolling Rates				
	Jefferson	**Madison**	**Taylor**	**Florida**
Years	**Rate**	**Rate**	**Rate**	**Rate**
2016-18	2.7	0.0	0.0	2.0
2015-17	0.0	0.0	4.3	2.0
2014-16	0.0	5.0	4.2	1.9
2013-15	5.2	4.8	4.2	2.0
2012-14	5.0	4.8	1.5	2.1
2011-13	7.5	0.0	4.2	2.1
2010-12	2.6	3.1	4.1	2.2
2009-11	2.5	3.1	2.5	2.2
2008-10	0.0	5.9	2.3	2.4
2007-09	0.0	2.7	2.3	2.5
2006-08	0.0	3.9	3.6	2.6
2005-07	0.0	1.3	2.6	2.6
2004-06	2.0	4.1	5.4	2.6
2003-05	2.1	4.2	5.8	2.6
2002-04	4.3	7.4	6.0	2.6
2001-03	4.3	5.8	5.8	2.5
2000-02	4.4	5.9	4.1	2.5
1999-01	2.2	3.0	2.7	2.5
1998-00	0.0	3.1	0.0	2.4
1997-99	0.0	3.2	2.8	2.4

Census Tract Maps for Infant Mortality

Each of the three county census tracts are below and indicate a repeated theme. Most of the infant deaths occur within the major city limits in each county, which is the primary location of the African American demographic who experience infant loss *at least* twice as much and up to *four times as often* as their white counterparts. The white population in these rural communities is more likely to live on farms outside the city limits in each community. The exception to that is Taylor County which also includes substantial coastal properties, which are exclusively white. Census tracts are the preferred unit of analysis compared to zip codes. They are designed to have a homogenous population with an average of 4,000 people. The tracts are established as consistent blocks of geography that remain stable over a 10-year period. Every decennial, the U.S. Census Bureau updates census tract boundaries to coincide with the updated population figures. Data in the FLHealthCHARTS Community Map uses 2010 census tract boundaries.[1]

**Figure 1.6 Jefferson County Census Map for Infant Mortality**
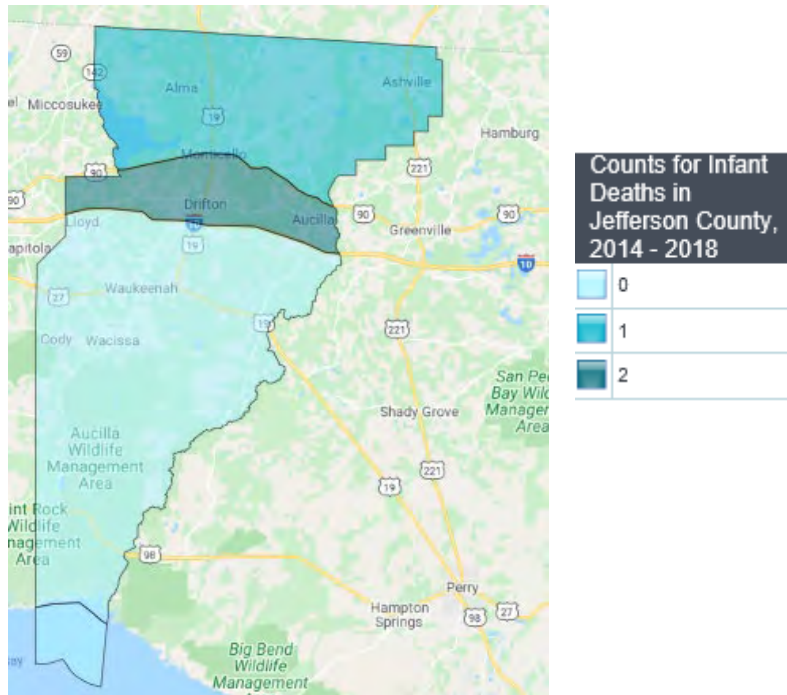
The infant deaths in Jefferson County, according to the Census Map have not occurred south of the Interstate, a sparsely populated area with coastal access. Also, there was only 1 infant death north of the city limits for the five years included in the map. The concentration of infant deaths for Jefferson County have occurred within the city limits of Monticello, the county seat for Jefferson County.

Figure 1.7 Madison County Census Map for Infant Mortality
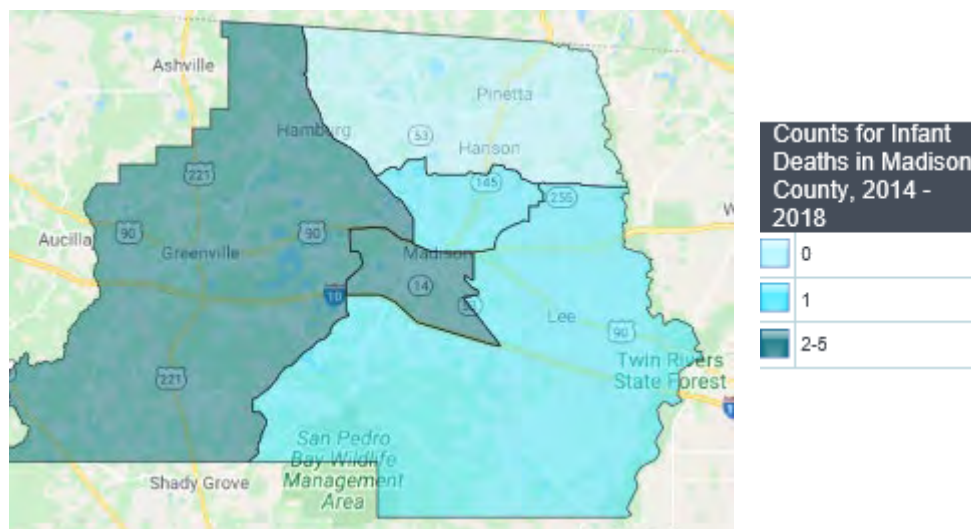
Infant deaths in Madison County, according to the Census Map, occur primarily within the city limits of Madison as well as areas west of Madison, known as Greenville. The Greenville area is inclusive of all areas west of the city of Madison all the way to the Jefferson and Taylor County boundaries. Zero deaths have occurred in the last five years in northern Madison County, which is primarily farms and a lakeside community that borders South Georgia. There was one infant death in the easternmost part of the county.

Figure 1.8 Taylor County Census Map for Infant Mortality
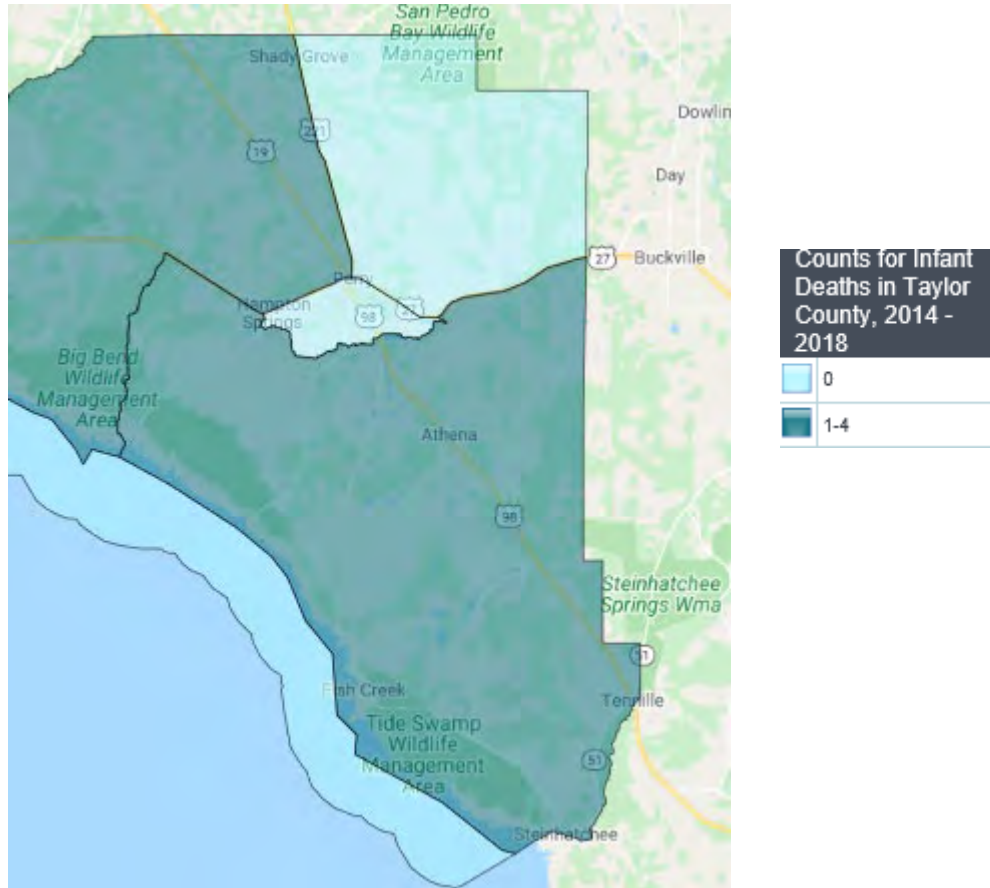
Taylor County is a huge land mass that is sparsely populated in the western coastal areas, which are primarily marsh. The southern end of the county is a community that is detached from the city of Perry and has few resources for families, including an hour drive to the closest prenatal care provider. All infant deaths occurred either in the city limits of Perry, the sparse southwest, or in the Steinhatchee community at the southernmost point in Taylor.

CAUSES OF DEATH

There are 130 causes of infant death listed for the infant and fetal death certificate in Florida. However, they are five major groupings that allow ease of analysis and are widely accepted[3]:

1. Birth Defects
2. Pre-Term Birth
3. Maternal Complications of Pregnancy
4. Sudden Infant Death Syndrome
5. Injuries

For the 13 infant deaths in Jefferson County over the last multi-years, 6 were related to maternal causes or pregnancy conditions; 5 of the 6 were black babies. These maternal causes are important as they validate the need for preconception care and counseling services, which is the core message for infant mortality prevention both at the national and state levels. Leading causes of death for Jefferson County were Maternal Complications of Pregnancy (23%) which include a variety of maternal issues such as obesity, hypertension, diabetes, mental health conditions, UTI's and anemia. Birth Defects (23%) and

SIDS (23%) were the other two major categories of infant deaths for Jefferson County.

Leading causes of death in Madison County are nearly all associated with prematurity. Of the 20 babies that died in the last multi-years, 12 have a cause of death related to short gestation or prematurity; 8 of these were black babies. In Taylor County, the causes are more along racial lines between blacks and their white counterparts. Of the 16 babies that died in Taylor County between 2009 and 2018, 11 were white, while 5 were black. However, for white babies the causes were predominantly birth defects and SIDS. Cause of death for black babies centered more on maternal complications and prematurity.

Table 1.6 Jefferson County - Resident Leading Causes of Infant Death by Race and Ethnicity, 2009-2018

	White	Black & Other	Hispanic	Total
Newborn Affected by Maternal Complications of Pregnancy (P01)	0	3	0	3
Newborn Affected by Complications of Placenta, Cord, and Membranes (P02)	1	0	0	1
Disorders Related to Short Gestation and Low Birth Weight, Not Elsewhere Classified (P07)	0	1	0	1
Interstital Emphysema & Related Conditions Originating in the Perinatal Period (P25)	1	0	0	1
Congenital Malformations, Deformations, & Chromosomal Abnormalities (Q00-Q99)	1	2	0	3
Sudden Infant Death Syndrome (R95)	1	2	0	3
Unintentional Injuries (V01-X59)	0	1	0	1
Total	4	9	0	13

Table 1.7 Madison County - Resident Leading Causes of Infant Death by Race and Ethnicity, 2009-2018

	White	Black & Other	Hispanic	Total
Other Non-rankable Cause of Death	0	4	0	4
Renal Failure & Other Kidney Disorders (N17-N19, N25, N27)	0	1	0	1
Newborn Affected by Maternal Complications of Pregnancy (P01)	0	3	0	3
Newborn Affected by Complications of Placenta, Cord, and Membranes (P02)	0	1	0	1
Disorders Related to Short Gestation and Low Birth Weight, Not Elsewhere Classified (P07)	1	2	1	4
Neonatal Hemorrhage (P50-P52, P54)	0	3	0	3
Congenital Malformations, Deformations, & Chromosomal Abnormalities (Q00-Q99)	0	0	1	1
Sudden Infant Death Syndrome (R95)	2	0	0	2
Unintentional Injuries (V01-X59)	0	1	0	1
Total	3	15	2	20

Table 1.8 Taylor County - Resident Leading Causes of Infant Death by Race and Ethnicity, 2009-2018

	White	Black & Other	Hispanic	Total
Other Non-rankable Cause of Death	1	0	0	1
Septicemia (A40-A41)	0	1	0	1
Bronchitis, Not Elsewhere Specified (J40-J42)	1	0	0	1
Newborn Affected by Complications of Placenta, Cord, and Membranes (P02)	0	1	0	1
Slow Fetal Growth & Fetal Malnutrition (P05)	1	0	0	1
Disorders Related to Short Gestation and Low Birth Weight, Not Elsewhere Classified (P07)	1	1	0	2
Bacterial Sepsis (P36)	0	6	0	1
Congenital Malformations, Deformations, & Chromosomal Abnormalities (Q00-Q99)	2	1	0	3
Sudden Infant Death Syndrome (R95)	3	1	0	4
Unintentional Injuries (V01-X59)	1	0	0	1
Total	10	6	0	16

References

[1]Florida Department of Health (2018). Florida CHARTS - Community Health Assessment Resource Tool Set, accessed February 2020 http://www.flhealthcharts.com/charts/default.aspx

[2]World Health Organization Maternal, Newborn, Child and Adolescent Health, https://www.who.int/maternal_child_adolescent/topics/maternal/maternal_perinatal/en/

[3]Centers for Disease Control and Prevention (http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/InfantMortality.htm)

CONCLUSION

While infant mortality is a complex subject that has far-reaching implications for discerning overall population health, it is important to note that while infant deaths for Florida have decreased as a whole, indicators for these smaller communities are much more difficult to discern trends, patterns, and causes due to the volatility of small numbers. These numbers, though volatile due to their small nature, do allude to trends throughout the makeup of these communities. One obvious trend is the overall consistency of the presence of the black- white gap. While it is most prominent in Madison County, its consistent presence in all three counties allude to true health disparities that have a direct impact on birth outcomes. In the literature, the reduction of the overall population's infant and fetal mortality rates while certain groups, specifically those of African American heritage, have no recent or sustained reduction shows a failure to alter health inequities (Hogan *et. al*). The data represents conditions that have perpetuated a difference of the reproductive life course among black and white women in these communities, but the root causes of these differences require some exploration. While alike at first glance, there are distinct characteristics of each county that provide a better understanding of the women and babies served in these communities.

Jefferson County, in summary, is a small county that serves as a bedroom community to the location of jobs in both Leon County, Florida, and Thomas County, Georgia. The only large employers are the school system, the county prison, and an assisted living facility. The residents that live there either commute to work, live on established farms and plantations, or are semi-retired eclectic entrepreneurs. The most at-risk population are the unemployed and underemployed black families, most of which reside within the city limits of Monticello. These families are the target population for maternal and child health interventions and strategies for Jefferson County. Observation of the presented data on Jefferson County allows for conclusions on the relationship between maternal health and infant mortality to help formulate prevention and intervention strategies. Between the years 2009 and 2018, 33% of the black infant deaths in Jefferson County resulted from maternal complications of pregnancy (Table 1.6). Exploration of the characteristics of the birth mother might explain the community trend among the black, female population of Jefferson County, who experience higher infant death rates. This is covered later in the text.

Madison County, whose population is 40% black, 55% white and 6% Hispanic has the most pronounced disparities. Black mothers experience infant loss on average 4:1 than their white counterparts in Madison County. Like Jefferson, most of the infant deaths occurred to mothers who live in the city limits of Madison, with close access to prenatal care at the local county health department. The causes of infant death in Madison County were primarily linked to maternal complications and overall health status. Nearly all of the infant deaths in the last five years in Madison County were neonatal deaths. The association between maternal body mass index (BMI), specifically within the obesity range, and mortality risk is most evident in the neonatal period (Aune *et. al* and Sailhu *et. al*). The literature points to the high neonatal deaths in Madison County as possibly being a result of obesity. Preconception care and counseling are primary interventions needed for the African American maternal population in Madison County.

In Taylor County, infant mortality has a discernable trend downwards for all races. Fetal deaths have also sharply declined. The majority of infant deaths were white, SIDS deaths, unintentional injuries (suffocation) and birth defects for white babies. Causes of death for black babies were related to maternal complications and prematurity. Among all three counties, Taylor County is unique in that its main culprit is a postnatal behavior that is completely preventable. While overall infant mortality rates have been steadily declining in Taylor County, the data identifies unsafe sleep practices as the primary risk among white infants in Taylor County.

Consistent amongst all counties is the pervasive racial disparity in infant mortality. The best long-term solution involves eliminating the chronic stress of all black women by confronting racism and inequality – but this will be difficult and lengthy

work. In the short term, we can better educate African-American women and their health care providers to raise awareness of these issues, we can individualize their care by collaborating with providers to provide personalized monitoring and treatment, and we can continue research into this tragic gap in order to improve the health of African-American women and their babies.

Additional resources
Aune D, Saugstad OD, Henriksen T, Tonstad S. (2014) Maternal body mass index and the risk of fetal death, stillbirth, and infant death: a systematic review and meta-analysis. *JAMA, 311*, 1536-46.

American Sociological Association (2018). Race and ethnicity. Retrieved from http://www.asanet.org/topics/race-and-ethnicity

Collins, James & David, Richard (2007). Disparities in Infant Mortality. American Journal of Public Health. https://ajph.aphapublications.org/doi/10.2105/AJPH.2005.068387

The RACE Project: American Anthropology Association (2016). Health connections: Do genes determine our health? Retrieved from http://www.understandingrace.org/humvar/sickle_01.html

World Health Organization (2017). 10 facts on health inequities and their causes. Retrieved from http://www.who.int/features/factfiles/health_inequities/en/

SOCIAL DETERMINANTS OF HEALTH

It is difficult to understand the impact of infant mortality in the context of health equity without exploring the social determinants of health that are the root causes of health inequities. The significant black-white gap in infant mortality for these communities averages 3:1 consistently over the last multi-years. All other health outcomes, including cancer and diabetes rates, as well as overall morbidity, echoes the repeat theme of racial inequity. Health disparities, or the difference in the incidence and prevalence of health conditions and health status between groups is most commonly used to describe this health issue. These persistent outcome disparities prompted the World Health Organization (WHO) to convene the first Commission on Social Determinants of Health in 2005. Their mission is to "marshal the evidence on what can be done to promote health equity, and to foster a global movement".

Economic Stability	Neighborhood and Physical Environment	Education	Food	Community and Social Context	Health Care System
Employment	Housing	Literacy	Hunger	Social integration	Health coverage
Income	Transportation	Language	Access to healthy options	Support systems	Provider availability
Expenses	Safety	Early childhood education		Community engagement	Provider linguistic and cultural competency
Debt	Parks	Vocational training		Discrimination	
Medical bills	Playgrounds	Higher education			Quality of care
Support	Walkability				

Health Outcomes
Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

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The primary work of that milestone has been to permeate every health system with a foundational understanding of what causes health inequity, the result of the systematic and unjust distribution of the social determinants of health. The inaugural Commission defined the Social Determinants of Health as those life-enhancing resources whose distribution across populations effectively determines length and quality of life. To affect these resources, the Commission made three overarching recommendations: 1) Improve daily living conditions, 2) Tackle the inequitable distribution of power, money, and resources, and 3) Measure and understand the problem and assess the impact of the action.[1]

In fulfilling the Commission's recommendation to measure and understand the problem, national organizations

including the Centers for Disease Control (CDC), and the Health Resources & Services Administration (HRSA) have responded by assessing plans for including activities designed to address the Social Determinants of Health (SDOH) with its funded agencies and across provider disciplines. CDC funds eight specific SDOH-related projects across sectors including housing, education, and transportation. This includes the Partnerships to Improve Community Health (PICH).

The National Association of County and City Health Officials (NACCHO) took on a large project in 2014 to study the contents of county health department's community health assessments (CHA) and community health improvement plans (CHIP) as it relates to comprehensive inclusion of addressing the SDOH.[2]

NACCHO developed the Community Health Improvement Matrix, which measured the CHIPs and CHAs as presented to the Public Health Accreditation Board. This matrix is a bivariate map that includes the level of *prevention* on the vertical axis and the level of *intervention* on the horizontal axis. The prevention levels are those traditional public health categories of primary, secondary, and tertiary with an added category by NAACHO for primordial (preventing the emergence of SDOH).[2]

The intervention levels are those built on the Social Ecological Model and include individual, interpersonal, organizational, community and public policy. This portion of this needs assessment included herein expounds on these levels as designed by the matrix, in the context of maternal and child health.

The Social Ecological Model (SEM) is a theory-based framework for understanding the multifaceted and interactive effects of personal and environmental factors that determine behaviors, and for identifying behavioral and organizational leverage points and intermediaries for health promotion within organizations. While varying programs and agencies use different versions of the model, the basic concept of interventions remain the same. These are measured at the individual, interpersonal, organizational, community, and policy levels.[4]

Individual Level

The core of most SEM models represents the individual who might be affected by the health issue. In the context of this needs assessment, this would be the reproductive-age population and their infants up to age 3. The intervention at this level seeks to increase the individual's knowledge and influence his or her attitudes toward, and beliefs regarding maternal and child health issues.[4] Examples include:

- The benefits of preconception health monitoring
- The intention to plan a family
- The risks and benefits of early and adequate prenatal care
- Access to affordable and convenient services, including clinical and supportive home visiting

Interpersonal Level

The next section of the SEM theory represents prevention activities implemented at the interpersonal level. These activities are intended to facilitate individual behavior change by affecting social and cultural norms and overcoming individual-level barriers. Friends, family, health care providers, and community health workers represent potential sources of interpersonal messages and support.[4]

Organizational Level

This represents prevention activities implemented at the organization level. These activities are intended to facilitate individual behavior change by influencing organizational systems and policies. Health care systems, employers or worksites, health care plans, local health departments, tribal urban health clinics, and professional organizations represent potential sources of organizational messages and support.

Community Level

This represents activities implemented at the community level. These activities are intended to facilitate individual behavior change by leveraging resources and participation of community-level institutions such as the Healthy Start Coalitions.

Policy Level

This level represents activities at the policy level. These activities involve interpreting and implementing existing policy. Federal, state, local, and tribal government agencies may support policies that promote healthy behavior.

In addition to analyzing the data for community and interpersonal level interventions it is also important to understand the issue by assessing the consumer most affected by the issue, or the service provider included in the resource framework. The consumer and coalition member feedback for maternal and child health systems is included in the consumer feedback section of this needs assessment.

Community Level

Income/Poverty
Jefferson, Madison and Taylor Counties are among the poorest in the state of Florida. In Jefferson County, nearly 11.7% of families live in poverty, in Madison County the percentage is nearly twice that at 21.8%, and 16.6% of families in Taylor County fall in this category. These are significantly different than the last review of this data and the trends are increasing in poverty for Madison and Taylor while decreasing significantly for Jefferson. Jefferson's rate of poverty is just slightly higher than the state average of 14.8%[5]

Figure 2.1 Families Below Poverty Level, Percent of Families, Single Year
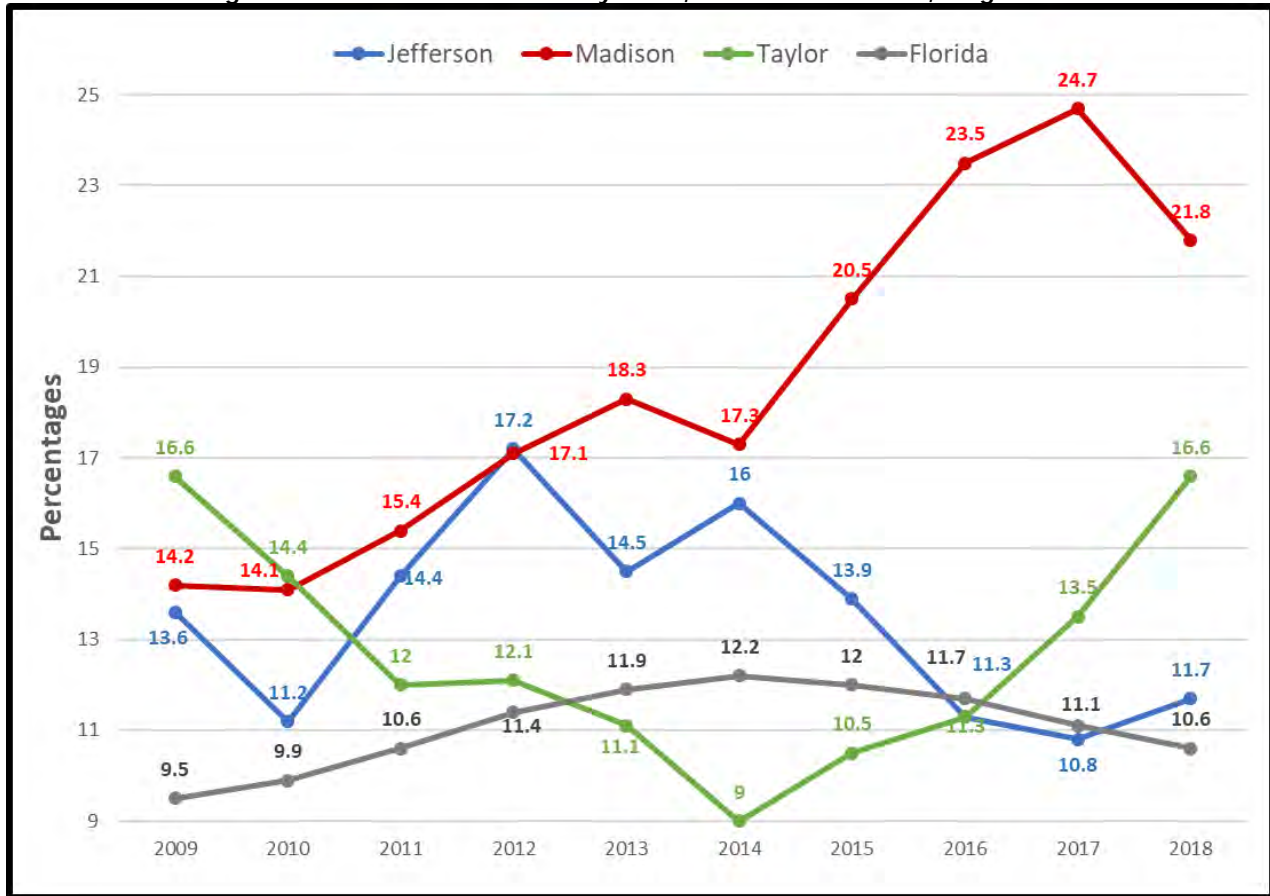
The individual poverty rate for racial and ethnic minorities varies by county. In Jefferson County, 11% of individuals lived below the poverty level in 2018. This included 7% of the total White, non-Hispanic residents, 18% of the total Black, non-Hispanic residents and 13% of the total Hispanic residents. During 2018, 16% of individuals residing in Taylor County lived below the poverty level. This included 13% of the total White, non-Hispanic residents, 24% of the total Black, non-Hispanic residents and 8% of the total Hispanic residents. Of the three counties, Madison County had the highest percentage of individuals living below the poverty level in 2018 at 24%. This included 18% of the total White, non-Hispanic residents, 31% of the total Black, non-Hispanic residents and 25% of the total Hispanic residents.

Figure 2.2

Individuals Below the Poverty Level By Race and Ethnicity, 2018
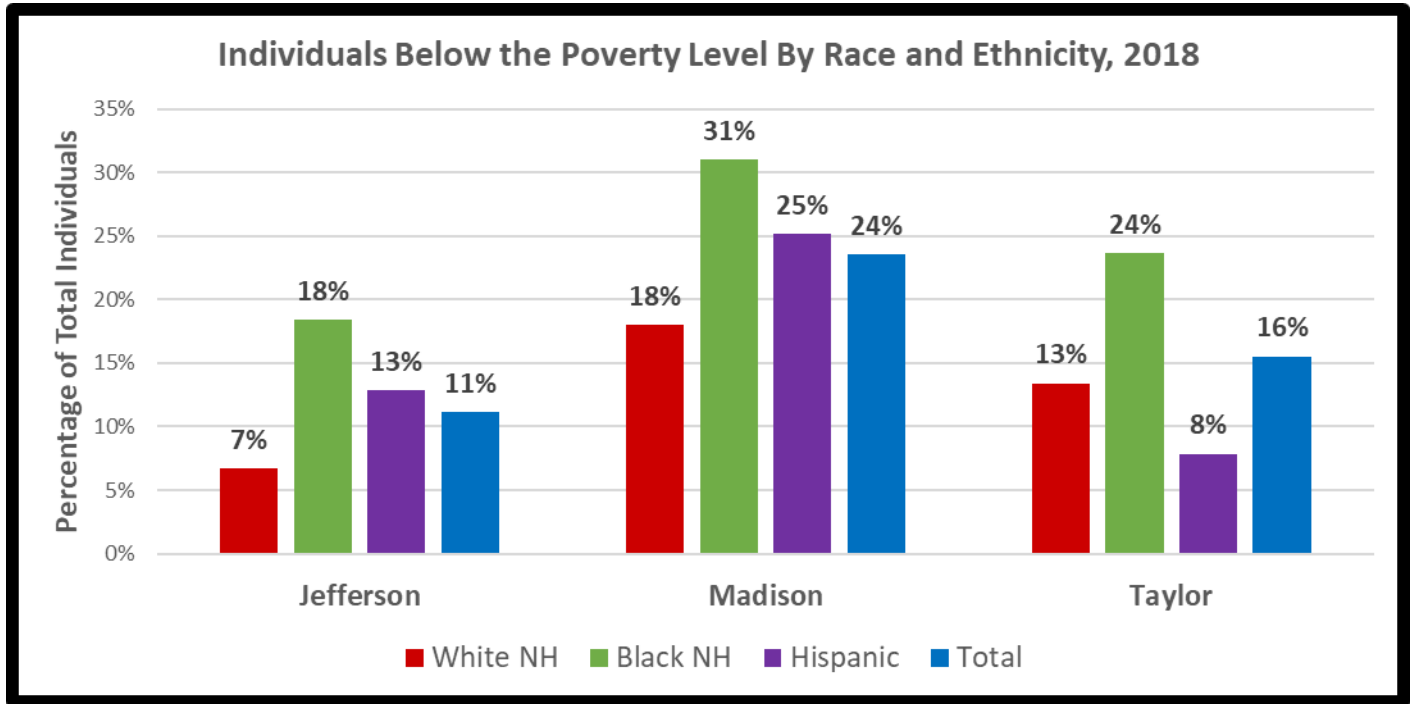
To further explore the income and poverty issues a data set is shown below that reflects the primary indicators other than those listed above. While measuring overall poverty rates over time to assess the change in the community is used for signifying a population shift (Figure 2.1), reviewing data by race is also important when evaluating health inequities (Figure 2.2)

2018 Data[5]	% Families Rec. Food Stamps	% Families Under 100% Poverty w/Female Householder	Median Household Income	Median Value Owner-Occupied Units	% Civilian Labor Force Unemployed	% Individuals Over Age 25 with High School Diploma	% of Population Over 25 with Bachelor Degree[7]
Jefferson	15.8	31	$48,173	$117,900	4.9	33.3	22
Madison	19.9	49.1	$35,509	$87,400	5.7	38.1	13.8
Taylor	21.6	40.8	$36,934	$82,900	6.2	43.3	7.4

In Madison, nearly half of families headed by a female live in poverty. This is an important measurement for social determinants because single parent families below the poverty level cannot afford adequate housing, food, clothing, transportation, day care, and other essential basic needs. A higher percentage of single parent families below the poverty level indicates a greater need for government services and programs. The median household income for Florida for the single year 2018 was $53,267.[5] The average median income for the communities of Jefferson, Madison, and Taylor Counties are significantly below this threshold, especially the poorest of the three counties in Madison where the median income is $35,509. Figure 2.3 depicts the racial disparity in incomes; the median income for black families was almost half of their white counterparts in each county. It is also worth noting that Hispanic median income in Madison was higher than the White counterparts and higher than the county as a whole.

Figure 2.3

Median Income by Race and Ethnicity, 2018[5]
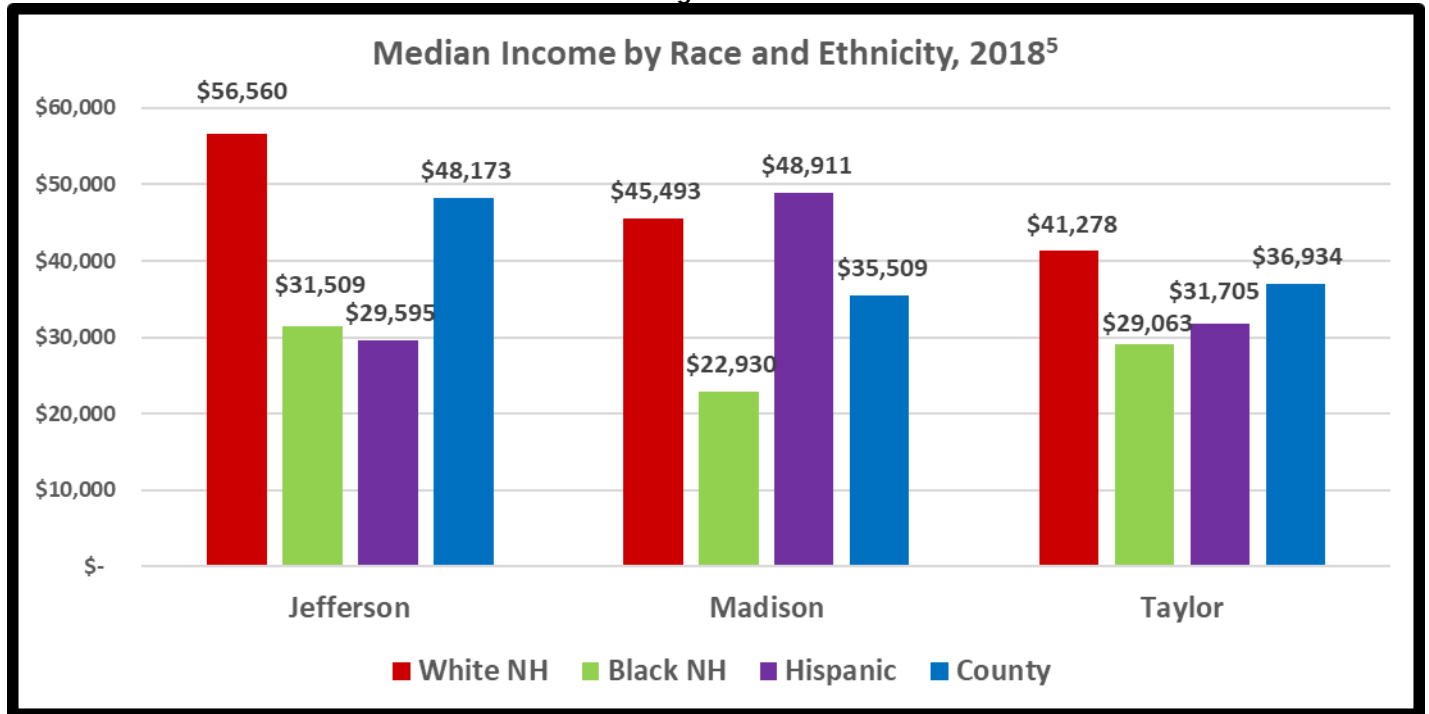
Housing

Home ownership, an important indicator of the distribution of resources, follows the trend for inequity amongst black families in a more dramatic fashion. In Jefferson and Madison Counties, the home ownership ratio is nearly equal across races with ratio of owner-occupied housing being nearly 1 to 1. However, in Taylor County that ratio is 6:1 for whites owning property compared to blacks.[5] The value of housing is not available by race for the Health Equity Profiles by County, but discernable trends based on local knowledge is available, including samples of property values from the local property appraisers. Large-acreage farms with estimated values of $250,000-$1,000,000 are compared with frame, single family dwellings built in the city limits near railroad tracks of $14,000-$20,000, with blacks owning the majority of the latter category. Madison County especially was a feeder community to the larger cotton industry in South Coastal Georgia in the early 1900's. As a result, many shanty-type homes were constructed for employees of the railroad system to support the demand. These homes, with only basic improvements, as well as tiny lots with newer construction exist in small rural towns and house primarily the poorest black populations. This would account for the *number* of homes being close to equal, yet the value gap is more than significant. This is evident in Madison and Jefferson Counties, primary locations for the East-West Rail system across Florida.

Unemployment

Reducing or eliminating unemployment is critical to eliminating poverty, establishing home ownership, increasing access to health care, and improving health equity. The unemployment rates below in Figure 2.4 indicate that black families are nearly *three* times more likely to be unemployed than their white counterparts.[5]

Figure 2.4

Unemployment Rates by Race - 2018
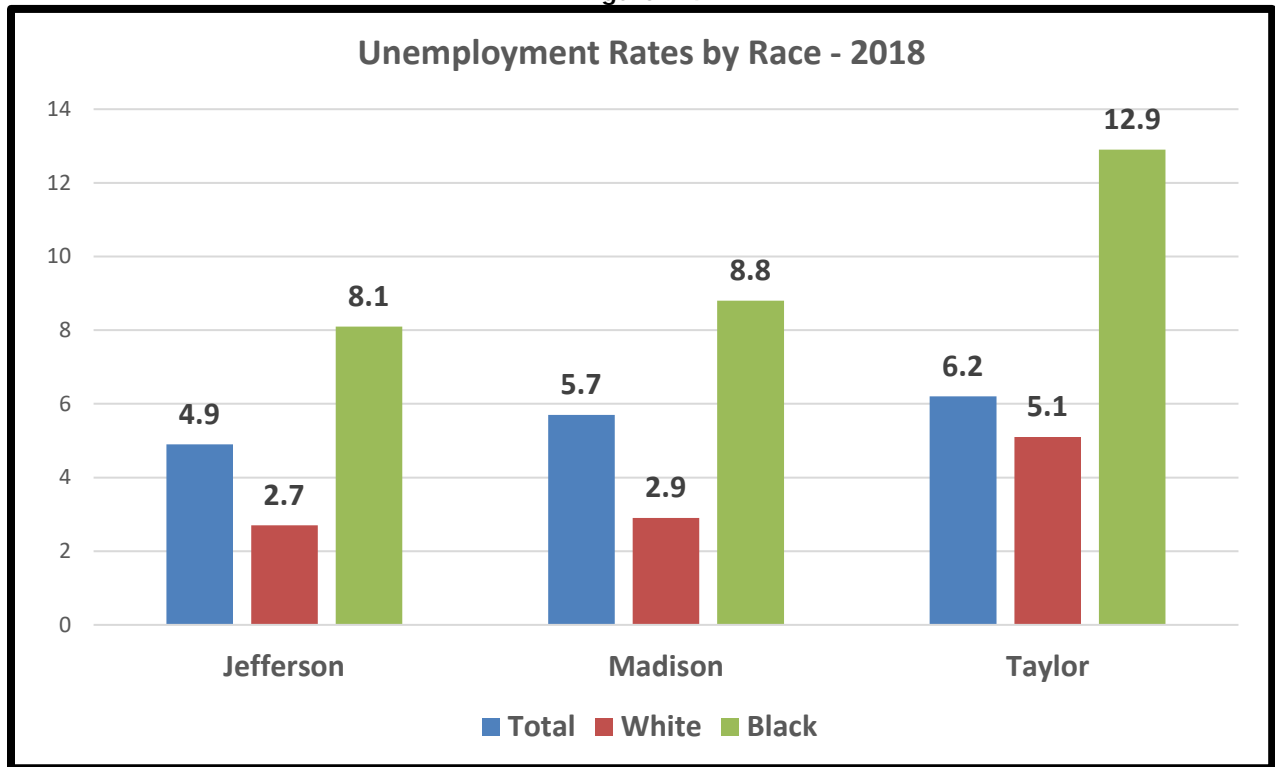
Education

Children born to parents who have not completed high school are more likely to live in an environment that poses barriers to health. Education and education policy are linked to poor health, in terms of cultural values that include education, support its attainment, and reduces stress to impoverished families.[6]

In Florida, 28.8% of individuals over the age of 25 have a high school diploma. For Jefferson County, that number is slightly higher at 33.3%; Madison's rate for *2018* is 28.1%, and Taylor fares better at 43.3%.[7] However, for the same year (2018), for those same group of individuals (>25), those that have a bachelor's degree or higher are 29.2% for Florida as a whole. For the counties of Jefferson, Madison and Taylor Counties, the rates are much lower at 22%, 13.8%, and 7.4% respectively.[7]. For purposes of the social determinants of health, this indicates that community policies do not support a value system where higher education is valued, and a high school diploma does not equate to high paying jobs. Additionally, there may also exist a lack of access to higher education, especially in Taylor County. A 2-year college, namely North Florida College also hosts a four-year university on its campus in Madison County. Taylor County residents may have transportation barriers to access these education opportunities.

Most interesting, however, are high school graduation rates, by race. There are no *significant* racial differences for graduation rates. Blacks graduate from high school in these communities at a greater rate than their white counterparts.[5]

Figure 2.5

Graduation Rates by Race - 2018

County	Total	White	Black
Jefferson	73.4	60	75
Madison	81.3	77.4	82.6
Taylor	87.7	84.3	97

Legend: ■ Total ■ White ■ Black
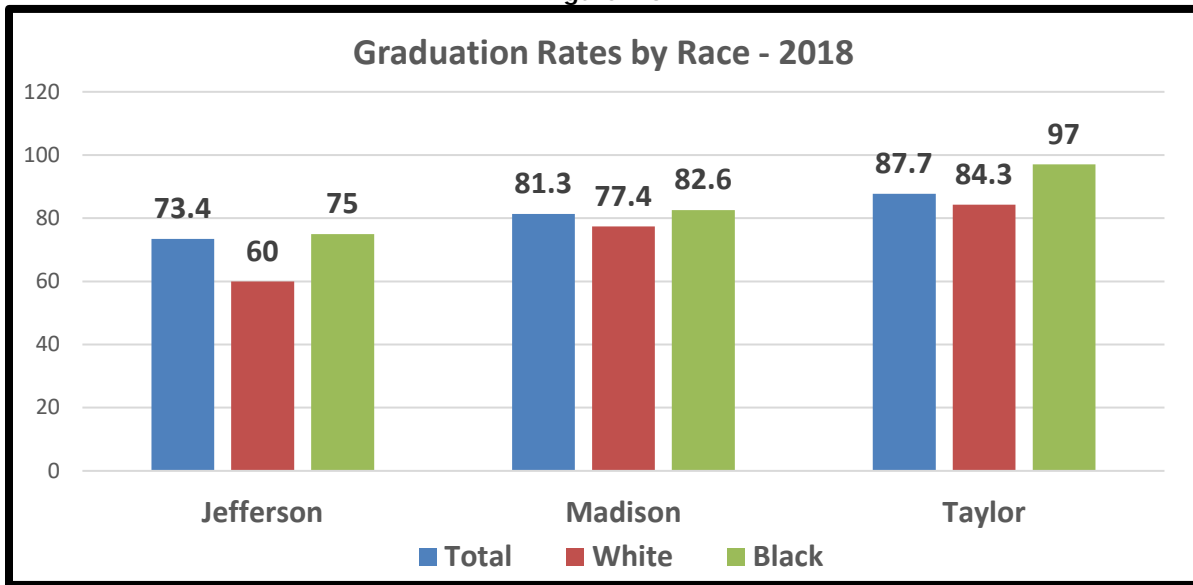
Health Care

Efforts to improve health have traditionally looked to the health care system as the key driver of health and health outcomes. The Affordable Care Act (ACA) increased opportunities to improve health by expanding access to health coverage and supporting reforms to the health care delivery system. These include expansion of health care to the working poor through Medicaid expansion, increased resources for home visiting services for pregnant women through the Maternal, Infant, Early Childhood Home Visiting Initiative (MIECHV), and standardization of minimum coverage through an accessible insurance marketplace. However, these important federal initiatives have had little impact on access to health care in the rural communities of Jefferson, Madison and Taylor Counties because Florida has chosen not to expand Medicaid, and because these families do not benefit from MIECHV programs in these counties, which are funded based on substantiated volume of cases.

The Women, Infants, and Children (WIC) program is available in the communities of Jefferson, Madison and Taylor Counties, and is substantially under-utilized. WIC is a nutrition program for women who are pregnant or breastfeeding or who have recently been pregnant, infants and children under age 5. WIC provides no cost access to healthy foods, nutrition education and counseling, breastfeeding support, referrals to health care, immunizations, and community services.

WIC is an income-based program where participants meet the criteria if they are currently receiving Medicaid, Temporary Cash Assistance (TCA), or Food Assistance, or not receiving public assistance and meeting the same income guidelines.

The percent of WIC eligibles *served* is compared to the total number of WIC Eligibles as a county/WIC local agency performance indicator. This includes pregnant and postpartum women and children ages 0-4. In Jefferson County, only 63.7% of the population eligible for WIC are receiving the service; in Madison County 53.7% receive services, and in Taylor County 102% receive WIC.[7] While the Taylor eligibles served data for 2018 is likely an error or a duplication of women choosing an alternate pickup location for WIC services other than their county of residence, the numbers are traditionally higher in Taylor County for WIC utilization.

Health care providers for these counties are in high demand and great shortage; there are no birthing facilities nor practicing OB-GYN services in these counties. The local health departments contract for low to moderate risk prenatal care so that women have access to these services locally. This is well utilized in Madison and Taylor Counties. The availability of providers is presented below. This data represents 2018 data in Florida Charts, however, the procurement system for this information may be flawed; there is a well-established pediatric practice in both Taylor and Madison County and family practitioners that are most likely included in the physician category.

Provider Rates (per 100,000 population)[7]			
	Jefferson	Madison	Taylor
Family Practitioners	13.5 (N=2)	5.1 (N=1)	4.4 (N=1)
Pediatricians	6.7 (N=1)	0	0
Physicians	53.9 (N=8)	15.4 (N=3)	35.3 (N=8)
Dentists	13.5 (N=2)	20.5 (N=4)	17.7 (N=4)

Neighborhood

Just as conditions within our homes have important implications for our health, conditions in the neighborhoods surrounding our homes also can have major health effects. Social and economic features of neighborhoods have been linked with poor health outcomes and risk factors for chronic disease, mental health, injuries, violence and other important health indicators. More obvious examples include pollution, garbage, and structural damage, but where someone lives also contributes to their motivation for exercise, propensity for seclusion based on crime, and participation in risky behaviors such as alcohol and drug use. The opposite is also true; neighborhoods with walking areas, playgrounds and close proximity to healthy foods encourages healthy behaviors.[8]

According to the Environmental Public Health Tracking Program, the percentage of individuals in 2019 within a half-mile access to public recreation spaces and parks is 45.19% in Florida, compared to 4.16% for Jefferson County, 8.72% for Madison County, and 17.82% for Taylor. Although this is due largely in part to the sparseness and low population density, Jefferson County fares significantly worse in this category. Access to healthy food, also measured as the percent of the population within ½ mile of source is 1.51% for Jefferson, 3.43% for Madison and 2.63% for Taylor County.[6]

Crime rates calculated by the Florida Department of Law Enforcement and reported in the Florida CHARTS system[7] are measured per 100,000 population. The crime index, also population-based using the Federal Bureau of Investigation's Uniform Crime Reporting System, measures the major violent and property crimes. Since the last review of this data in 2014 the trend in crime rate has decreased significantly in Madison County, by 41%, while increasing in Taylor County by 48%.

	Total Crime Index Counts 2014	Total Crime Index Counts 2018	% Index Change	Total Crime Rate per 100,000 2014	Total Crime Rate per 100,000 2018	% Rate Change
Jefferson	321	355	10.6%	2,199.1	2,410.9	9.6%
Madison	556	330	-40.6%	2,880.4	1,699.3	-41%
Taylor	503	722	43.5%	2,193.4	3,243.8	47.9%

Interpersonal Level

Obesity and Smoking Rates

While obesity during pregnancy is discussed in detail later in the text, obesity in the general population is indicative of lifestyle choices perpetuated by poverty. Poor nutrition is often a direct result of both the lack of availability of healthier choices, but also an economic decision where less healthy foods are cheaper and more readily available. Examples of this include the existence of "dollar" stores whose top sellers are potato chips for fifty cents, and limited frozen, prepared foods. The absence of fresh produce and meats in the sparsely populated rural communities force continued support for these low-cost merchants where families often maximize their resources under the misguided idea of thrift over nutrition.

In Florida, 63.2% of adults are overweight or obese. Jefferson County is slightly higher than the state average at 68.1% while Madison County is 65.7%. In Taylor County, however, 70.9% are overweight or obese. (BRFSS, 2016)[9]

In Florida, 15.5% of adults are current smokers, compared with 11.5% for Jefferson, 16.2% for Madison, and 21.6% for Taylor County. (BRFSS 2016)[9]

Conclusion

Like most rural communities across the nation, these counties have severe health disparities amongst the black population. The factors of social determinants of health (SDOH) have a large influence. Based on our understanding of SDOH and comparing them to the facts observed within these communities there is no surprise concerning the subpar black maternal outcomes. There are high rates of poverty across all three counties among the black population with blacks making $10,000 less annually on average than their white counterparts. Some of these disparities are not exclusively related to race, but rather a mixture of contributing factors that include poor access to healthcare that is familiar to rural communities all across the United States. JMT is significantly vulnerable because there are no birthing facilities, no maternal- fetal medicine specialists or newborn intensive care units within these counties. In regard to SDOH there are also no inpatient substance abuse services, limited outpatient substance abuse providers, limited mental health services, limited access to fresh food sources and a novice economic infrastructure.

The characteristics of the three communities have an influence on the health of the women in the communities on both the personal, interpersonal and community level. It is believed that interventions outside of the healthcare system are likely to have the greatest effect on health disparities as those contributing factors are present well before the issues are brought to the attention of medical providers[3]. Healthy Start (HS) provides a health-social system of care within the JMT community that provides the intervention the literature supports. HS provides interventions conducted at the community level and promotes the engagement of the healthcare system and social services as a support to the overall health of women before, during and after pregnancy as a method to tackle birth disparities in JMT. The most significant solutions observed in this needs assessment is the focus on preconception health among black women in all three counties. Preconception health is linked to poor birth outcomes and the characteristics of the birth mother that is linked to those outcomes. Science supports that a women's health prior to her pregnancy holds immense control over the success of her pregnancy, and the life-course projection of the fetus.

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[3]Centers for Disease Control. Social Determinants of Health: Know What Affects Health, accessed February 2020
http://www.cdc.gov/socialdeterminants/cdcprograms/index.htm

[4]Centers for Disease Control. Social Ecological Model (SEM), accessed February 2020
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[5]Socioeconomic Indicators made available by US Bureau of the Census, American Community Survey, via Florida Health Charts.

[6] Florida Environmental Public Health Tracking Program, accessed February 2020
https://www.floridatracking.com/healthtracking/report.htm?i=1010&s=1#reportProfileTab

[7]http://www.flhealthcharts.com/charts/default.aspx, provided by the Florida Department of Health, Division of Public Health Statistics & Performance Management

[8]Robert Wood Johnson Foundation, Commission to Build a Healthier America. (September 2008). Where We Live Matters for Our Health: Neighborhoods and Health ISSUE BRIEF 3.

[9]Behavioral Risk Factor Surveillance System (BRFSS), Florida Charts accessed February 2020.

Birth Outcomes

Improving the well-being of mothers, infants, and children is an important public health goal for Florida and our nation - their well-being determines the health of the next generation.[1] Poor birth outcomes have large-scale societal impact - emotionally, socially and economically. In the United States - the annual societal economic cost including medical, educational, and lost productivity associated with preterm birth alone is estimated at $26.2 billion.[2]

Hospital charges for babies with a primary diagnosis of prematurity/low birth weight delivery average $75,000 per child as compared to the cost for babies without complications at $1,300 per child.[3] The costs to the family, child and society are exponential throughout a child's lifetime and cannot be measured only in dollars.

Premature birth

For the counties of Jefferson, Madison and Taylor, birth outcomes are significantly and consistently poorer than most areas in Florida; prematurity rates are indicative of these negative trends. A *premature birth* is a *birth* that takes place more than three weeks before the baby is due. In other words, a *premature birth* is one that occurs before the start of the 37th week of pregnancy. Normally, a pregnancy usually lasts about 40 weeks. Although advances in medicine have dramatically increased survival rates for preemies, every baby born premature has a higher risk of long-term and chronic lung problems, arterial hypertension and type 2 diabetes, all of which are predictors for accelerated aging, cardiovascular disease, and early death.[5&6]

For the three-year rolling average of preterm birth 2016-2018[4], roughly 10% of all babies born to Florida mothers are born before the 37th week of gestation, or prematurely. In Jefferson, the statistics mirror the state at 10.2%, in Madison the rate is slightly higher at 12.4% and 10.8% in Taylor County. However, babies can be born at a healthy weight even if they are slightly premature, so Florida has developed the data set for premature with low birth weight, which is more telling of trends in birth outcomes.

For the rolling three-year average 2016-2018, 7.4% of babies born to residents of Madison County are born prematurely with low birth weight, in Jefferson County that percentage is 7% and 6.4% for Taylor County. The numbers are almost double for black babies, at 12.1% of all black babies in Madison County are born premature with low birth weight, compared to just 3.2% for white babies. In Jefferson County 9.7% of all black babies are premature with low birth weight, compared to 5.2% for whites. In Taylor County, the disparity narrows, with 7% of black babies born premature with low birth weight, compared to 6.2% for whites.[4]
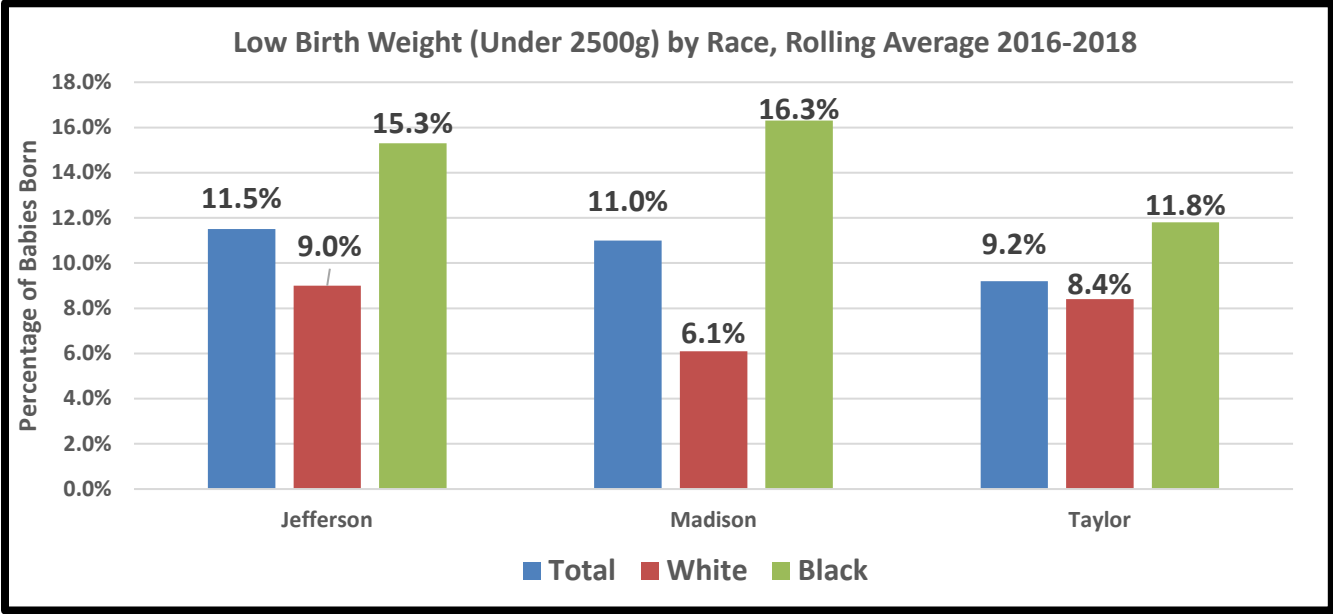
Low Birth Weight, Very Low Birth Weight

Although there is a strong correlation between low birth weight and premature birth, the two outcomes can also be exclusive of each other. An infant born late preterm can have significant nourishment and be at a healthy weight and a low-birth weight infant can be born at full gestational age. Low birth weight most often, however, is caused by prematurity but can also be caused from inadequate growth of the fetus, issues around the mother's health status including smoking and periodontal disease, birth defects, and environmental toxins.[2] Low birth weight is defined as less than 5 ½ lbs. (2,500g) and very low birth weight is 3 lbs. 5 oz. (1,500g).

The smallest babies in Florida *per capita* are born in these counties. In Jefferson County, 11.5% of babies are born

weighing below 2,500 grams and 11% of Madison County babies are underweight. Taylor County fares better with only 9.2% of babies identified as low birth weight, closer to the state average of 8.7%. Following the trend for prematurity, black rates are much higher. In Madison County, 16.3% of black babies are born below a healthy weight while the rates in Jefferson County are 15.3%. Taylor County's black low birthweight rate is just slightly lower at 11.8%.[4]

Figure 3.1 below depicts the significance of the black white gap in low birth weight. In Madison County, nearly three times more black babies than white are born below a healthy weight. Note there were no Hispanic low birth-weight babies noted for these counties during 2016-2018.

Figure 3.1

Low Birth Weight (Under 2500g) by Race, Rolling Average 2016-2018

Low birth weight is a persistent issue in these counties. The multi-year trends (Figures 3.2, 3.3 and 3.4) for Jefferson, Madison and Taylor Counties depict low birth weight as a chronic problem, one that is trending in the least favorable direction for Jefferson County and one that is consistently much more pronounced than the rest of the state in Madison County.

Figure 3.2 Live Births Under 2,500 Grams (Low Birth Weight), 3-Year Rolling Rates, Jefferson County and Florida
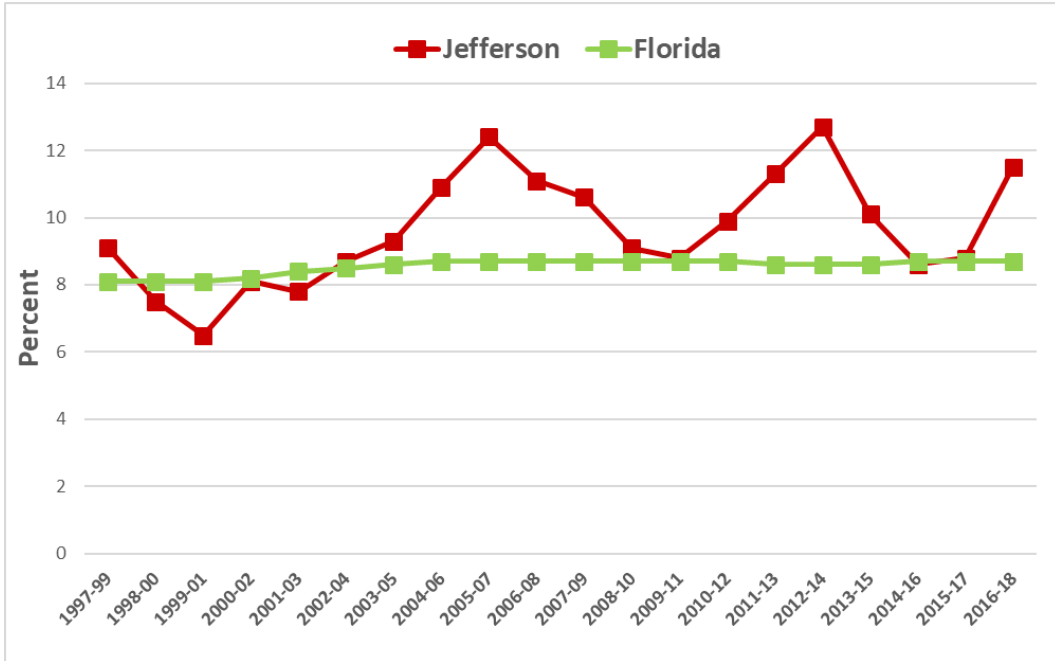
Figure 3.3 Live Births Under 2,500 Grams (Low Birth Weight), 3-Year Rolling Rates, Madison County and Florida
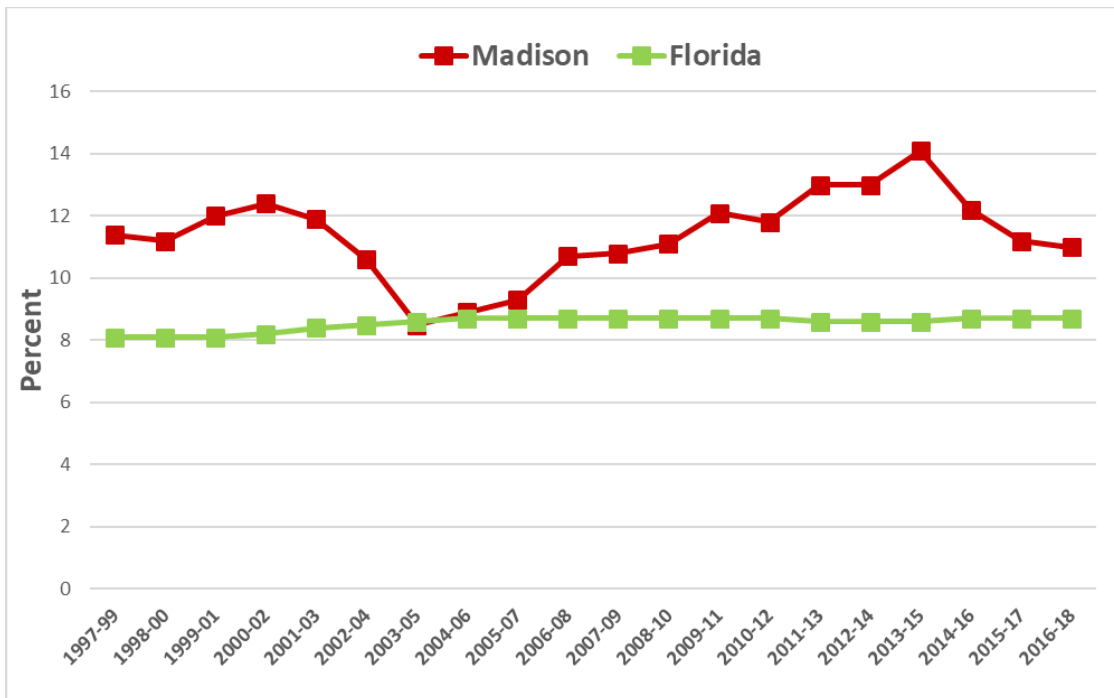
Figure 3.4 Live Births Under 2,500 Grams (Low Birth Weight), 3-Year Rolling Rates, Taylor County and Florida
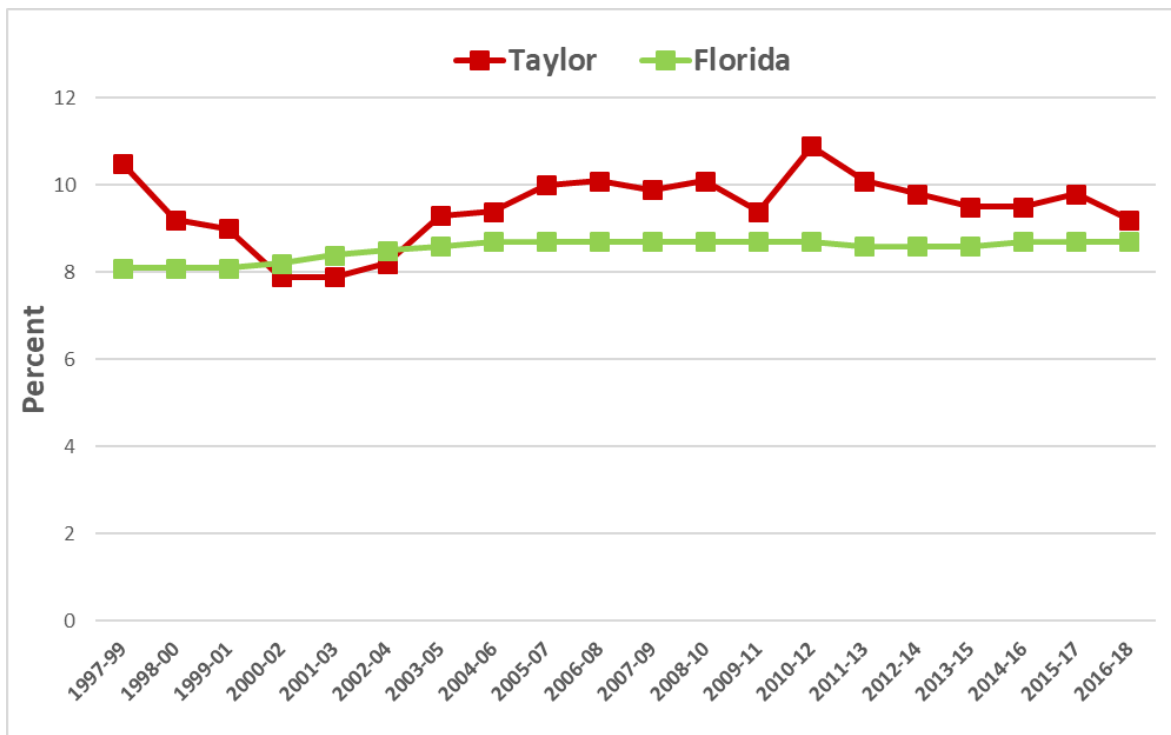
Very low birth weight, or infants born below 1,500 grams is also a significant indicator of poor outcomes in these counties. Madison County fares worst in the state for the three-year rolling average 2016-2018 at **3.8**% of all babies born in Madison County are very low birth weight. Jefferson and Taylor are 1.9% and 1.7%, closer to the state average of 1.6%.[4] Of the 21 babies born in this category in Madison County for these years, 15 were black for a black very low birth weight percentage of 6.3%, the fifth highest in the state.[4] Note there were no Hispanic very low birth-weight babies noted for these counties during 2016-2018.

Preconception/Interconceptional Health Status

Preconception care is defined as a set of interventions that aim to identify and modify biomedical, behavioral, and social risks to a woman's health or pregnancy outcome through prevention and management. Certain steps should be taken before conception or early in pregnancy to have a maximal effect on health outcomes. Preconception care is more than a single visit to a health-care provider and less than all well-woman care, as defined by including the full scope of preventive and primary care services for women before a first pregnancy or between pregnancies (i.e., commonly known as interconception care).

Preconception care is recognized as a critical component of health care for women of reproductive age. The main goal of preconception care is to provide health promotion, screening, and interventions for women of reproductive age to reduce risk factors that might affect future pregnancies.

Improving preconception health and pregnancy outcomes will require more than effective clinical care for women. Changes in the knowledge and attitudes and behaviors related to reproductive health are required to improve

preconception health. Health promotion campaigns aimed at reducing smoking, misuse of alcohol, intimate partner violence, obesity, human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS), reduction of vaccine-preventable diseases, and exposure to occupational hazards are among those intentional population health efforts to change these behaviors. However, the majority of U.S. adults are not aware of how these and other health and lifestyle factors influence reproductive health and childbearing. Therefore, the preconception status of a woman prior to pregnancy is a reliable predictor of birth outcomes.

SMOKING DURING PREGNANCY

The dangers of tobacco use are widely known including contributing to lung disease and cancer, and heart disease. Smoking *during pregnancy* causes additional health problems, including premature birth (being born too early), certain birth defects, and even infant death.

Women who smoke during pregnancy are more likely than other women to have a miscarriage. Smoking can cause problems with the placenta—the source of the baby's food and oxygen during pregnancy. For example, the placenta can separate from the womb too early, causing bleeding, which is dangerous to the mother and baby.

Smoking during pregnancy can cause a baby to be born too early or to have low birth weight—making it more likely the baby will be sick and have to stay in the hospital longer. A few babies may even die. Smoking during and after pregnancy is a risk factor of Sudden Infant Death Syndrome (SIDS). SIDS is an infant death for which a cause of the death cannot be determined. Babies born to women who smoke are more likely to have certain birth defects, like a cleft lip or cleft palate.[8]

Smoking rates during pregnancy have declined overall for Florida, but remain consistently higher in these counties, especially Taylor County. For the three-year rolling average for 2016-2018, all counties in this assessment had smoking rates during pregnancy higher than the state average of 4.8%. Jefferson had the lowest smoking rate of the three areas at 7.8%. However, Taylor's three-year rate for smoking during pregnancy was 17.1%, one of the highest in Florida. In Madison County, 11.9% of pregnant women smoked for 2016-2018 [4]. Figures 3.5, 3.6 and 3.7 reflect the trends over time, each with recent improvements in smoking rates.

Figure 3.5 Resident Live Births to Mothers Who Smoked During Pregnancy, 3-Year Rolling Rates, Jefferson County & Florida
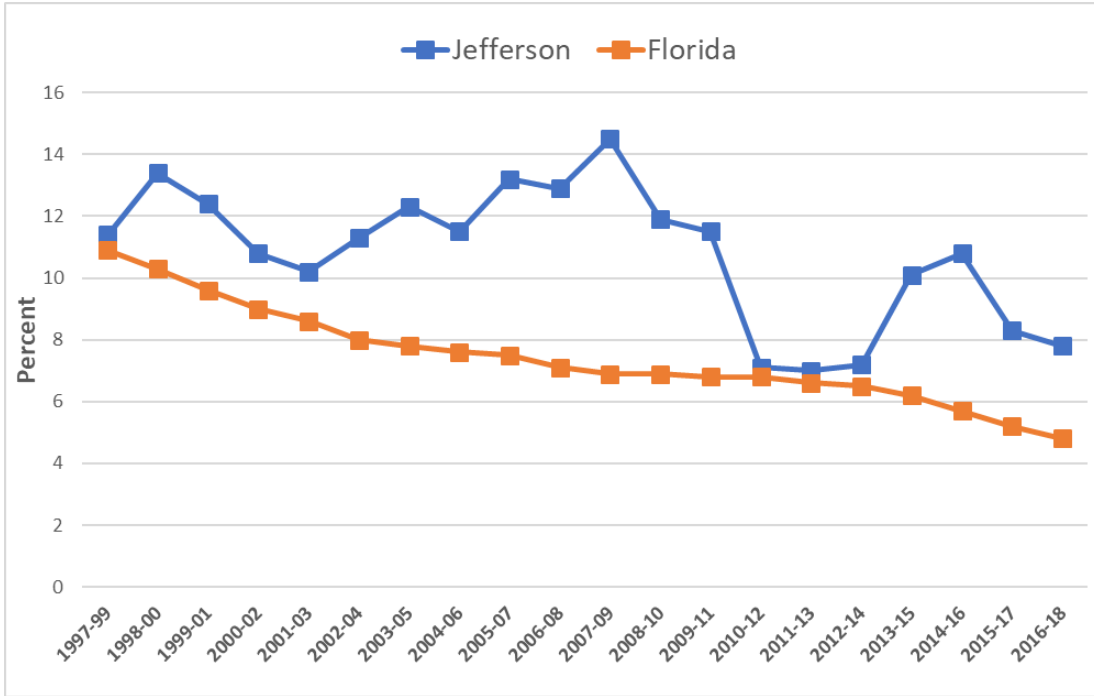

Figure 3.6 Resident Live Births to Mothers Who Smoked During Pregnancy, 3-Year Rolling Rates, Madison County & Florida
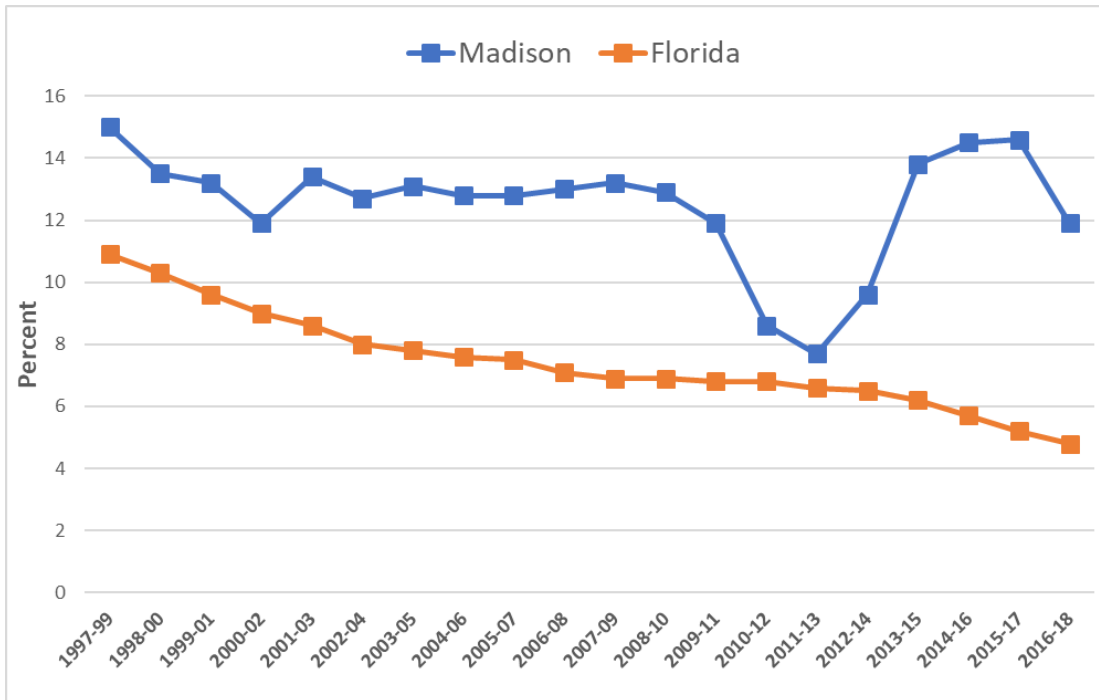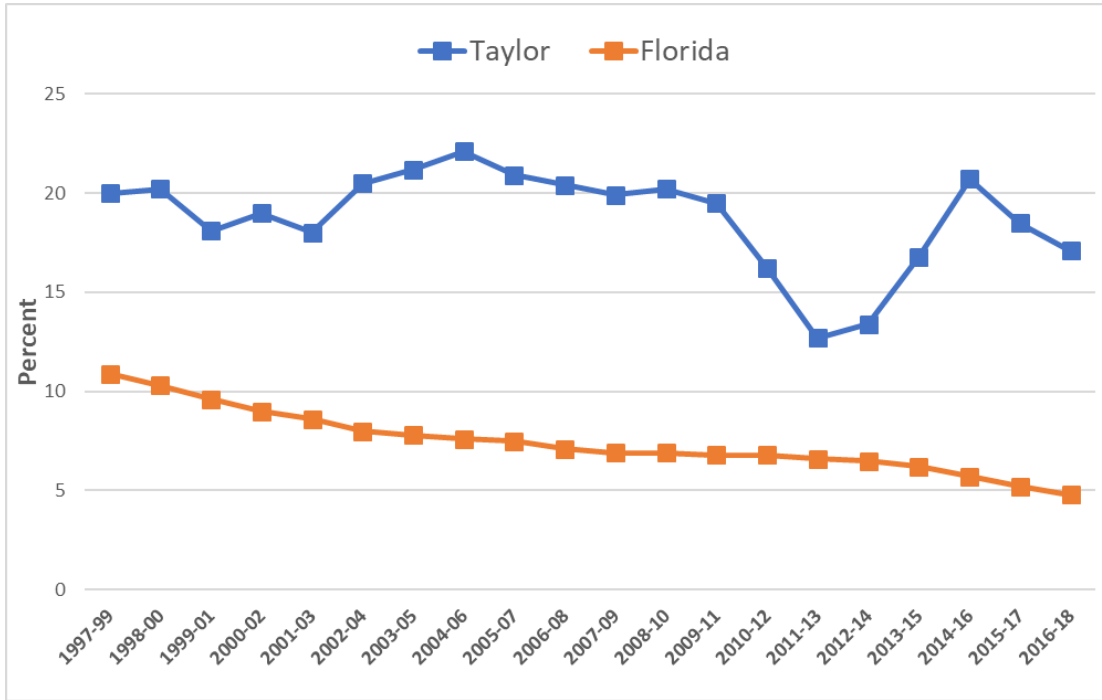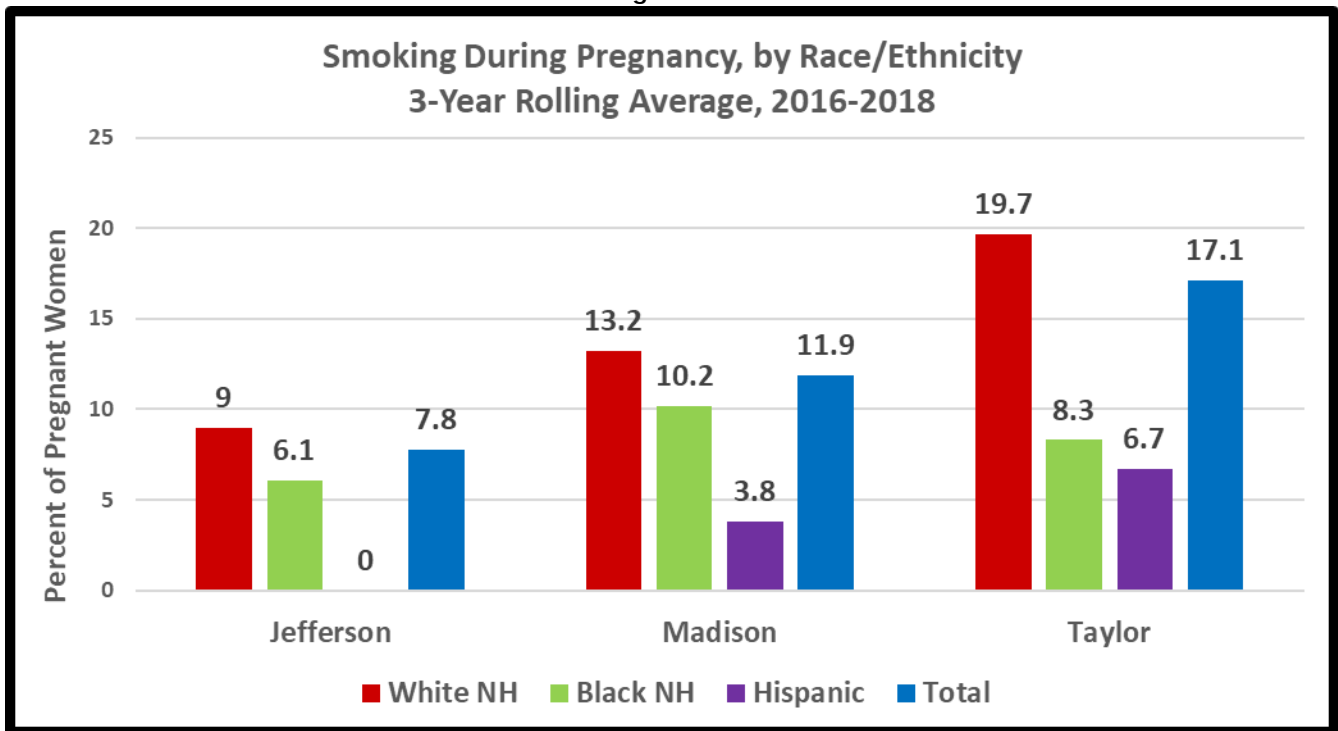
Figure 3.7 Resident Live Births to Mothers Who Smoked During Pregnancy, 3-Year Rolling Rates, Taylor County & Florida

Smoking during pregnancy, however, is *less* prevalent among black and Hispanic pregnant women than in whites, as shown in Figure 3.8.

Figure 3.8

OBESITY AND OVERWEIGHT DURING PREGNANCY

The amount of weight gained during pregnancy can affect the immediate and future health of a woman and her infant. The population demographics of women who become pregnant have changed dramatically over the past decade; more women are overweight or obese at conception. The Institute of Medicine (IOM) defines overweight women as those with BMI of 25–29.9. Body Mass Index (BMI) is calculated as weight in kilograms divided by height in meters squared. The IOM defines obesity as a BMI of 30 or greater.[9]

Being overweight or obese during pregnancy increases the risk of various pregnancy complications. Obese women are more likely to have diabetes that develops during pregnancy (gestational diabetes) than are women who have a normal weight. Women who are overweight or obese are at increased risk of developing pregnancy complications characterized by high blood pressure and signs of damage to another organ system, often the kidneys (preeclampsia).

Obesity can also create labor problems, increase the likelihood of elective and emergent C-sections, and increases the risk of infections. Prenatal care is often expanded for this overweight and obese population, including careful weight gain monitoring, additional and delayed ultrasound, additional testing for gestational diabetes and more frequent prenatal care visits. Those pregnant women at the highest rates of obesity are considered to have an adverse pregnancy, which increase costs significantly.

Taylor County has some of the highest rates of obesity at the time pregnancy occurred, at 37.2%, compared to 25.1% for Florida for the 2016-2018 three-year rolling average. Jefferson's county rate is 36.6% and Madison is 33.8%.[4] While the rates have increased for Florida and the nation as a whole, rates of obesity at the time pregnancy occurred has continued to climb, especially in Taylor County. Figures 3.10, 3.11 and 3.12 depict the alarming trends in each county over time.

Figure 3.9 shows that the issue of obesity during pregnancy is elevated for the black population and in the Hispanic population, with the exception of Madison County.   The numbers of Hispanic pregnant women overall are small in these three counties; however, the percentage of those who were obese at the time of pregnancy was high. In Taylor County nearly twice as many black women were obese at conception compared to their white counterparts.[4]
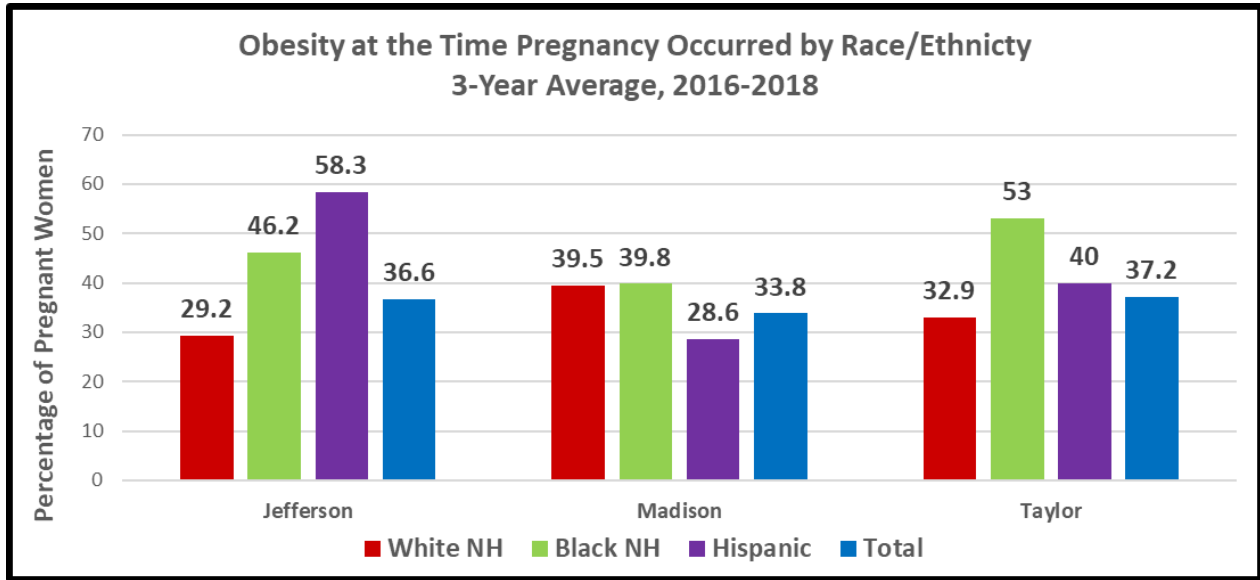
Figure 3.9

Obesity at the Time Pregnancy Occurred by Race/Ethnicty
3-Year Average, 2016-2018

Figure 3.10 Births to Obese Mothers at time Pregnancy Occurred, 3-Year Rolling Rates, Jefferson County and Florida
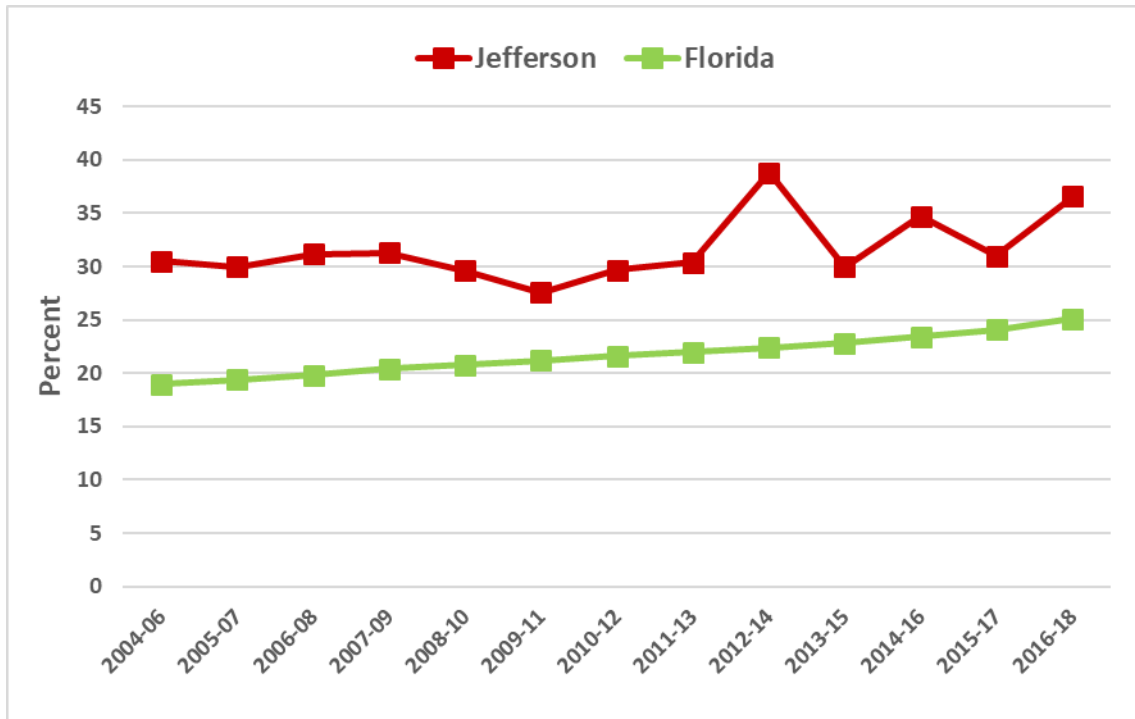
Figure 3.11 Births to Obese Mothers at time Pregnancy Occurred, 3-Year Rolling Rates, Madison County and Florida
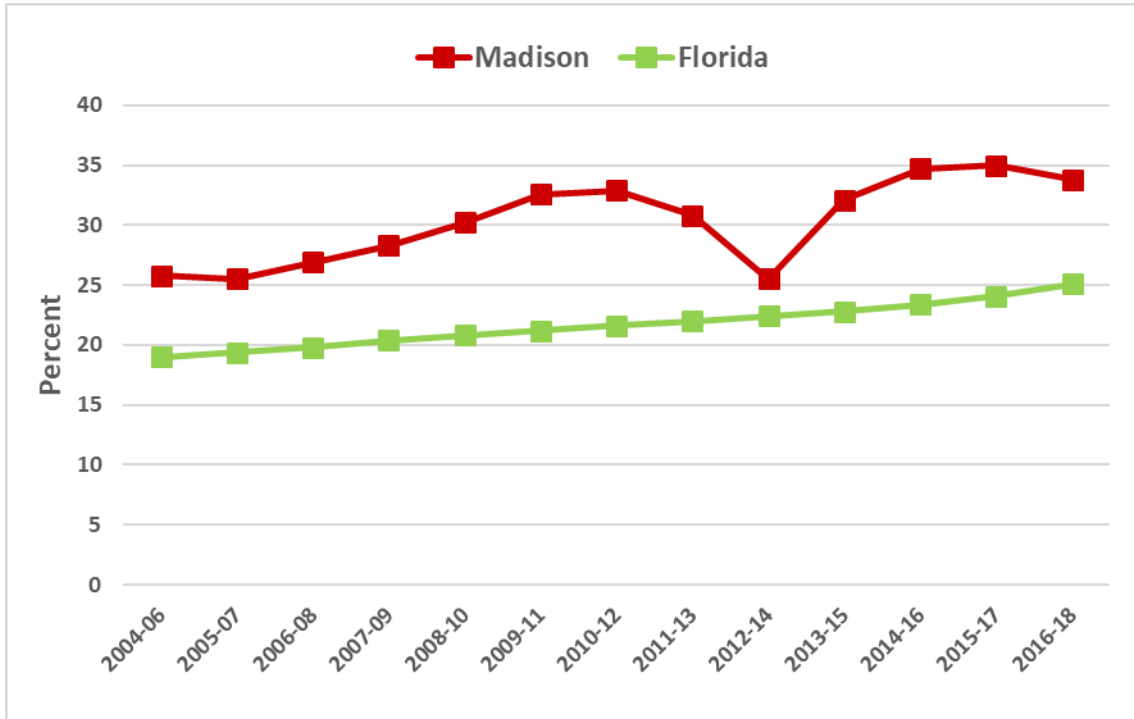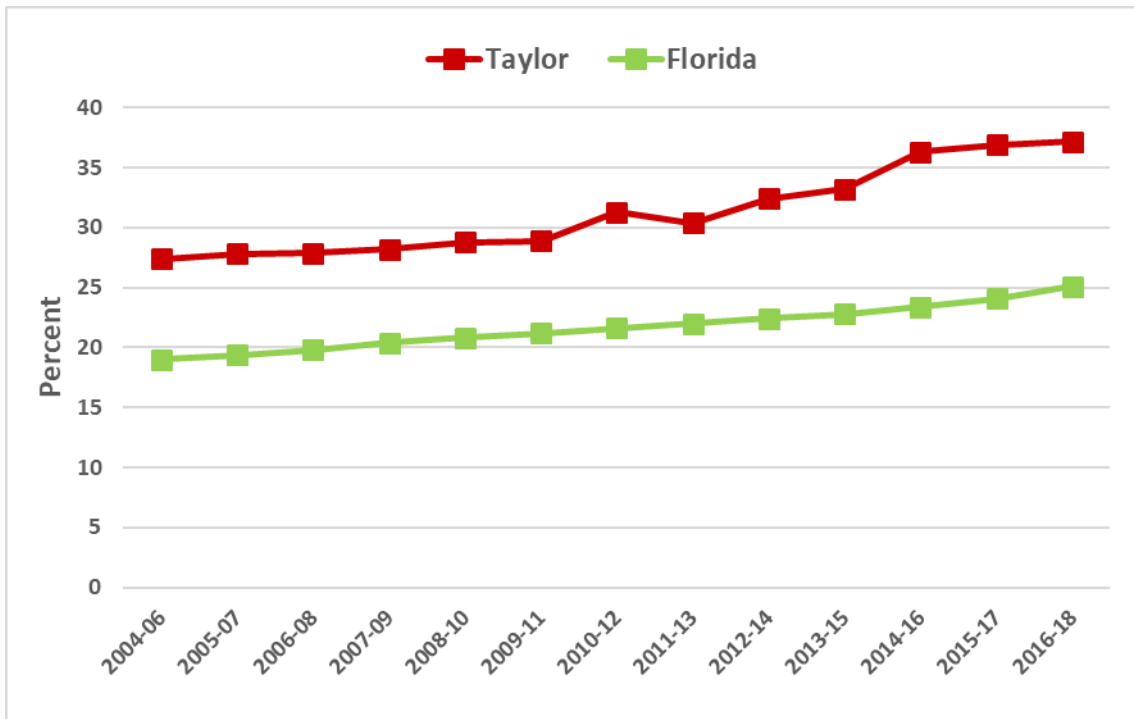

Figure 3.12 Births to Obese Mothers at time Pregnancy Occurred, 3-Year Rolling Rates, Taylor County and Florida

PREGNANCY INTERVALS <18 MONTHS

Family planning is essential to the health and general well-being of both mother and child (and father). An integral part of family planning is pregnancy spacing, or the amount of time between each pregnancy. The Centers for Disease Control and Prevention (CDC) has conducted extensive research on optimal baby spacing. The ideal interval is 18 months between birth of the first child and conception of the second (or subsequent).[10]

Compared with mothers that conceived during the ideal interval, those who became pregnant again within six months had a 30 to 40 percent greater chance of producing premature or undersize babies. Babies conceived too soon have problems because the mother is recovering from vitamin depletion, blood loss and reproductive system damage from the prior birth, and elevated stress from caring for a newborn.

This is a significant issue for Jefferson County, which has a high percentage of births with shorter intervals at 41.2%. Madison and Taylor County have only a slightly better interval rate at 36.5% and 33.6%, respectively (3-yr rolling average 2016-2018).[4] When reviewing the data by race, however, it is important to note that the increase in shortened intervals is more predominant for whites, similar to the smoking trends. Also note that 4 of the 7 births to Hispanic women in Taylor County had a pregnancy interval less than 18 months, or 57.1%. (Figure 3.13)

Figure 3.13
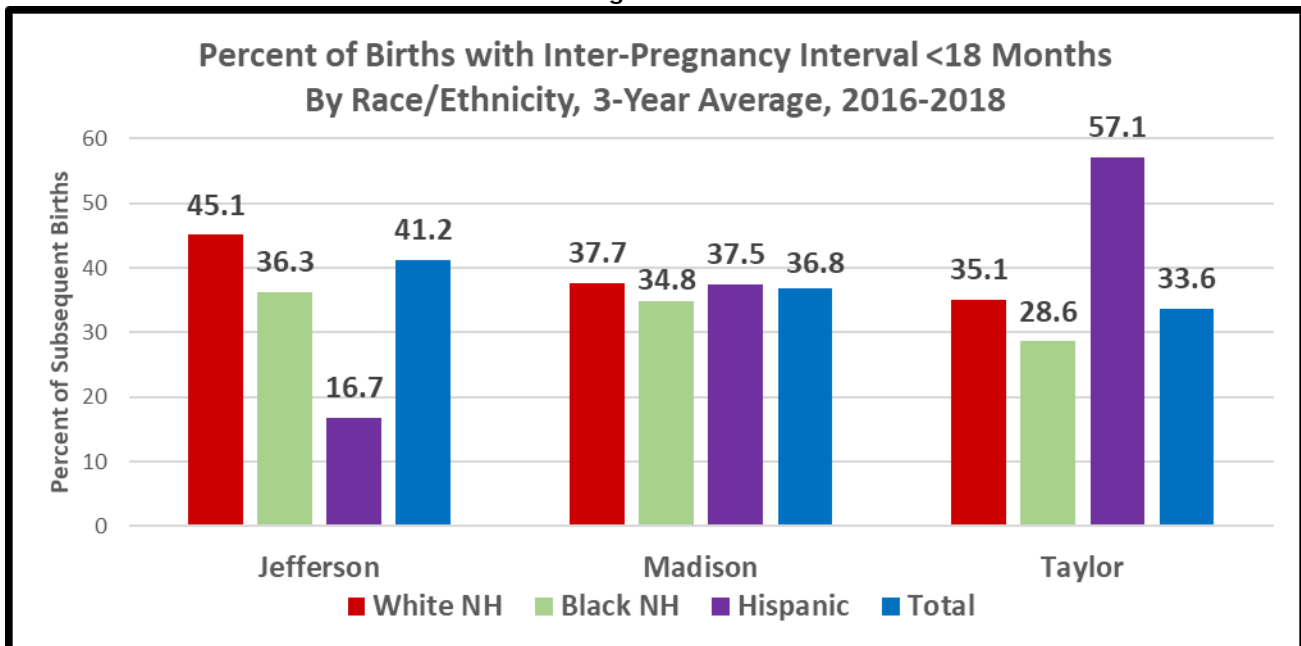
The long-term trends for births with intervals less than 18 months for Madison and Taylor Counties follow the trend for Florida, which has remained static for multi-years, with a slight decline over the last five years. Jefferson, however, is increasing in shorter birth intervals while the state is improving. (Figures 3.14, 3.15, and 3.16)

Figure 3.14 Births with Inter-Pregnancy Interval < 18 Months, 3-Year Rolling Rates, Jefferson County and Florida
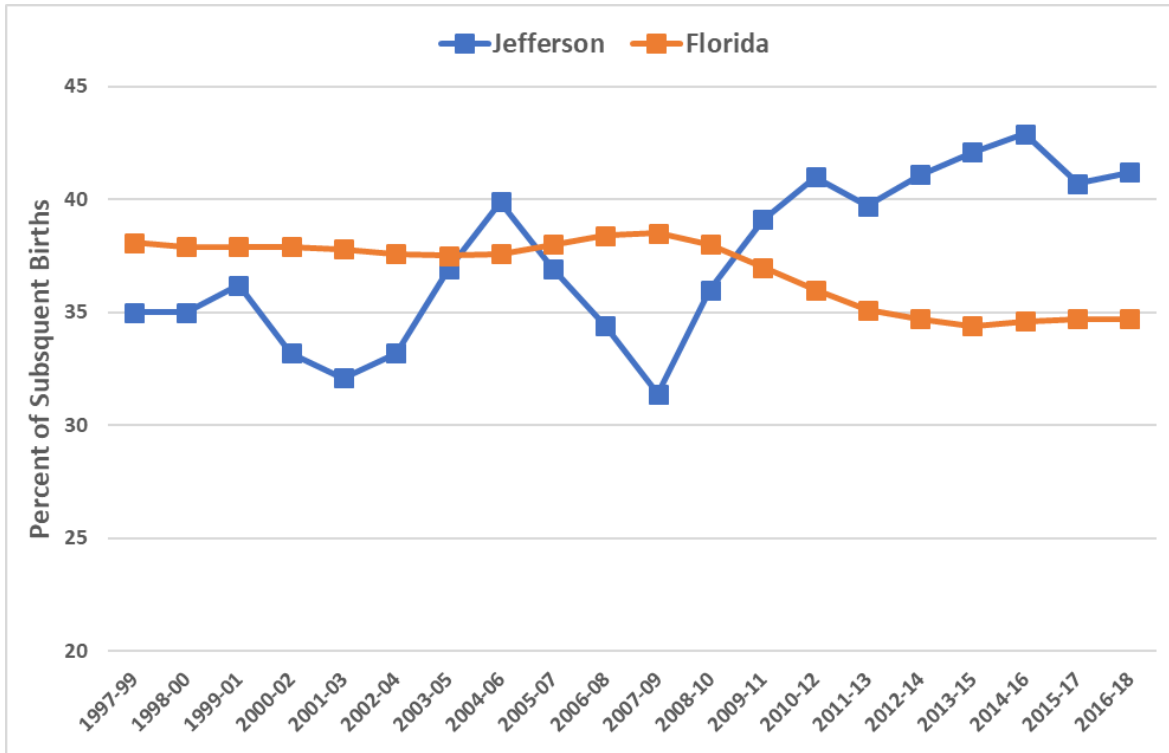

Figure 3.15 Births with Inter-Pregnancy Interval < 18 Months, 3-Year Rolling Rates, Madison County and Florida
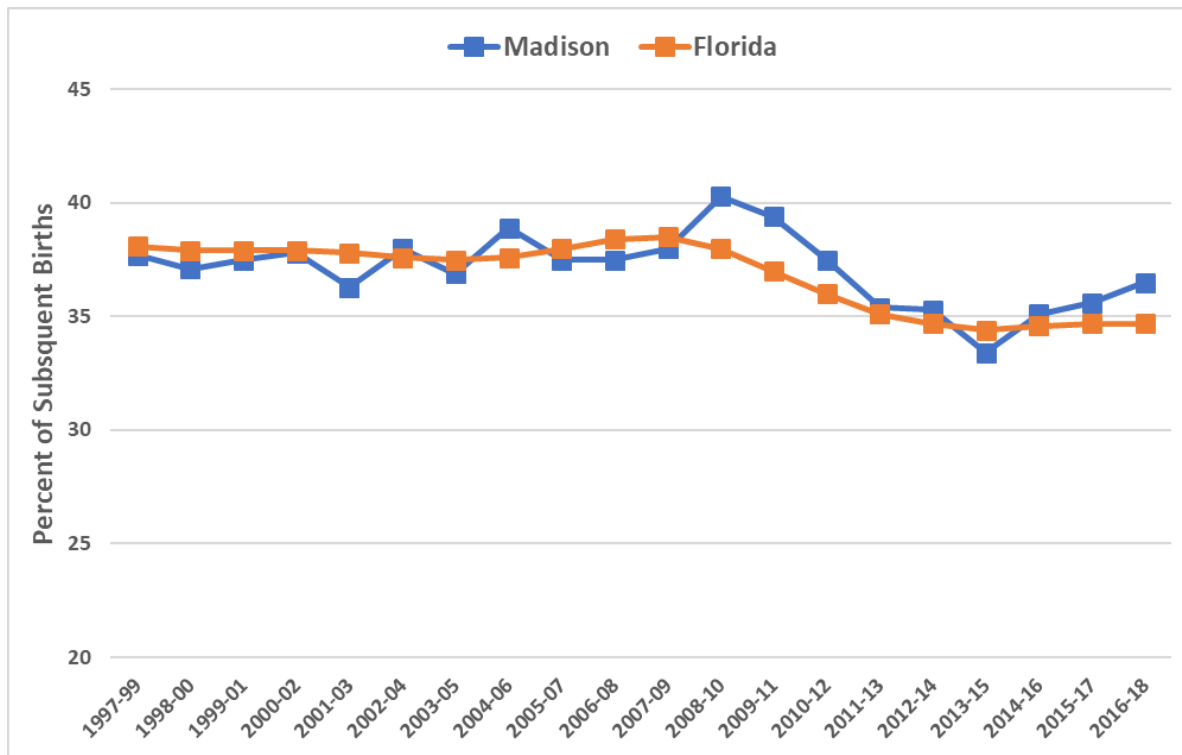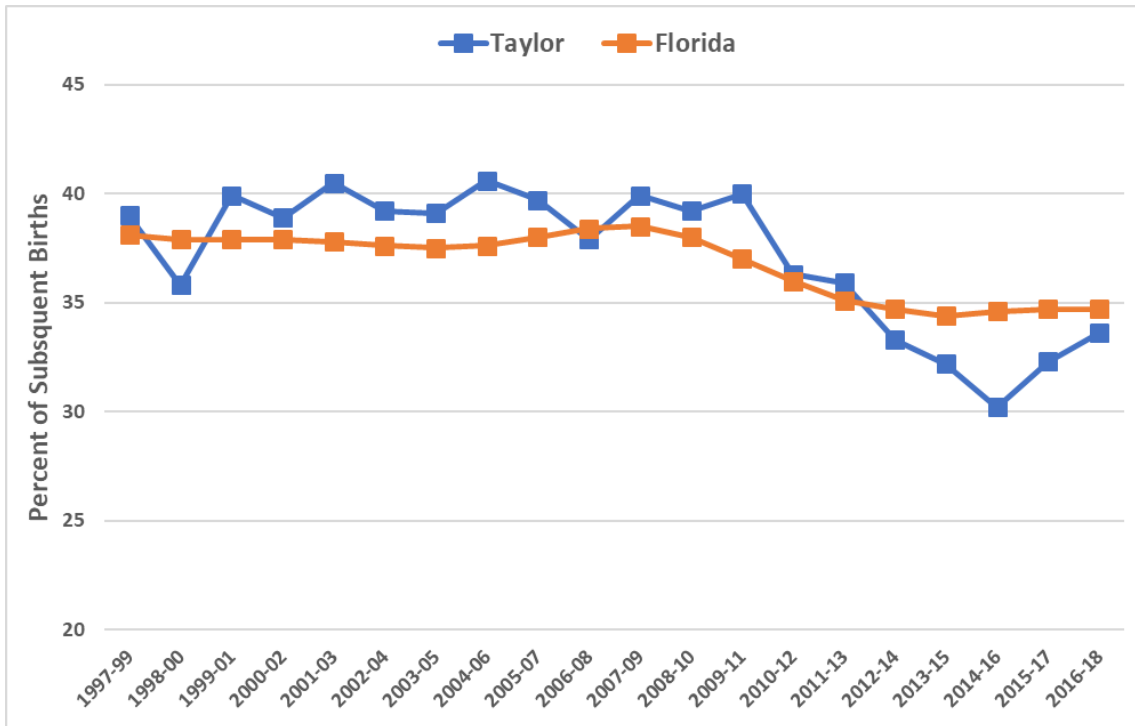
Figure 3.16 Births with Inter-Pregnancy Interval < 18 Months, 3-Year Rolling Rates, Taylor County and Florida

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Conclusion

Although premature birth is the leading cause of infant death, there are many contributing factors that prevent a full gestational period of 40 weeks. These factors range from medical diagnoses such as infections and incompetent cervix, premature rupture of membranes, hypertensive disorders, substance abuse, and even unknown causes of preterm labor. Early elective cesareans are also included in the category of late preterm births. While common, preterm labor does not have a known cause, but there are prevalent trends that point to risk factors. Many of these risk factors are directly associated with the preconception health status of the mother and characteristics during pregnancy, which includes nutritional status, pregnancy history, present pregnancy characteristics, psychological characteristics and adverse behaviors. In the literature, there is a consistent racial disparity among women in regard to preterm birth. In developed counties, like the US and UK, women who identify as black, African-American and Afro-Caribbean are more likely than their white counterparts to deliver premature babies— specifically because of preterm premature rupture of the membrane, also known as PPROM (Goldenberg et. al). From the data on premature birth rates for JMT, especially the black prematurity rates, it is substantially a greater problem for the black community. Of the counties in Florida with the highest rates of blacks, Jefferson and Madison County have the highest rate of premature babies born to black mothers. In these two counties, the premature birth outcomes amongst black babies are a reflection of the literature. This disparity remains unexplained due to numerous confounding variables and inconsistencies once a hypothesis is established. Also significant is the overall decline in premature birth for all mothers in Taylor County. This alludes to an ideal characteristic or protective factor that is consistently changing this birthing outcome for the better in Taylor County. There are maternal risk factors that have a higher association with preterm births and linking these characteristics to the black women in Madison and Jefferson County is the best means of action to identify risk-specific intervention.

The health outcomes of the youngest and smallest members of society are a good indication of the health of a population. The data reflects that the tri-county area of Jefferson, Madison and Taylor counties has some of the worst low weight birth outcomes in the entire state of Florida. As aforementioned, prematurity primarily causes Low Birth Weight (LBW) and Very Low Birth Weight (VLBW) in infants, so it is no surprise that Jefferson and Madison Counties have non-ideal outcomes in this category based on the data presented. While preterm birth is the leading cause, LBW and VLBW is also a result of intrauterine growth restriction (IUGR), which is a diagnosis given to growth-restricted fetuses and defined by the American College of Obstetrics and Gynecology (ACOG) as estimated fetal weight of less than 10th percentile for gestational age. IUGR is the second leading cause of perinatal death and IUGR babies have higher risks of disorders like respiratory distress syndrome and hemorrhaging (Suhag and Berghella). Maternal factors that cause IUGR include short inter-pregnancy interval, race and low socioeconomic status (Suhag and Berghella). This supports the notion that family planning as well as other preconception components play a role in the LBW and VLBW outcomes.

Smoking is associated with a plethora of health concerns throughout all age groups, but smoking is especially detrimental to birth outcomes. Tobacco usage in all forms is linked to poor birth outcomes to include preterm delivery, LBW and VLBW, IGUR and neonatal death (Cnattingus et al and Vardavas et. al). Tobacco usage has been on a decline across the nation and the state of Florida due to effective prevention and intervention strategies from national and local public health agencies. Despite efforts, there are still areas where tobacco usage among pregnant women remain prevalent. In JMT, the smoking rate is consistently above the state average and, alarmingly, in Taylor County the rate is twice the state average. Incidence of white women who smoke during pregnancy is more prevalent than their black counterparts, especially in Taylor County. There is an apparent gap in services to women of birthing age in all three counties. Evidence suggests that almost half of women who smoked prior to pregnancy continue to smoke during their pregnancy and may not believe that there is merit in smoking cessation during the pregnancy (Knopik 2009). This may be the case in Taylor County as 26% of all women identified as "smoker" based on Florida Charts 2018 data. Service delivery has to focus on cessation efforts among pregnant women throughout JMT. Research supports that early tobacco cessation during pregnancy significantly modifies adverse pregnancy outcomes and even results in birth outcomes comparable to women who never smoked during their pregnancies (Knopik 2009 and Vardavas et. al). This is the message that needs to make it to the target population to make efforts for intervention more successful.

The consequences of obesity on population health is well known and linked to conditions like heart disease, diabetes and hypertension. These same concerns remain true for maternal obesity. Obesity during pregnancy can result in a plethora of medical complications for both the mother and the fetus, but specifically women with a higher than normal body mass index (BMI) are linked to preterm labor, low birth weights and stillborn deliveries (Athukorala et. al and Dohetry et. al). These women were also more likely to receive a planned or emergency caesarian section due to health concerns like preeclampsia or complications during the delivery process, respectively (Athukorala et. al). In women labelled as overweight and obese prior to pregnancy there is an increase in chronic medical conditions before, complications during the pregnancy and at birth (Dohetry et al.). The preconception health of the mothers was linked to black infant deaths in all three of the JMT counties (Figures 1.3, 1.4, 1.5). The data shows that the rates of overweight and obese women in these counties is an alarming trend when compared to the state averages, specifically in Taylor County. There are reasons to believe that this factor is a significant component to the overall health of the mother. This supports the notion that target-specific services on preconception health counseling is essential amongst this population and should be included in further planning on service delivery.

There is a greater understanding on the consequences associated with the pregnancy intervals also known as baby spacing. The shorter the interval between the delivery of one baby and the conception of another has a strong correlation to LBW and VLBW babies (Eijsden et. al). The accepted hypothesis is that nutritional depletion and stress on the mothers' body from the labor and delivery process results in high-risk pregnancy and poor birth outcomes for the subsequent infant due to lack of restoration (Zhu 2005 and Eijsden et. al). The data reflects that this is a concern among all of the women in the tri-county area, but specifically a large concern for Jefferson County. The data concerning baby spacing among all three counties alludes to a need in family planning in service delivery.

Understanding of the birth outcomes provides a snapshot analysis of the overall health of the maternal and infant population. In theory, it would provide for retrospective view on the needs of women of birthing age. This is not easily identified in the tri-county area. The birth outcomes amongst Jefferson, Madison and Taylor Counties reinforces the idea that these communities hold exceptionally different populations. There is no consistency among all three counties to identify a common poor birth outcome and then plan accordingly. However, there are trends that can be observed in the data that suggest that the characteristics of the birth mother prior to conception has a major impact on the birth outcomes. All of the discussed birth outcomes are identified in the literature to stem from behavior patterns of the mother before the pregnancy including BMI, smoking habits, and utilization of family planning services. One common theme amongst the literature consulted on birth outcomes is that the best means of action for addressing birth outcomes is services geared towards preconception health counseling.

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Additional resources

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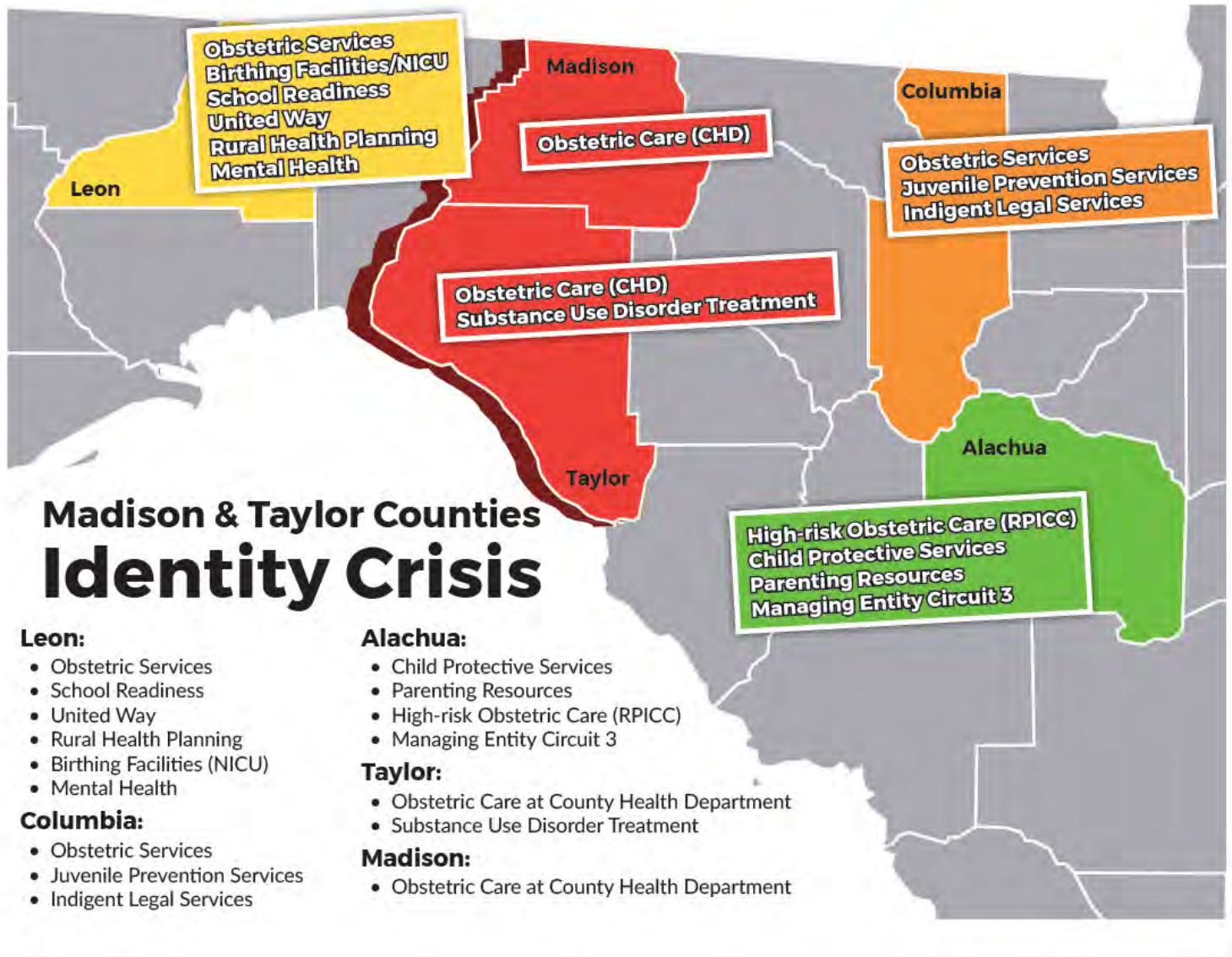
PRENATAL CARE

Prenatal care, for the most general understanding, is the medical interventions intended to reduce the incidence of low birth weight and other adverse birth outcomes. The notion of medical interventions throughout pregnancy only became widely accepted in this century as a value to both mother and child.[1] However, a significant amount of research from diverse disciplines on the topic of prenatal care expands the research scope to include those interventions that are nutritional and educational in nature to define a more holistic approach to prenatal care and its efficacy. Much of the controversy of the effectiveness of prenatal care in preventing poor birth outcomes is rooted in the notion of defining dosage. Life course theorists suggest that women who seek early prenatal care for planned pregnancies are those with higher incomes, have a higher value on education and personal health, and pass these values within their own culture to their offspring, perpetuating health for the infant and across his life course as well. Therefore, dosage is not the only scientific measure of prenatal care efficacy.[3]

The most widely known and practiced prenatal interventions to optimize birth outcomes among practicing obstetricians are 1) psychosocial (aimed at smoking and other health behaviors); 2) nutritional (aimed at adequate weight gain and chronic disease management); and 3) medical (aimed at general morbidity).[2] System level approaches like the Florida Healthy Start system impact the accessibility and appropriateness of services for the entire target population. These ancillary activities include interventions based on risk factors, health promotion, social services, and case management and provide varying approaches and benefits. The data on the collective impact of systems of care and the correlation to the success of prenatal care in reducing poor birth outcomes hinges on the idea that prenatal care is a more unified concept than currently acknowledged.[2]

Prenatal care has not been demonstrated to improve birth outcomes conclusively. However, policymakers deciding on funding for prenatal care must consider these findings in the context of prenatal care's *overall* benefits across the life course of the individual and potential cost-effectiveness. Cost-effective reductions in low birth weight deliveries are proven to correlate with adequate prenatal care, but have proven difficult to establish as single contributors of good health.[4]

In the rural communities of Jefferson, Madison and Taylor Counties, there are no private obstetric providers practicing within the counties and no birthing facilities. These communities primarily depend on Leon County (Tallahassee), with a few births delivered in Columbia (Lake City) and Alachua (Gainesville) for deliveries, high risk obstetric care, and in-patient perinatal specialty care. However, the county health departments in each county provide low to moderate risk obstetric care services. This is highly utilized in Madison County, as the furthest point from any birthing facility in Florida at 110 miles round trip. Due to the unique geographical location of the two eastern counties, their residents are not clearly identified in one or another medical community, often further fragmenting the supportive services associated with prenatal care. The graphic below demonstrates that limited services are available at long distances in each direction for both Madison and Taylor Counties.

Figure 4.1

Obstetric Services
Birthing Facilities/NICU
School Readiness
United Way
Rural Health Planning
Mental Health

Madison

Columbia

Obstetric Care (CHD)

Obstetric Services
Juvenile Prevention Services
Indigent Legal Services

Leon

Obstetric Care (CHD)
Substance Use Disorder Treatment

Alachua

Taylor

High-risk Obstetric Care (RPICC)
Child Protective Services
Parenting Resources
Managing Entity Circuit 3

Madison & Taylor Counties
Identity Crisis

Leon:
- Obstetric Services
- School Readiness
- United Way
- Rural Health Planning
- Birthing Facilities (NICU)
- Mental Health

Columbia:
- Obstetric Services
- Juvenile Prevention Services
- Indigent Legal Services

Alachua:
- Child Protective Services
- Parenting Resources
- High-risk Obstetric Care (RPICC)
- Managing Entity Circuit 3

Taylor:
- Obstetric Care at County Health Department
- Substance Use Disorder Treatment

Madison:
- Obstetric Care at County Health Department

For the purposes of measuring prenatal care in this needs assessment, the Kotelchuck index for adequate measurement of care is used. According to the Florida Department of Health, prenatal care (PNC) refers to the medical care that women receive during pregnancy. These health care visits provide benefits to both the mother and baby and are used to monitor the progress of a pregnancy. To achieve the greatest benefit for both the mother and baby, it is recommended that women begin PNC visits in the first trimester of pregnancy or as soon as pregnancy is suspected or confirmed. Early PNC allows health care providers to identify potential problems as early as possible so they can be prevented or treated before they become serious. During the first PNC visit, the health care provider conducts a physical exam, a pelvic exam, takes a complete health history, and orders blood tests. Follow-up visits are less detailed, and focus on monitoring the baby's growth, the mother's weight gain, and her blood pressure as well as addressing any questions or concerns the mother may have. Ensuring that all women

receive early and adequate PNC is a top maternal and child health priority. Public health programs emphasizing access to and utilization of early PNC services exist that focus on those women least likely to receive early PNC including teens, women with less than a high school education, and Black and Hispanic women.[5]

One of the strengths of the communities of JMT is the utilization of the local health departments for services. This results in higher rates of early entry into care. For the three-year rolling average 2016-2018, Florida's rate for early (1st trimester) prenatal care was 77.4%. Jefferson was slightly lower than the state average at 75.9% while Madison and Taylor rates are 75.3% and 77.9% respectively.[5] Even though Jefferson County has closer proximity to Leon County service providers, the county has also experienced a slight increase in the Hispanic population which may account for less than expected early care rates. The slight shift in demographics is more evident when reviewing rates over time. Figures 4.3, 4.4, and 4.5 reflect the trends over time, with rates falling below 80% in the last five years for all three counties. Figure 4.2 shows the early access rates by race. There are no significant differences between races that access early prenatal care, other than the significant difference in Hispanics in Jefferson County.

Even though there are limited resources within these communities for prenatal care, the infrastructure of *obstetric services located at the county health departments* is the safety net for ensuring early access in these communities. Otherwise, the trend lines in Figures 4.3-4.5 would likely be inverted.
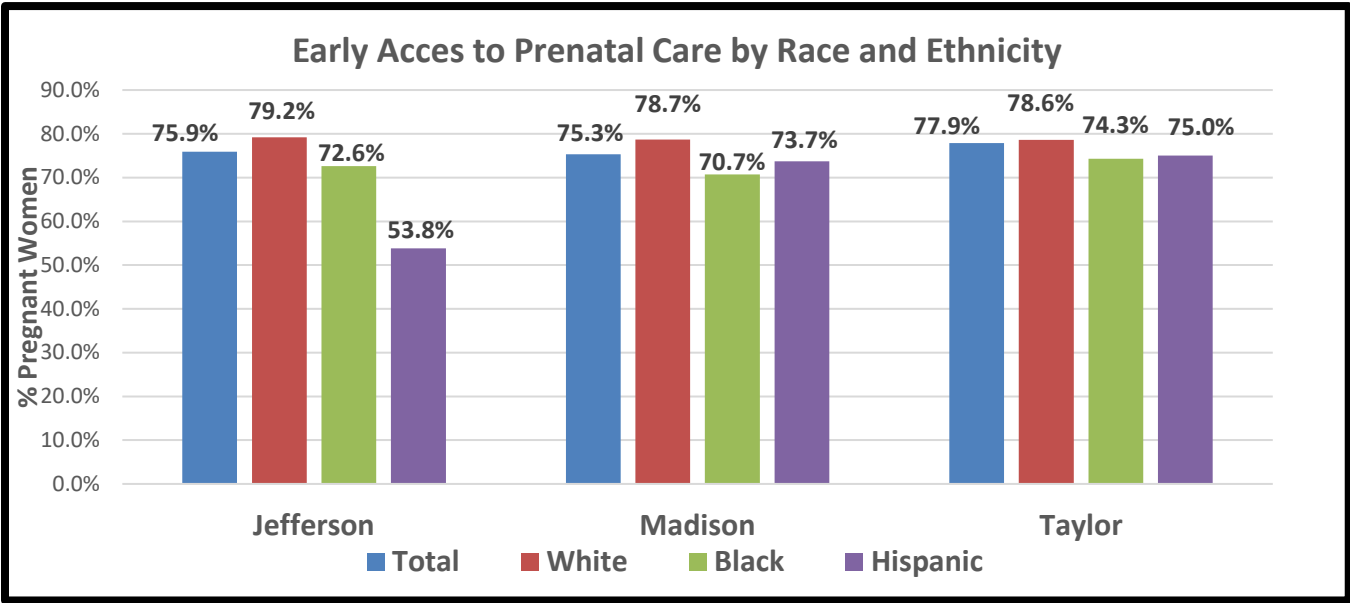
Figure 4.2

Early Acces to Prenatal Care by Race and Ethnicity

Figure 4.3 Births to Mothers with 1st Trimester Prenatal Care, 3-Year Rolling Rates, Jefferson County and Florida
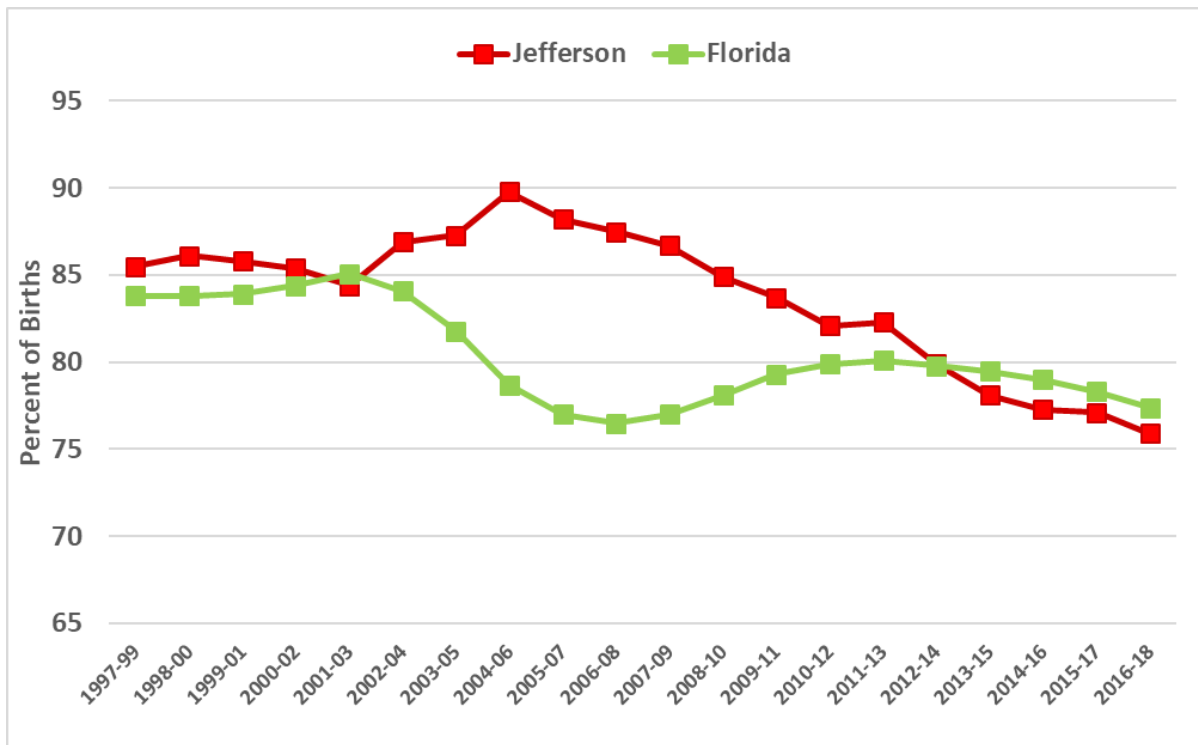

Figure 4.4 Births to Mothers with 1st Trimester Prenatal Care, 3-Year Rolling Rates, Madison County and Florida
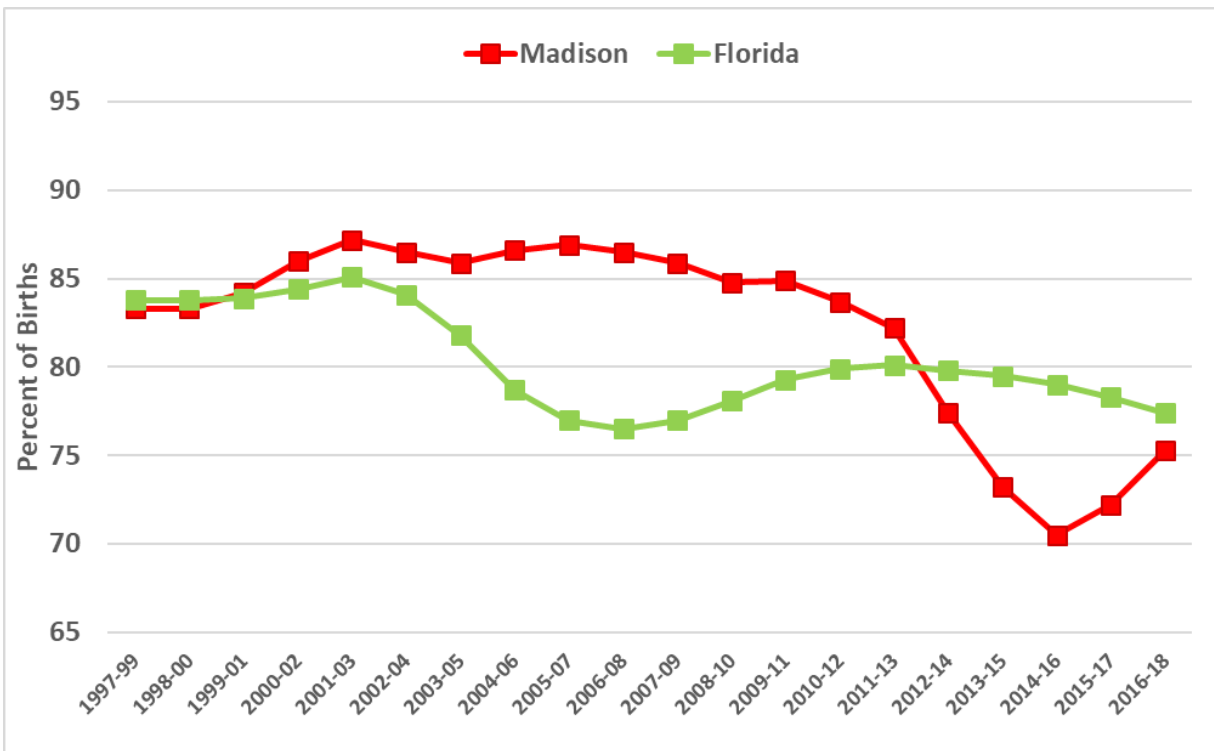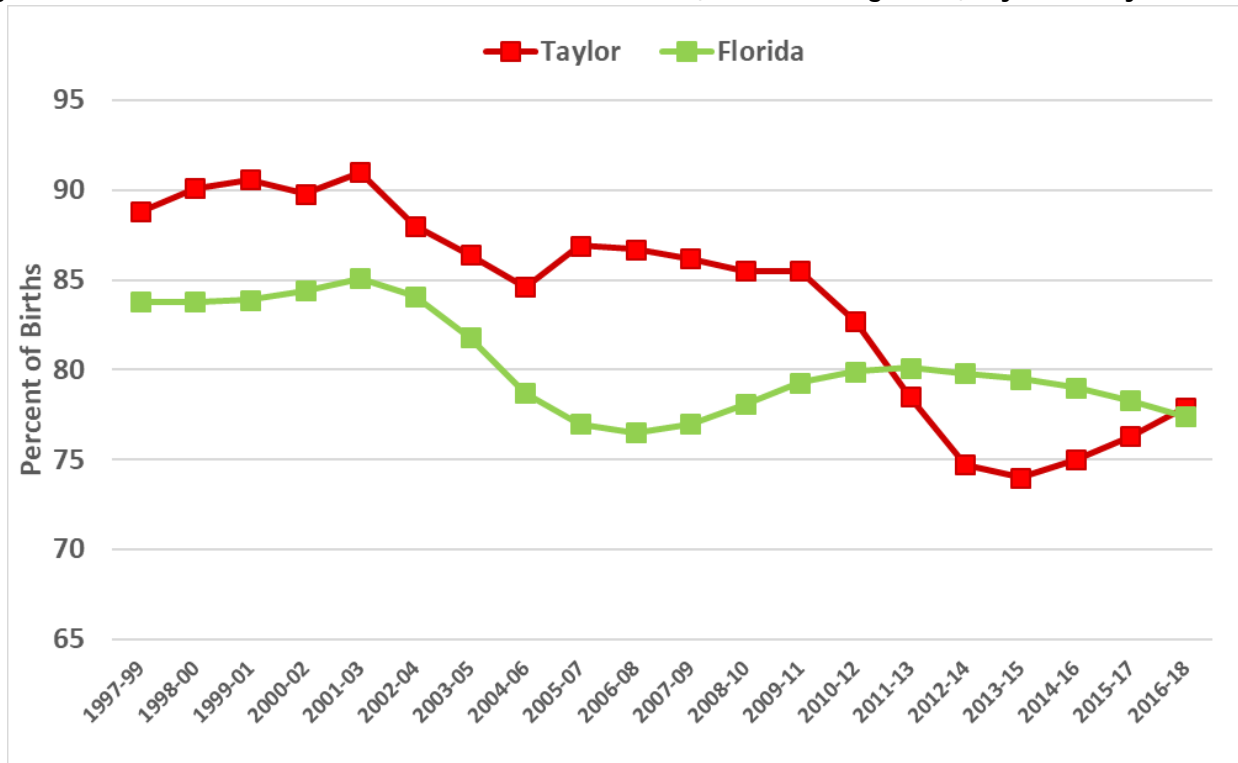
Figure 4.5 Births to Mothers with 1st Trimester Prenatal Care, 3-Year Rolling Rates, Taylor County and Florida

For the same reason that early entry into prenatal care is a predictor of better birth outcomes and the opportunity for intervention, late entry into prenatal care is a cause for alarm. There are many reasons why women enter into care late or have no prenatal care at all. These range from denial about the pregnancy or hiding a pregnancy from others, to a personal belief that that there are no benefits to early care. Some women who are substance-dependent may not seek care until delivery to avoid issues associated with their dependency. Undocumented citizens may only present at delivery as well, since Medicaid does not cover the majority of the cost of their prenatal care.

In Florida, 6.7% (2018) of pregnant women are late to care, or have no prenatal care at all. For the counties of Jefferson, Madison, and Taylor these averages are higher than the state, at 8.7%, 10.6%, and 9.8%, respectively.[5] Since these numbers have doubled since the last needs assessment in 2016, the Healthy Start Leadership Team partnered with the Jefferson County Health Department during its Community Health Assessment process in 2018 and 2019 to research how this data is collected. Informal data was gathered from Healthy Start care coordination teams that gave cause for a deeper dive into the data, including conflicting data gathered by birth clerks in hospitals and self-report by Healthy Start participants. The process was reviewed and the Jefferson and Madison Health Departments took on an extensive Quality Improvement project to compare the data on entry into prenatal care between clients of the county health department, compared to the data gathered by vital statistics. In only 13% of Jefferson records and 7% of Madison records did the health department and Vital Statistics have the same prenatal entry to care date.[6]

Figure 4.6
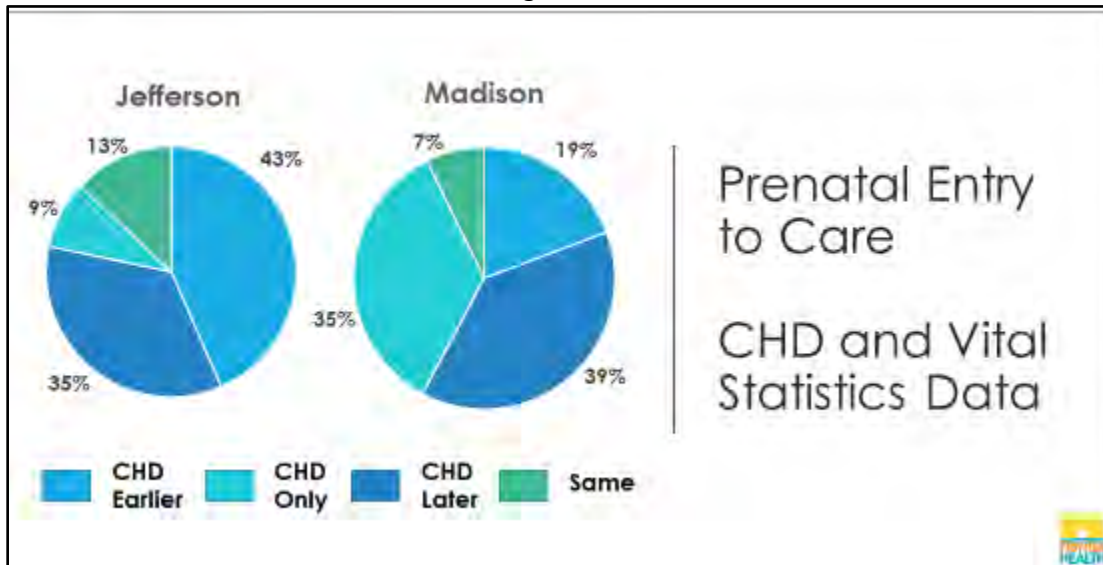
The Coalition will continue to partner with the local health departments to advocate for policy changes in collecting and monitoring data as well as partnering with neighboring Healthy Start Coalitions to train birth clerks in Leon facilities.

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CHARACTERISTICS OF THE BIRTH MOTHER

BIRTHS TO UNWED MOTHERS
The percentage of births to unmarried women has been increasing steadily since the 1940s and has increased even more markedly in recent years. Trends in births outside of marriage reflect changing norms regarding sexual behavior and family formation. Policy makers consider births to unwed mothers important because it is linked to measures of child well-being. Births outside of marriage are often associated with disadvantage for both children and their parents. Single parents who have children outside of marriage are younger on average, have less education, and have lower incomes than married parents. Children who are born to unmarried parents are more likely to live in poverty and to have poor developmental outcomes.[2]

Births to unwed mothers are a common demographic across the Florida panhandle. The counties of Jefferson, Madison, and Taylor have some of the highest rates in Florida for this indicator. In Jefferson County, 58.3% of births are to unwed mothers; the numbers are even higher in Madison at 61% and Taylor's rate is 57.9%, compared to the state average of 46.7% for the three-year rolling average 2016-2018.[1] Figure 5.1 shows the dramatic difference between white and black babies born to unwed mothers, revealing a cultural norm in the black community. Nearly nine in ten black babies are born to an unwed mother in these counties. The number of Hispanic births in all three counties are small; however, the percentage of births to unwed Hispanic mothers is high.

Figure 5.1
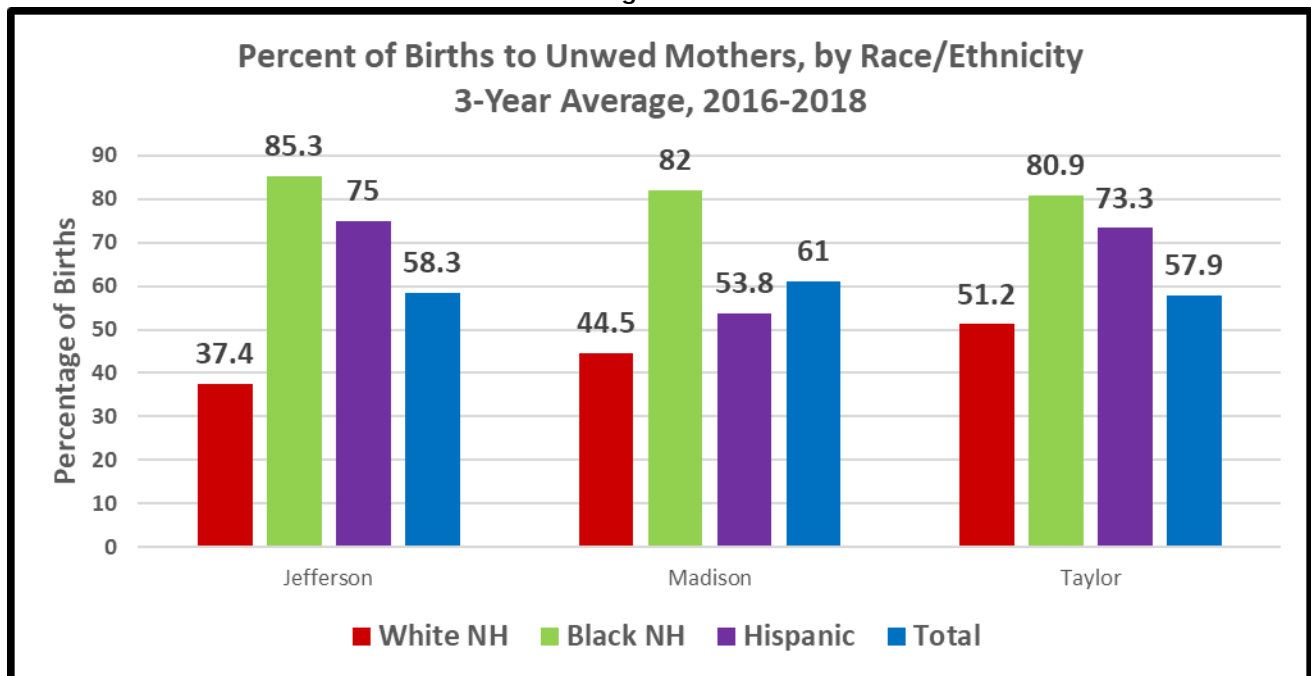
These counties, compared with Florida as a whole, have always had much higher concentrations of infants born to unwed mothers. While this is a national, state and local trend that has shifted toward the norm of nonmarital fertility, the issue is more pronounced in these rural communities. Figures 5.2, 5.3 and 5.4 depict these consistent trends for each county over the last multi-years, compared with the state of Florida.

Figure 5.2 Births to Unwed Mothers, 3-Year Rolling Rates, Jefferson County and Florida
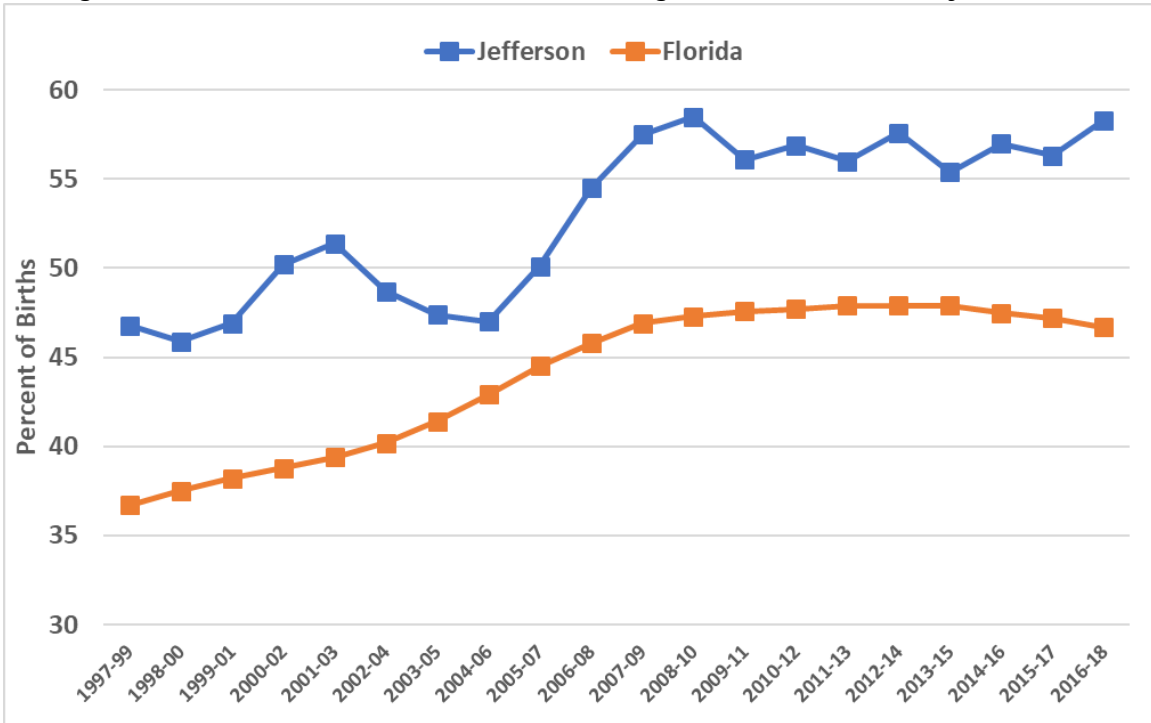

Figure 5.3 Births to Unwed Mothers, 3-Year Rolling Rates, Madison County and Florida
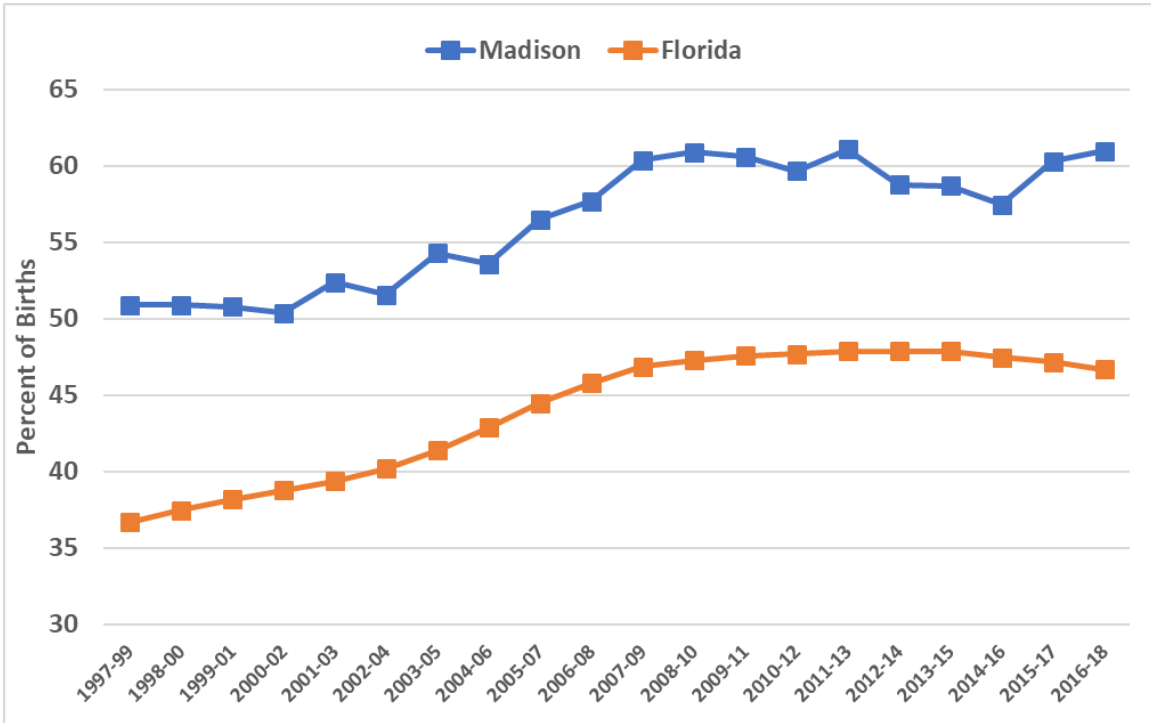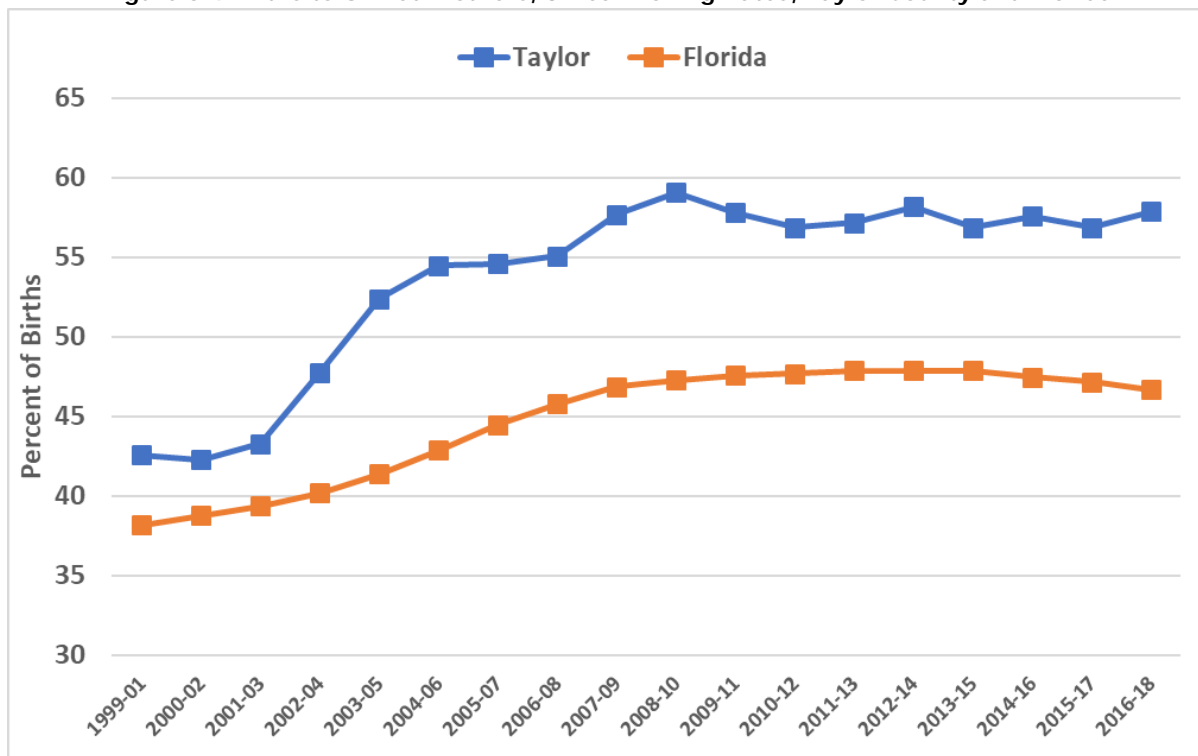
Figure 5.4 Births to Unwed Mothers, 3-Year Rolling Rates, Taylor County and Florida

EDUCATION STATUS

Lack of education is a primary indicator of perpetual poverty. Therefore, lack of a high school education is also a primary risk factor for poor birth outcomes, based on the direct correlation between poverty and the life course perspective that dictates poor health outcomes overall for the poor.[2] During pregnancy, poor mothers are likely to face multiple stressful life events, including feeling isolated, teenage pregnancies, unemployment, more crowded or polluted physical environments, and far fewer resources to deal with these exposures. The early child health consequences of poverty and pregnancy are multiple, and often set a newborn child on a life-long course of disparities in health outcomes. Included are greatly increased risks for preterm birth, intrauterine growth restriction, and neonatal or infant death. Poverty has consistently been found to be a powerful determinant of delayed cognitive development and poor school performance. Behavior problems among young children and adolescents are strongly associated with maternal poverty, whose root cause is often lack of education.[2]

For Florida, 11.92% (2016-2018) of mothers ages 19 and over do not have a high school education. In the counties of Jefferson, Madison and Taylor, the concentration of this indicator is higher at 16.6%, 14%, and 16.4% respectively.[1]

The 20-year trend for Florida is moving in a positive direction towards increasing high school completion prior to pregnancy, and greater value is held on the high school diploma in Florida collectively, through many state and local initiatives that emphasize the importance of education. With the exception of Jefferson County, the maternal population in the counties of Jefferson, Madison and Taylor are following this positive trend. (Figures 6.2, 6.3 and 6.4) Of significant interest, however, is that the racial disparity for these counties is widening compared to the last needs assessment in 2016. Figure 6.1 below shows a more significant racial disparity with blacks in Madison County

having a higher prevalence of no high school education before pregnancy. Hispanic numbers are small for each county; however, the percentages are high for births born to Hispanic mothers over the age of 19 with no high school education.
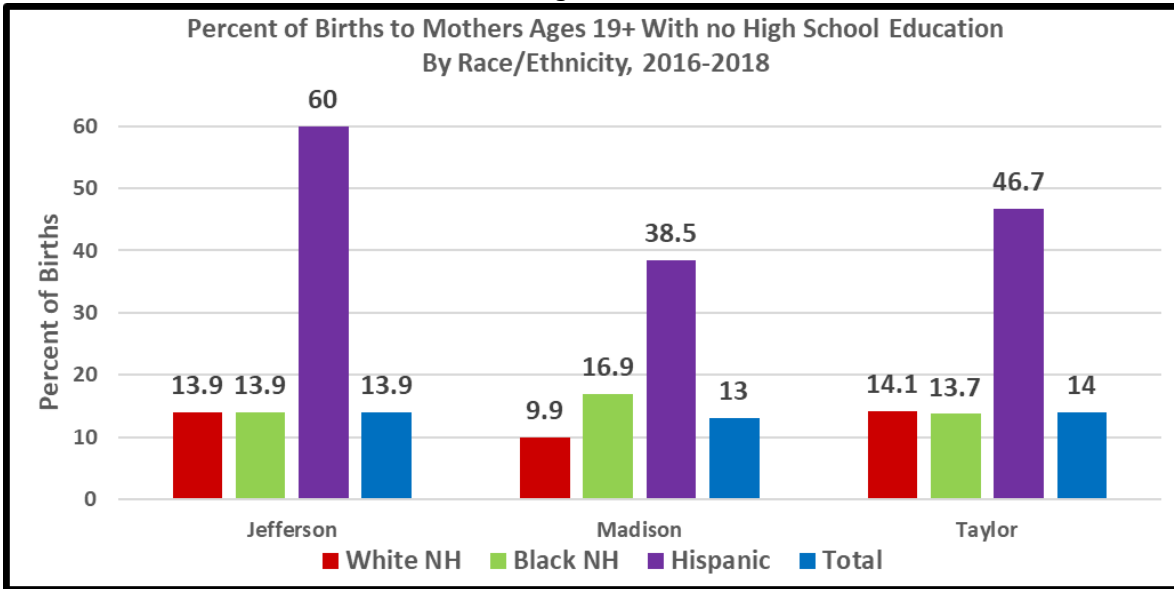
Figure 6.1

Percent of Births to Mothers Ages 19+ With no High School Education By Race/Ethnicity, 2016-2018

Jefferson: White NH 13.9, Black NH 13.9, Hispanic 60, Total 13.9
Madison: White NH 9.9, Black NH 16.9, Hispanic 38.5, Total 13
Taylor: White NH 14.1, Black NH 13.7, Hispanic 46.7, Total 14

Figure 6.2 Births to Mothers Ages 19+ Without High School Education, 3-Year Rolling Rates, Jefferson County and Florida
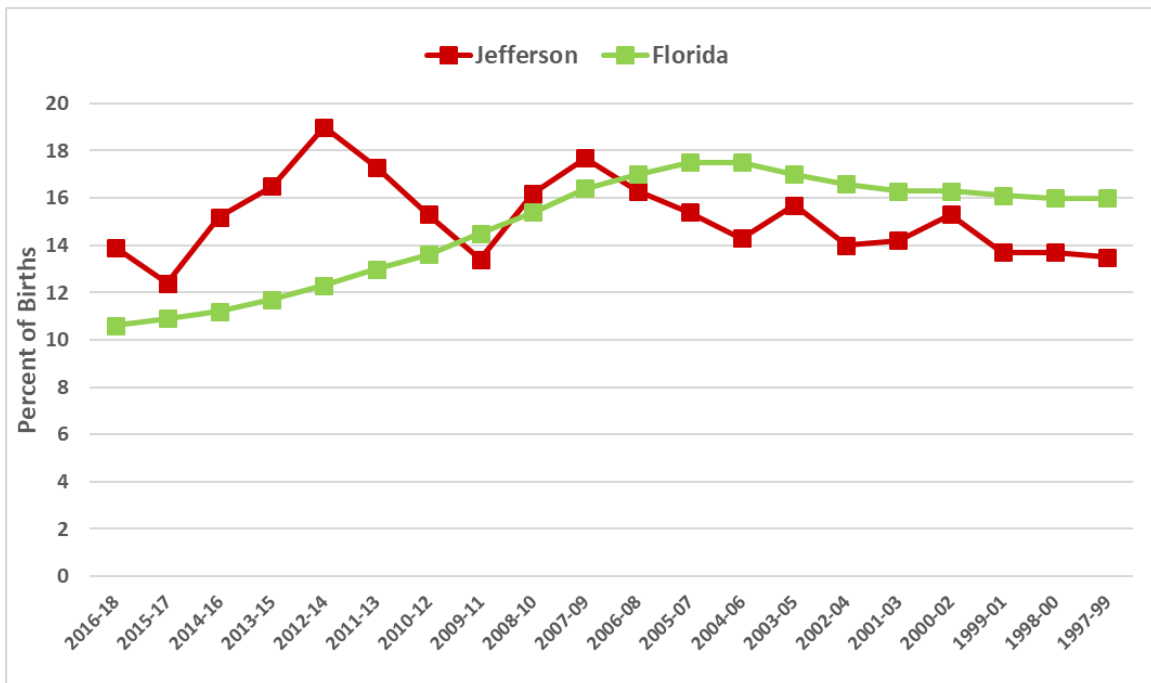
Figure 6.3 Births to Mothers Ages 19+ Without High School Education, 3-Year Rolling Rates, Madison County and Florida
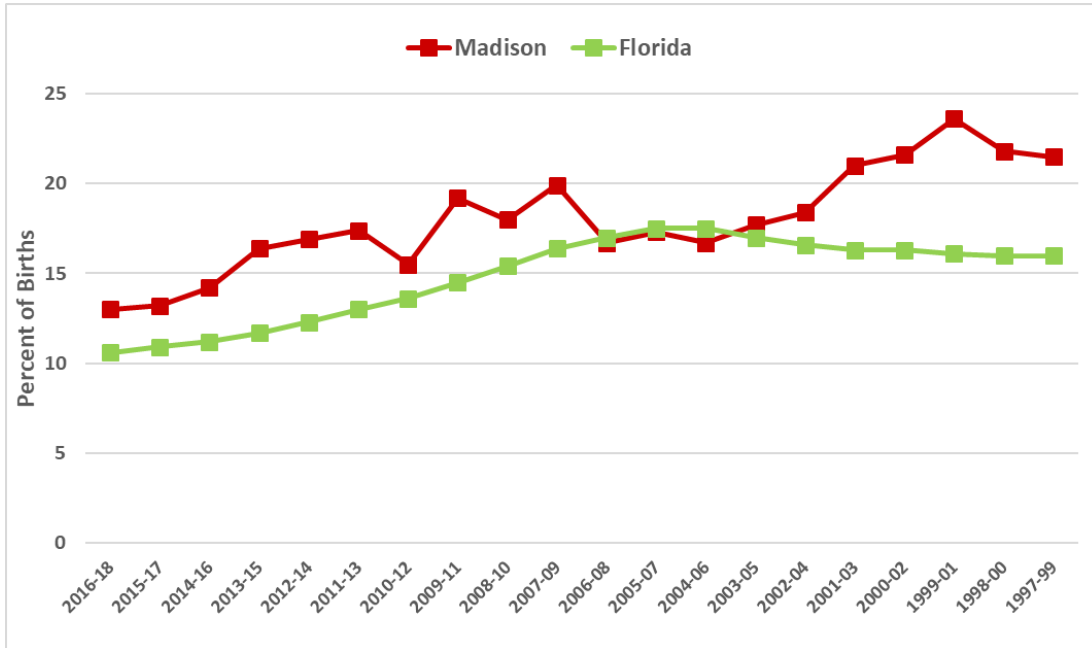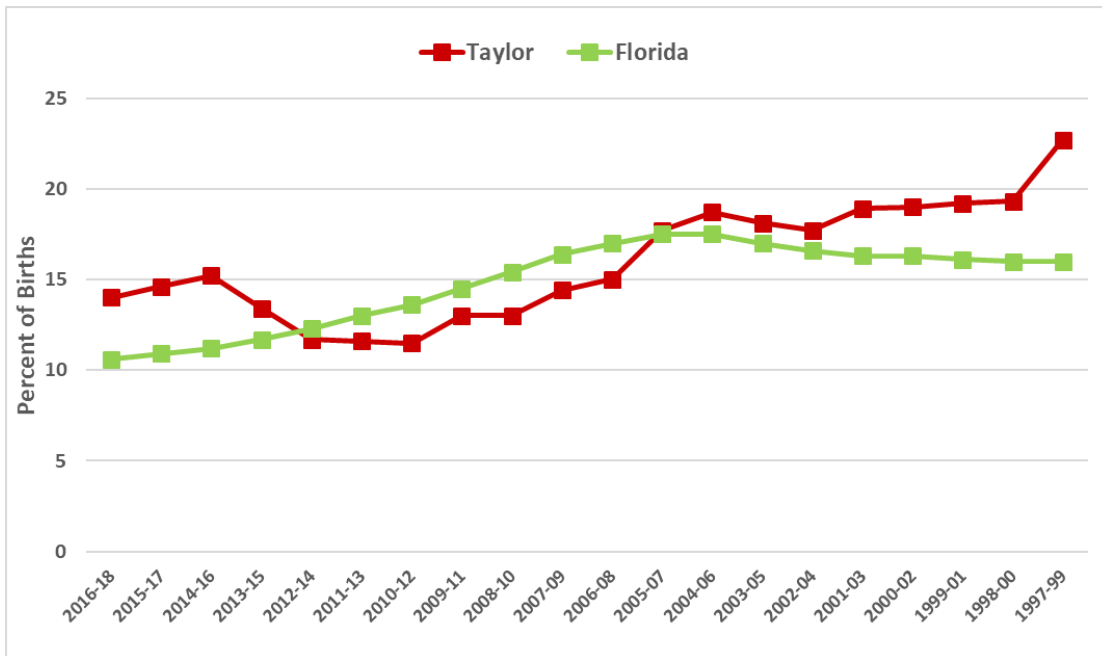

Figure 6.4 Births to Mothers Ages 19+ Without High School Education, 3-Year Rolling Rates, Taylor County and Florida
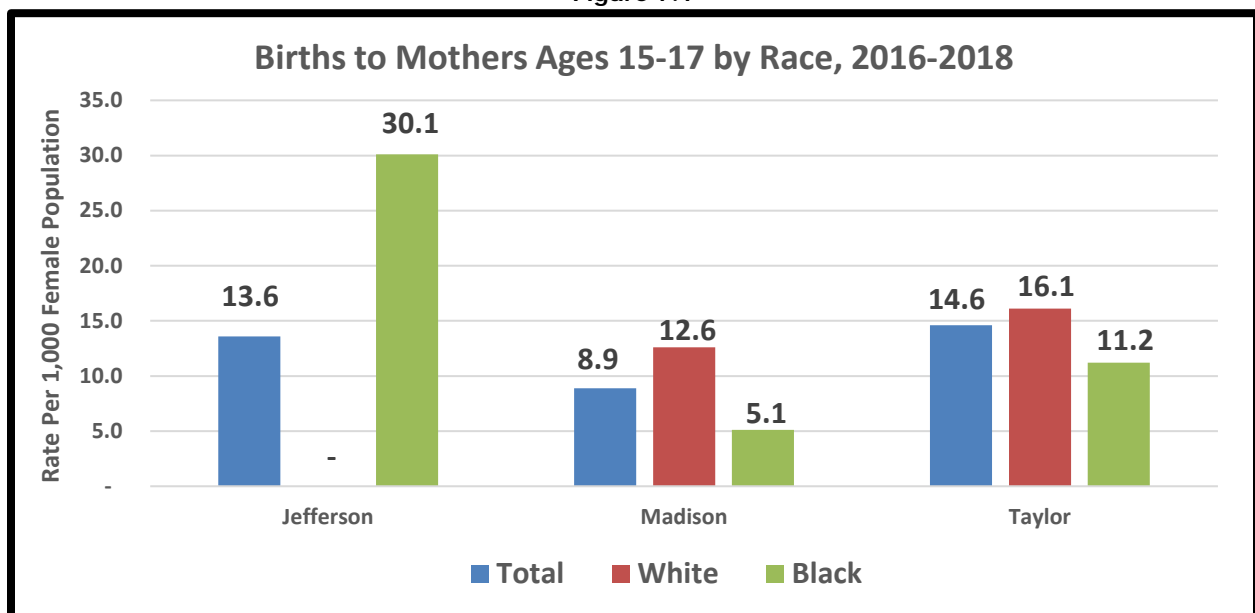
TEEN BIRTHS

Similar to unwed mothers and mothers with no high school education, births to teens specifically are a maternal characteristic that foretells of a general life course perspective of poverty, poor health and developmental outcomes, and perpetual teen pregnancy.[3] Births to teens are most often a subset of the unwed and uneducated category but analyzed separately for the purposes of targeted intervention for preventable outcomes.

For the purpose of this needs assessment, teen pregnancy is quantified as births to mothers ages 15-17. This age group is targeted in terms of school-based strategies for prevention and intervention. According to the Florida Department of Health, teen pregnancy is a critical public health issue that affects the health, educational, social and economic future of the mother and child. Teen pregnancy is closely linked to a host of other critical social issues as well: welfare dependency, out-of-wedlock births, responsible fatherhood, and workforce development in particular. Adolescents are less likely to seek out prenatal care because they are afraid or embarrassed. This phenomenon and the immature physical nature of adolescents result in higher rates of low birth weight babies than in other age groups. As the offspring of adolescent mothers grow, they are more apt than children born to older women to have health and cognitive problems, and to be the victims of neglect or abuse.[1]

Unlike other maternal characteristics which are expressed as a percentage of the births, teen pregnancy is a rate calculated by the number of births per 1,000 of the female population within the age group selected. The teen pregnancy rate for the rolling three year average 2016-2018 for Florida for the age category of 15-17 is 7.4. Jefferson County's rate has increased to 13.6, just under Taylor's rate of 14.6. Madison County's teen pregnancy rate is 8.9.[1] The racial makeup of the teen birth issue is presented below in Figure 7.1; there are no significant racial disparities other than *all* teen births (N=8) in Jefferson County were to black mothers. There were no Hispanic births listed for any of the three counties during 2016-2018.

Figure 7.1

Births to Mothers Ages 15-17 by Race, 2016-2018

In reviewing the multi-year trend for teen births, it is important to note that the downward trend of teen births for Jefferson County is reversing slightly over the last five years. However, birth rates are low in Jefferson, which creates the volatility in numbers (Figure 7.2). In Madison County (Figure 7.3) mirrors the overall decline in teen births for Florida, at nearly the same intensity. However, for Taylor County, teen pregnancy remains a perpetual problem embedded in the culture (Figure 7.4).

Figure 7.2 Births to Mothers Ages 15-17, Rates Per 1,000 Population, 3-Year Rolling Rates, Jefferson County & Florida
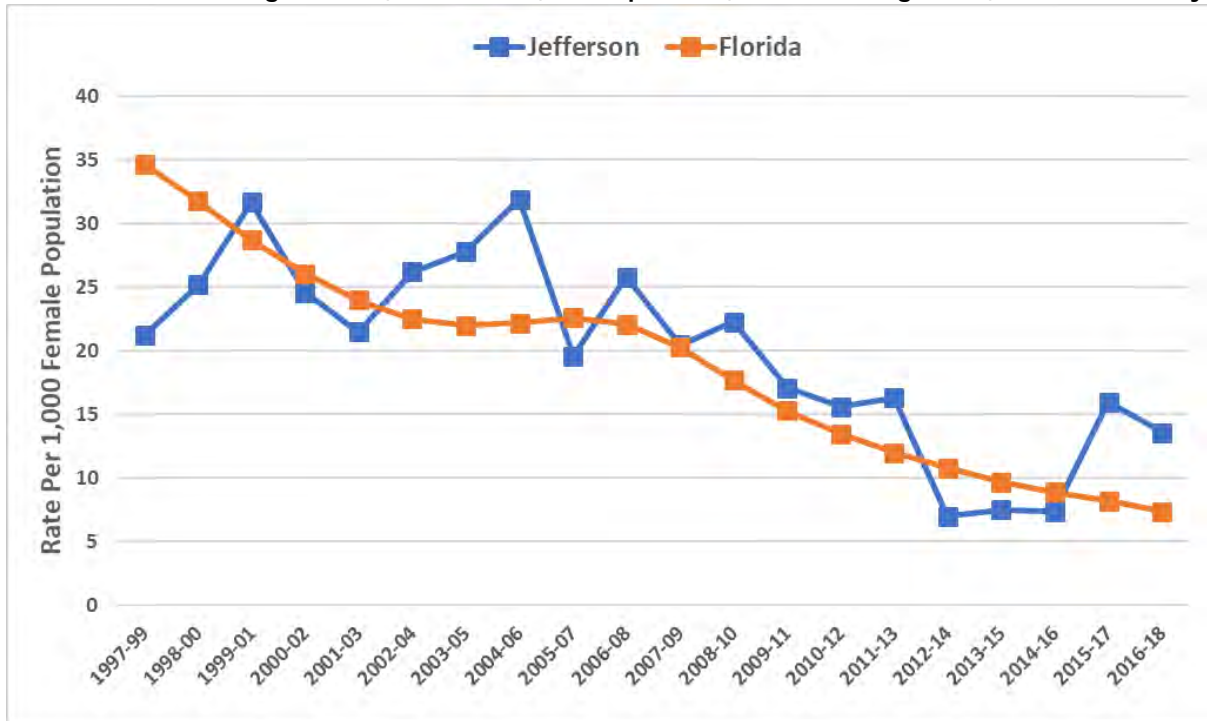

Figure 7.3 Births to Mothers Ages 15-17, Rates Per 1,000 Population, 3-Year Rolling Rates, Madison County & Florida
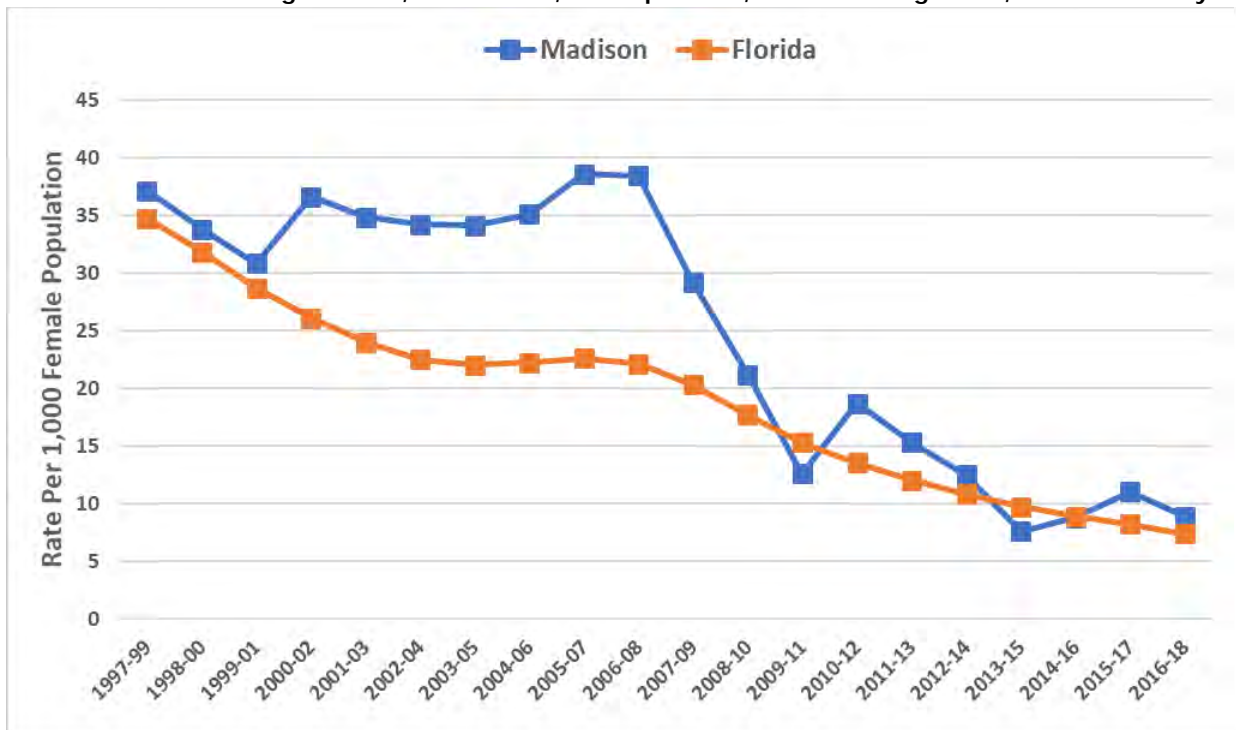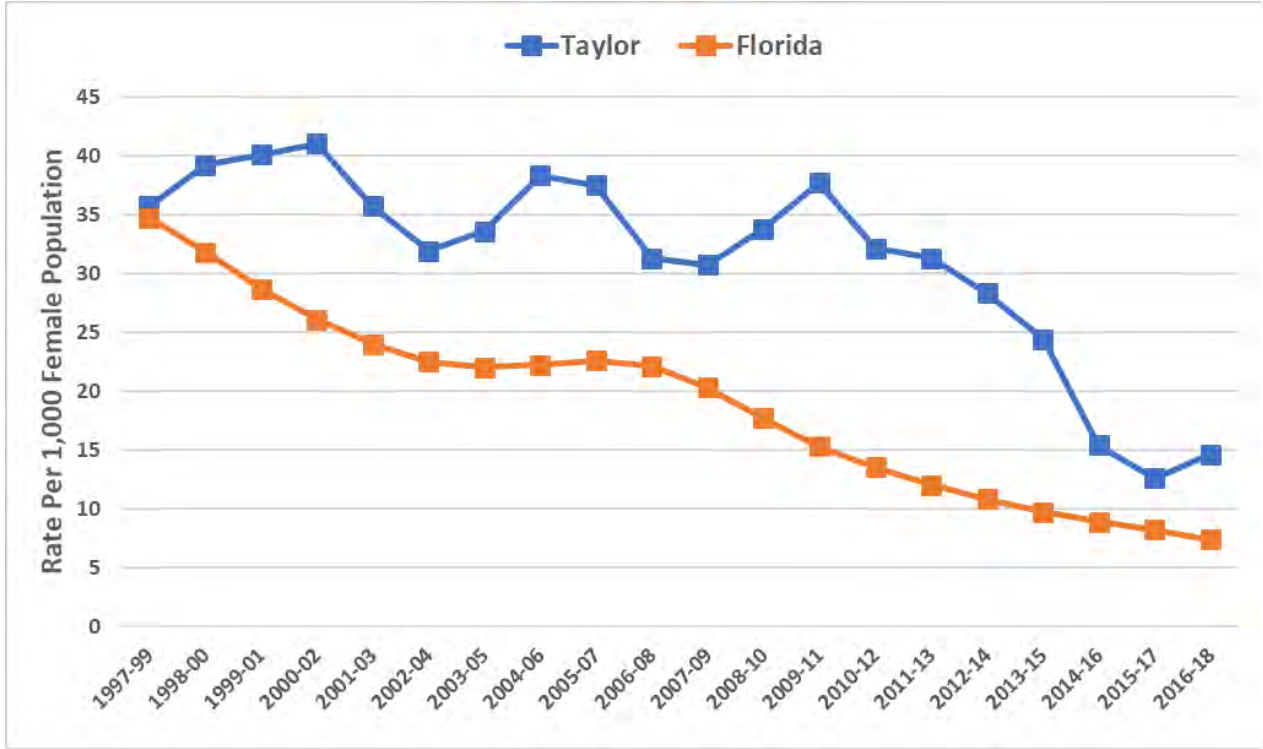
Figure 7.4 Births to Mothers Ages 15-17, Rates Per 1,000 Population, 3-Year Rolling Rates, Taylor County & Florida

TEEN PREGNANCY RECIDIVISM

Because teen pregnancy is a preventable, community issue, recidivism is a measurement of the interventions for this outcome. For Jefferson, Madison, and Taylor Counties, it is a measure of the outreach to and implementation of home visiting services within the Healthy Start teen population served. Home visiting is offered to first time and teen moms within the Healthy Start participant pool in each of the three counties. Repeat births to teens measures the number of births to 15-19 year olds where the mother had at least one previous birth and is expressed as a percentage of all births to mothers 15-19.[1]

In Florida, 15.4% (2016-2018) of births to teens ages 15-19 are *repeat* births to a teen. In Jefferson County, 21.7% are repeat births (N=5). In Madison and Taylor Counties, those rates are much lower at 5.1% and 8.1%, respectively.[1] This data indicates interventions are appropriate in Madison and Taylor Counties to prevent teen pregnancy recidivism and the number of births in Jefferson County, while very low, indicate that more targeted outreach is needed. All 5 of the repeat births to teens were black mothers.

For the multi-year trend, Florida has decreased the repeat births to teen rate by nearly 8 percentage points, a slow but steady decline. However, for Jefferson County, the rate is making an alarming climb upwards. It is important to note, however, that both Madison and Taylor Counties (Figures 8.2 and 8.3) have had consistently lower rates for repeat teen births than the Florida average.

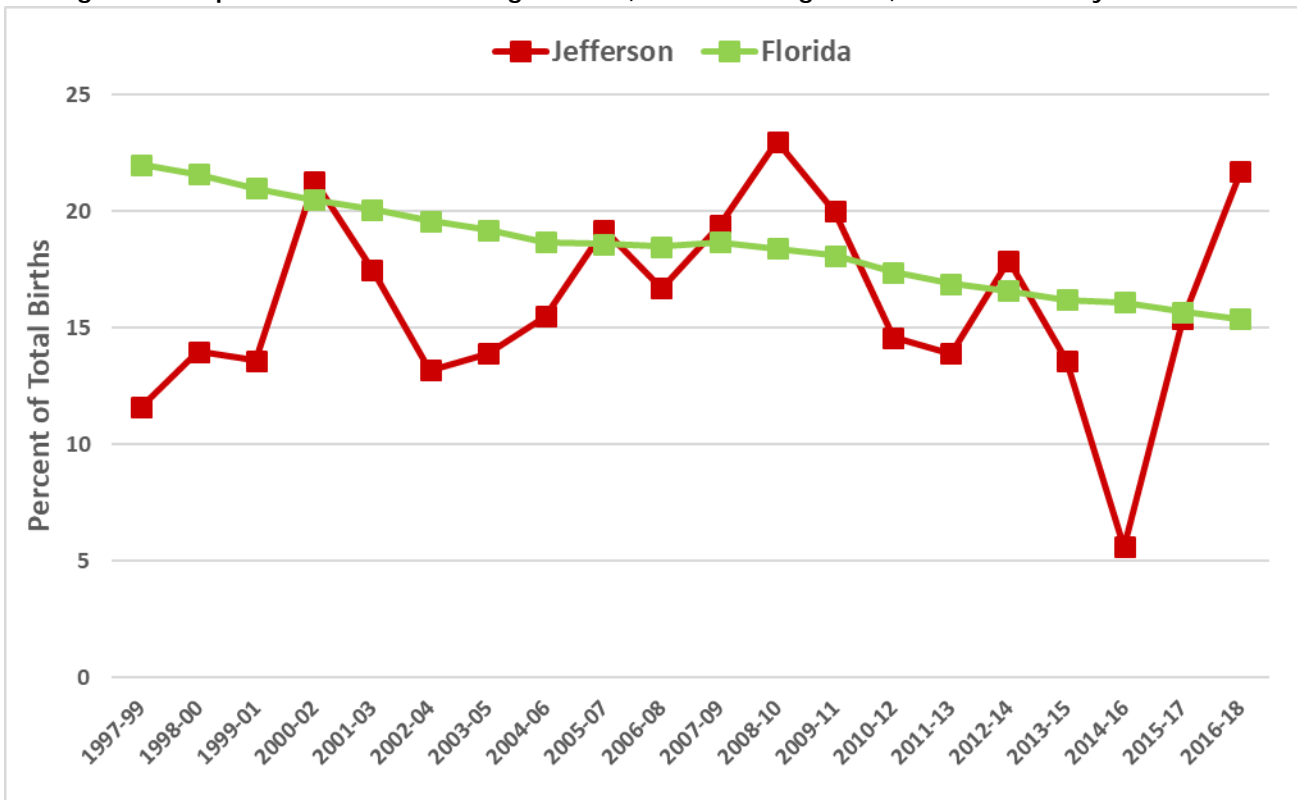**Figure 8.1 Repeat Births to Mothers Ages 15-19, 3-Year Rolling Rates, Jefferson County and Florida**

Figure 8.2 Repeat Births to Mothers Ages 15-19, 3-Year Rolling Rates, Madison County and Florida
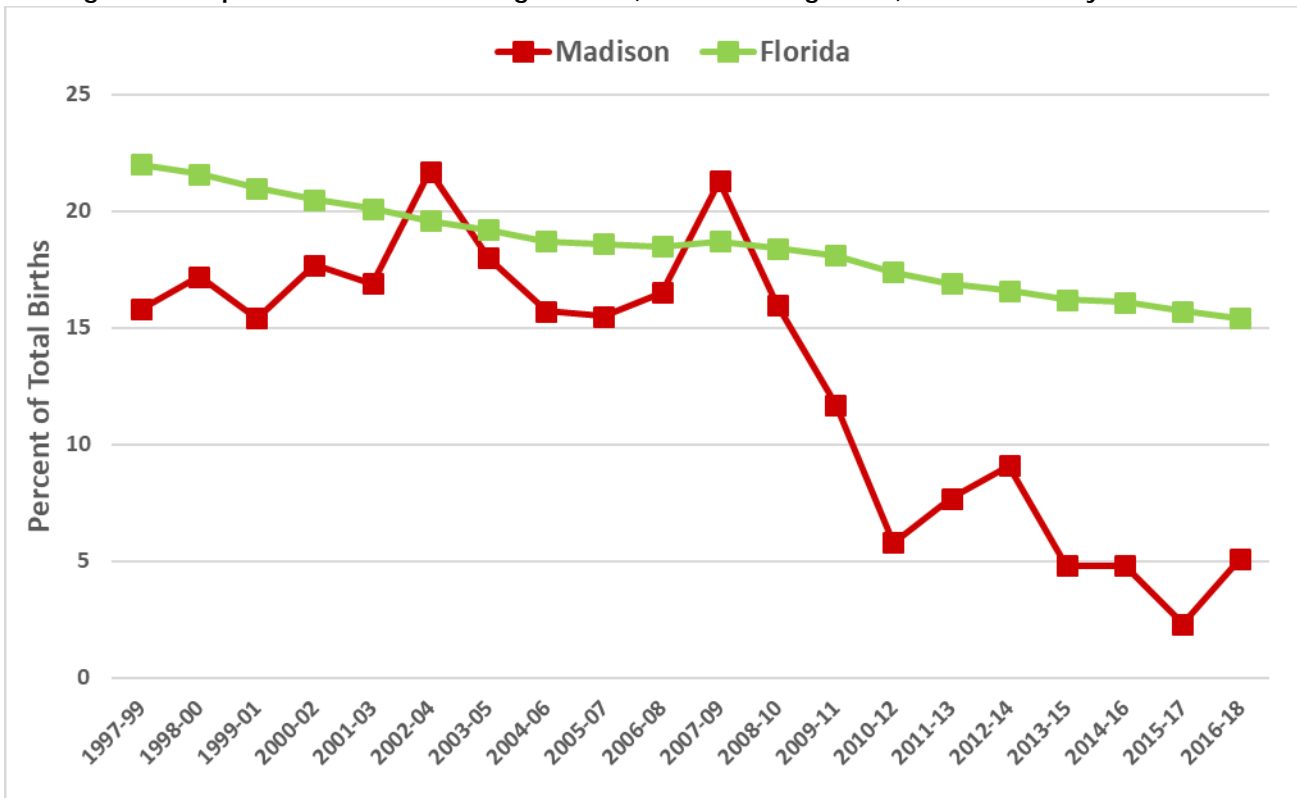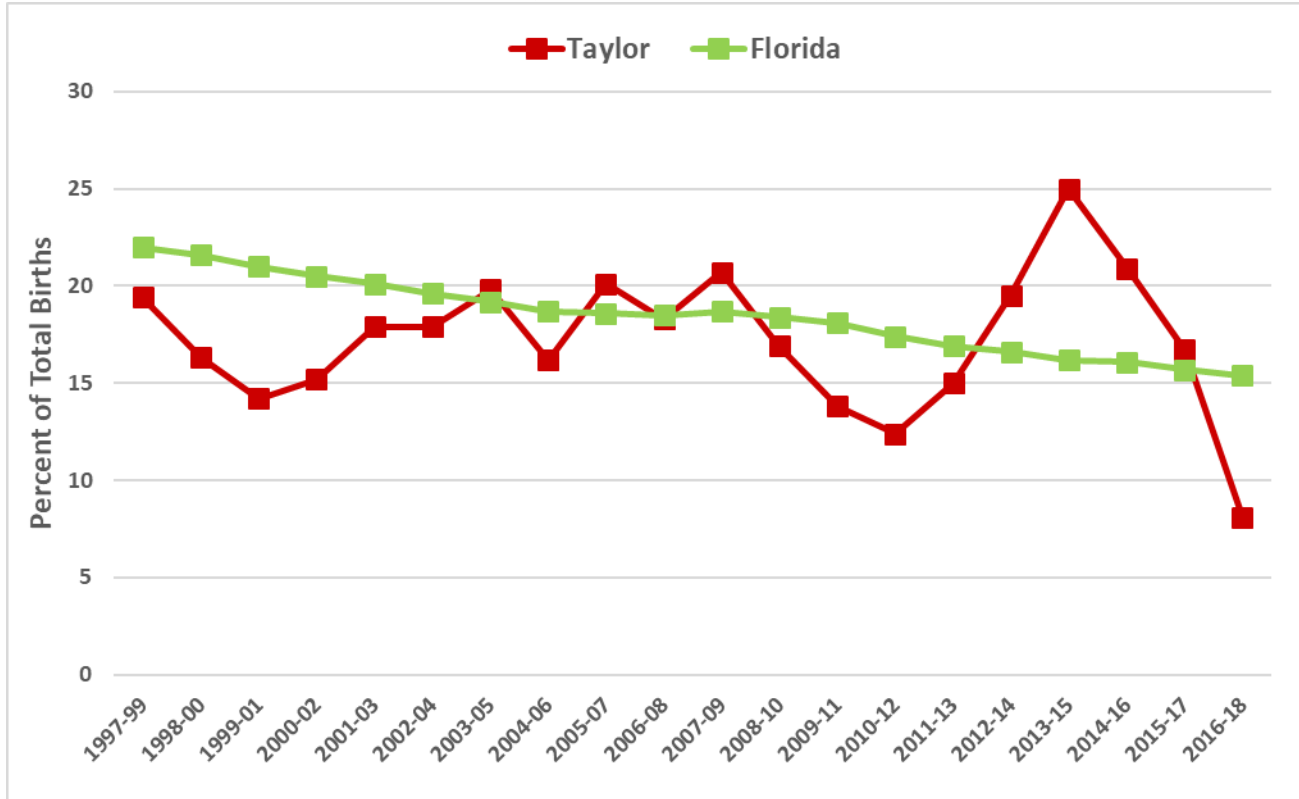
Figure 8.3 Repeat Births to Mothers Ages 15-19, 3-Year Rolling Rates, Taylor County and Florida

BREASTFEEDING INITIATION

Breastfeeding has many health benefits for both the mother and infant. Breast milk contains all the nutrients an infant needs in the first six months of life. Breastfeeding protects against diarrhea and common childhood illnesses such as pneumonia, and may also have longer-term health benefits for the mother and child, such as reducing the risk of obesity in childhood and adolescence. Breastfeeding has also been associated with a higher intelligence quotient (IQ) in children. (World Health Organization, 2018)

Provision of mother's breast milk to infants within one hour of birth is referred to as "early initiation of breastfeeding" and ensures that the infant receives the colostrum, or "first milk", which is rich in protective factors.[4]

Current evidence indicates that skin-to-skin contact between mother and infant shortly after birth helps to initiate early breastfeeding and increases the likelihood of exclusive breastfeeding for one to four months of life as well as the overall duration of breastfeeding. Infants placed in early skin-to-skin contact with their mother also appear to interact more with their mothers and cry less.[4]

In Florida, 86.1% (2016-2018) of women initiate breastfeeding in the important first moments after birth. This data is a relatively new collection, in that data prior to 2005 is not consistent or available to establish long term trends. Even though early initiation is important to Florida families as a whole, the percentage of women who initiate breastfeeding in Jefferson County is only 77%; in Madison County, only 68.9% of women initiate breastfeeding, and

in Taylor County the rate is 69.6%.[1] However, whites in these counties have a breastfeeding initiation rate that is more than 20 percentage points higher than the rates of blacks; the Hispanic rates are higher than those of blacks as well (Figure 9.1). The black-white gap has narrowed slightly since the last needs assessment, but remains a significant indicator of intervention for the Healthy Start Coalition and the local county health departments through their Community Health Improvement Plan (CHIP) process. Since this set of data is also collected by the same processes during the electronic birth registration process that affects the prenatal care rates (Section 4), the same review was conducted for the subset of health department clients to match data sets. (Figure 9.2)

Figure 9.1
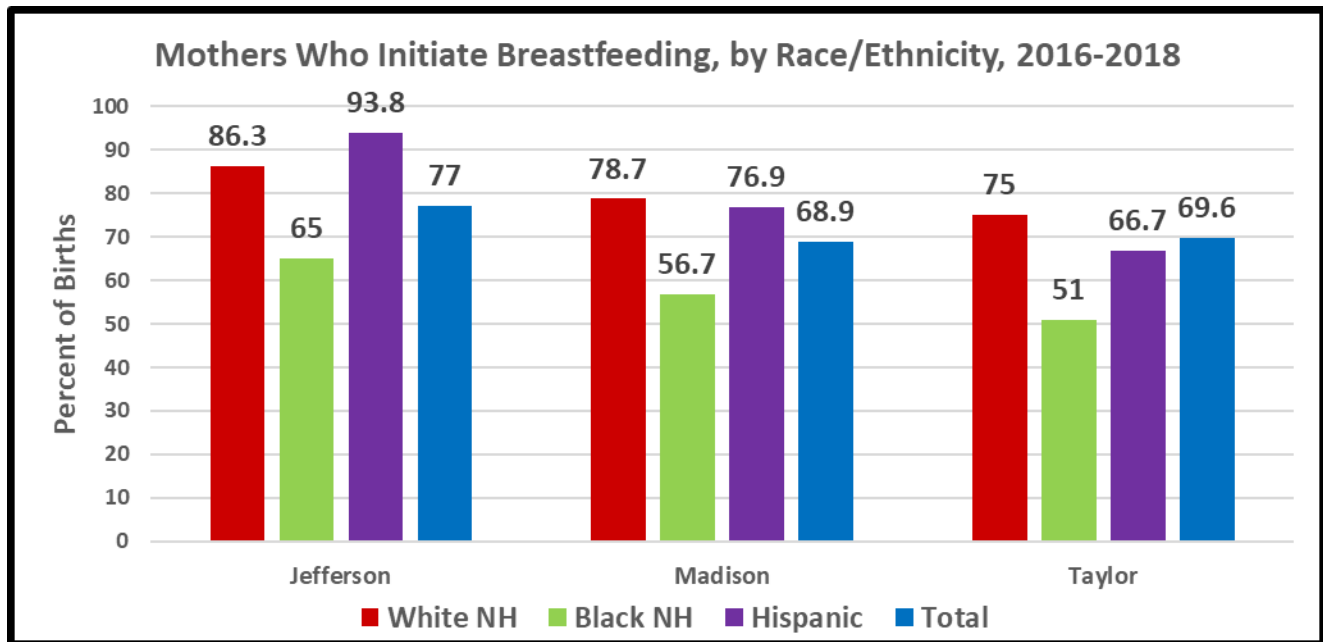
Jefferson and Madison Quality Improvement Project
To compare breastfeeding data across the health department clinic, Healthy Start, WIC and Vital Statistics, prenatal patient data for 2017 and 2018 from Florida's Health Management System (HMS) was matched to Healthy Start, Vital Statistics and WIC data to identify data inconsistencies. Common data fields were compared to identify discrepancies.

There were 50 records initially for Jefferson and 99 for Madison. The total was later revised to 46 and 83 because some records were not found by Vital Statistics. (Some had not given birth at the time of the match. Other reasons could include pregnancy did not come to term, adoption, and delivery out-of-state).

- Of the 46 records in the Jefferson sample, Vital Statistics documented breastfeeding initiation in 32 of them, or 70%.
    - 16 were Black, non-Hispanic
    - 8 were White, non-Hispanic
    - 7 were Hispanic
- Of the 83 records in the Madison sample, Vital Statistics documented breastfeeding initiation in 29 of them,

or 35%.
- ◦ 15 were Black, non-Hispanic
- ◦ 6 were White, non-Hispanic
- ◦ 8 were Hispanic

In conclusion, there is a significant difference in the data sets, presented below in Figures 9.2 and 9.3. WIC data overwhelmingly states that there are significantly more women initiating breastfeeding than is reported by Vital Statistics and collected at birth. The Coalition is partnering with the local health departments to provide support to change policy on how this indicator is collected and reported. To address the black-white gap, the Coalition has also administered a survey to those women, who, during pregnancy indicate they choose not to breastfeed. In order to identify strategies to increase the overall breastfeeding rates, this information is useful in identifying educational needs.

Figure 9.2 Documentation of Breastfeeding Across Healthy Start, WIC and Vital Statistics, 2017-2018, Jefferson County
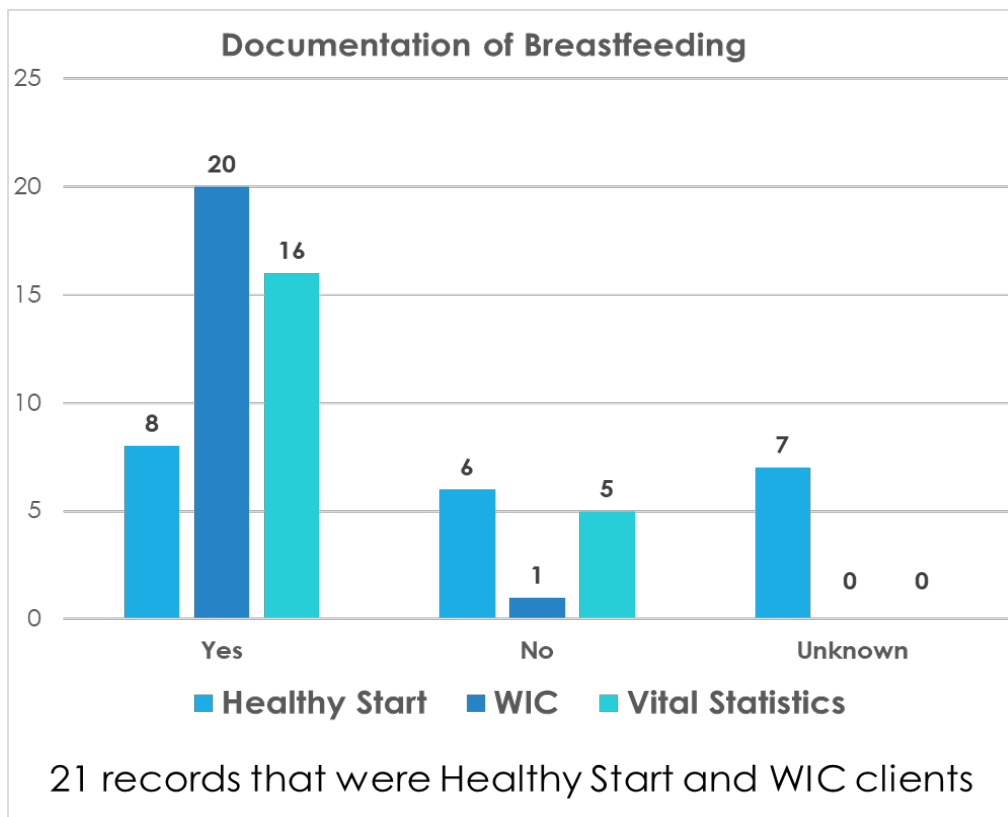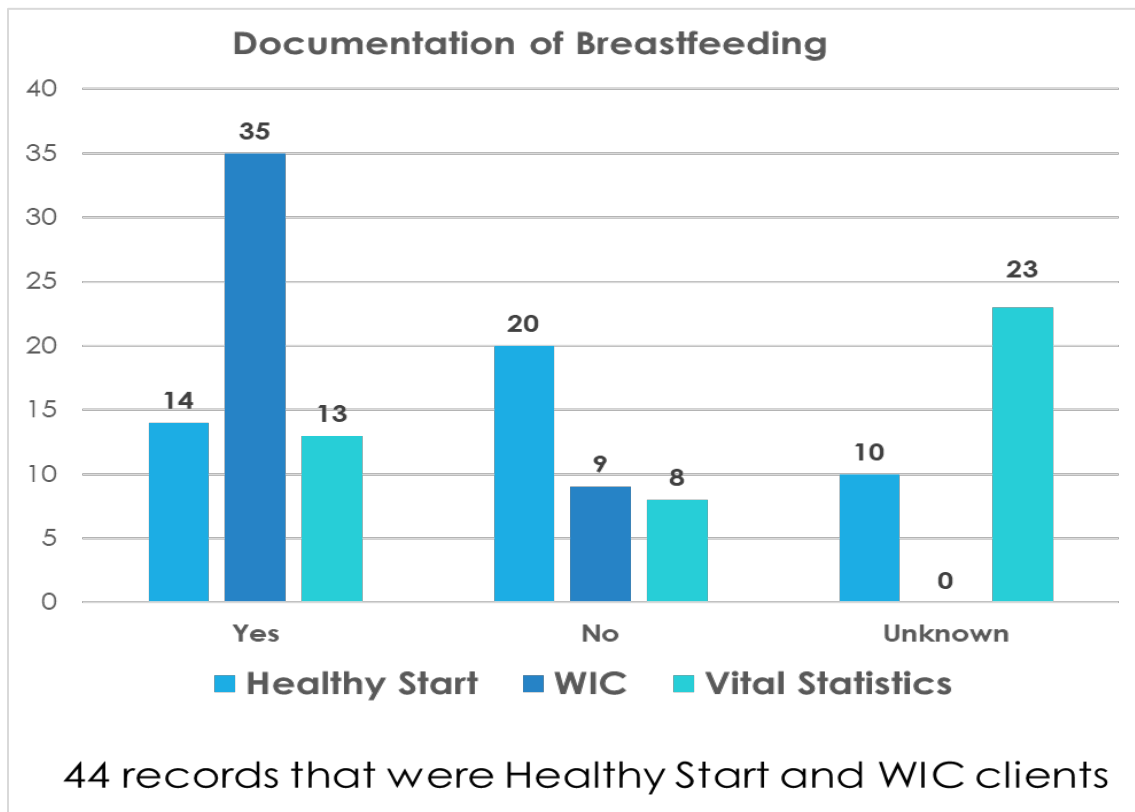
Figure 9.3 Documentation of Breastfeeding Across Healthy Start, WIC and Vital Statistics, 2017-2018, Madison County

Breastfeeding Surveys

Since the breastfeeding initiation rates by race has been a consistent issue in these counties, the Coalition has implemented strategies over the last five years to increase resources for women, including strategies for Healthy Start providers to become licensed as Certified Lactation Counselors. To further address the disparity in breastfeeding outcomes, the Coalition conducted a survey during April 2019 – June 2020 with pregnant women who presented at the local health departments for prenatal care or Healthy Start services who indicated that they would not be breastfeeding postnatally. This survey was designed to elicit information on potential areas where more education could be provided to alter that decision when possible. The full results of the survey is included in the consumer input section and summarized below:

- Respondents were primarily from Taylor County (51%) and represented the 25-34 age group, and were 50% white and 50% black
- Respondents reported equally their number one reason for not breastfeeding was 30% inconvenience, 35% unpleasant sensation, and 35% medical reasons
- Other reasons for not breastfeeding included primarily that friends did not breastfeed, and grandparents and parents did not breastfeed

BIRTHS TO WOMEN>35

Advanced maternal age (AMA) refers to women who give birth after the age of 35, where health risks are more prevalent. Women in this age group are considered at a higher risk for a poor birth outcome, because their age is a predictor of other health problems, like diabetes, high blood pressure, and birth defects such as Down's Syndrome.[5] While there is a growing trend in delaying childbearing post-career, women in this age group have had long term exposure to environmental hazards and stress, which reduces the resiliency of the reproductive system.[6]

Births to Women by any age category is expressed as a rate per 1,000 of the female population for the age group selected (same as teen birth calculations). For Florida, the rolling three-year average for 2016-2018 was 31.9, and is steadily climbing, as more women across the state are putting off motherhood after career establishment and other life goals. Locally, Jefferson County's rate is the highest of the three counties at 24.1. Madison and Taylor rates for AMA are 17.0 and 15.5, some of the lowest in Florida. This equates to around 15-20 births each year that fall into this AMA category.[1]

MULTIPLE GESTATION

Being pregnant with multiples means being pregnant with twins, triplets or more. More than 3 in 100 women (3 percent) are pregnant with multiples each year. Most women with multiples are pregnant with twins, but some women get pregnant with three (triplets), four (quadruplets) or more babies. These are called higher-order multiples.[7]

Premature birth (birth before 37 weeks of pregnancy) is the most common complication of being pregnant with multiples. Women who are pregnant with multiples are 6 times more likely to have babies early than those who are pregnant with one baby. Also, multiple gestation infants are more likely to have health complications than singletons. Women need expanded prenatal care with multiple gestations and close monitoring to reduce the impact of impending prematurity.[7]

Extreme preterm multiples are more likely to have lower birth weight; higher maternal age; and higher rates of assisted conception, antenatal steroid use, and cesarean delivery compared with singletons.[8] The mortality rate is significantly higher in multiples compared with singletons; the odds for mortality in extremely preterm NICU infants of multiple gestation is significantly higher compared with singletons.[8]

In Florida, 3.3% of all births were multiples (2016-2018). Taylor County has seen a significant number of multiple births in the last several years and the numbers of multiples is increasing over time. Taylor's current rate is higher than the state at 3.6% (N=25), compared to Jefferson and Madison at 2.7% (N=10) and 2.2% (N=12), respectively. In reviewing the data by race, it is apparent that the higher rates of multiples contribute to the black-white gap in low birth weight, since the majority of multiples are black babies. There were no multiple births to Hispanic women during the time frame (Figure 10.1).

Figure 10.1
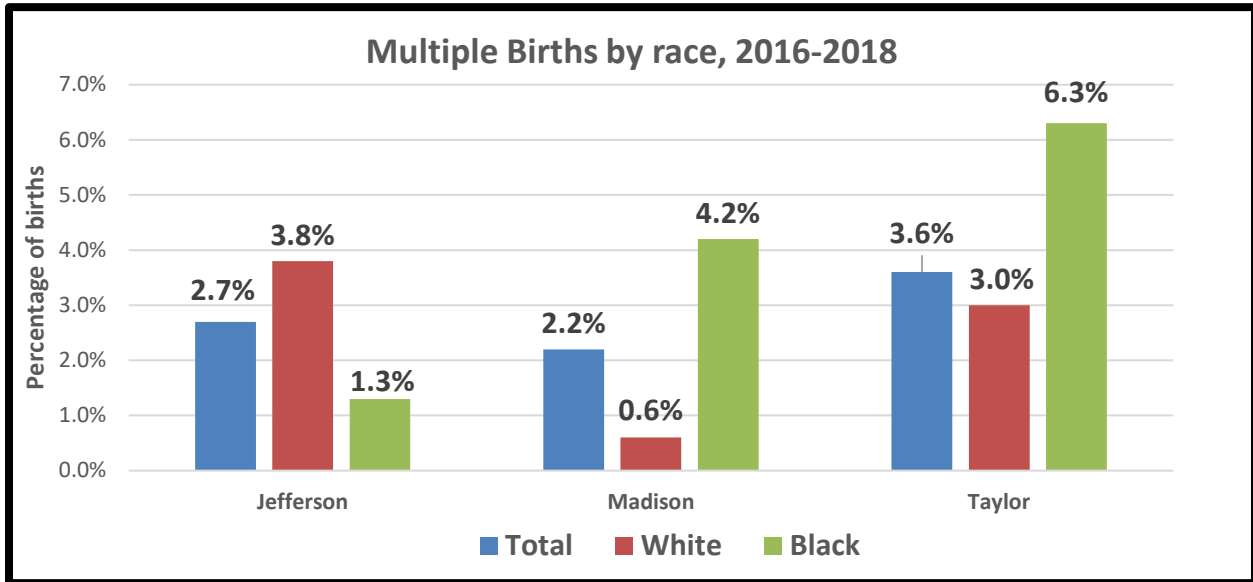
Multiple Births by race, 2016-2018

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[1]Florida Department of Health, Florida CHARTS - Community Health Assessment Resource Tool Set, accessed February 2020 http://www.flhealthcharts.com/charts/default.aspx

[2]Shattuck, Rachel M., and Rose M. Kreider. "Social and Economic Characteristics of Currently Unmarried Women with a Recent Birth: 2011". *American Community Survey* (Issued May 2013).

[3]Centers for Disease Control and Prevention. (2013). *Preterm birth.* Retrieved February 2020, from http://www.cdc.gov/reproductivehealth/maternalinfanthealth/PretermBirth.htm [top

[3]Lu, Michael C., and Neal Halfon. "Racial and ethnic disparities in birth outcomes: a life-course perspective." *Maternal and child health journal* 7.1 (2003): 13-30.

[4]Moore ER, Anderson GC, Bergman N, Dowswell T. Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database of Systematic Reviews*. 2012; Issue 5. Art. No.: CD003519

[5]March of Dimes, *A Mommy After 35*. December 2013. Retrieved February 2020 from http://www.marchofdimes.org/pregnancy/a-mommy-after-35.aspx.

[6]Hunt, Patricia A., and Terry J. Hassold. "Human female meiosis: what makes a good egg go bad?" *Trends in Genetics* 24.2 (2008): 86-93.

[7]March of Dimes, *Being Pregnant with Twins, Triplets, and other multiples*. June 2015. Retrieved February 2020 2016 from http://www.marchofdimes.org/pregnancy/multiples-twins-triplets-and-beyond.aspx.

[8]Yeo, Kee Thai, et al. "Trends in Morbidity and Mortality of Extremely Preterm Multiple Gestation Newborns". *American Academy of Pediatrics* August 2015, Volume 136/Issue 2.

Conclusion

While greater access to prenatal care has improved birth outcomes in all groups, it still has not been able to minimize the black disparity when it comes to birth outcomes. There is no known explanation for the black- white gap that exists, and there is contention amongst researchers on how to evaluate and provide solutions for this gap. Lu and Haflon (2010) conceptualized birth outcomes as the end product of the entire life course of the mother and created a 12-point plan to address improving birth outcomes. This plan is comprehensive and for the purpose of this needs assessment includes only a few points. Within the study, there is emphasis on improving healthcare for African American women by providing inter-conception care for women with previous adverse pregnancy outcomes and increasing access to preconception care for African American women. The increase of preconception health counseling has been a reoccurring theme within this needs assessment as a viable solution based on the birth outcomes presented by the data. Inter-conception health is also a viable strategy as mothers with poor birth outcomes are more likely to have a subsequent poor birth outcome. Collectively, the data for the majority of birth outcomes in these counties are related to characteristics that the birth mother has control over, therefore, inter-conception care could positively impact subsequent birth outcomes. Another point made by the study is strengthening African American families and communities through the coordination and integration of family support services and creating reproductive social capital in the African American communities. The concept of reproductive social capital is emerging and focuses on increasing the connection between black pregnant women and their local community (Lu & Haflon 2010). Like other communities, there is a strong faith-based presence in the black community in these counties with a potential for furthering reproductive social capital.

The recurring theme of racial disparity is present when discussing births by unwed mothers. The known societal shift in norms around the definition of the family unit is reflected in the steady increase in births to unwed mothers, yet there is a disproportionate shift amongst black women. In these counties, births to unwed black mothers occur at a rate of three times that of their white counterparts and the percentages in these counties among black women are well above the state average. It would seem that the link between unmarried mothers and poor birth outcomes is the lack of consistent financial support from the father, which equates to low socioeconomic status (SES) for the mother and it is well documented that a low maternal SES is a risk factor for preterm births, LBW and VLBW outcomes. The anomaly is that research points to the presence of the father being more vital to positive birth outcomes than just financial security as when education and SES is accounted for among unwed mothers, the black-white birth outcome disparity still exist (Reichman *et. al*). Determining the root cause for the disproportionate marital status among black women is a task beyond the scope of this needs assessment. It is clear that this is a risk factor that is affecting the birth outcomes for black women in JMT and service delivery needs to focus on engaging fathers.

Education status has continued to be a reliable tool in assessing the overall health of a population. The fact is that those with a higher education level are more equipped to navigate complex healthcare systems and mobilize resources better than those with little to no education. This can be said without taking into consideration that a lower education level increases the likelihood of having an SES below the poverty line. Although the trend line is improving over time, the data illustrates all three counties are below the state average for high school completion among birthing mothers. Maternal education has serious implications on the health of a fetus. Considered to be the

most powerful determinant of health, it was found that mothers with low levels of education, who lived in rural areas were vulnerable to neonatal deaths, and particularly to death related to immaturity- related conditions (Luo *et al*). The low maternal education rates in JMT adds to the complexity of the social atmosphere in these communities that make its health concerns less ambiguous. While high school completion rates are subpar amongst JMT, it is of little value knowing this fact by itself as these communities are also deprived of employment opportunity and access to healthcare. The low education rates do not make pinpointing a characteristic as a culprit amongst these communities, but it does clarify the overall picture.

Very closely related to low maternal education is the issue of teen pregnancy and teen pregnancy recidivism. It is well known that the likelihood of a child to be raised in abject poverty increases if that child is born to a teen mother. Birth outcomes among this population also has poor prospects with teen pregnancy being linked to very pre-term delivery, pre-term delivery, LBW, VLBW and neonatal mortality (Chen, *et al*). Within the JMT communities, this characteristic is a major issue among teens in Taylor County. However, the trend line for Taylor is moving in the right direction, and births to teens are decreasing. Jefferson County has seen a recent increase in both teen births and teen pregnancy recidivism. This problem is conducive to poor conditions that span several disciplines from public health and social welfare to economic growth in the community. It is a perpetual problem that increase the vulnerable population and decreases the working population. Evaluation of the existing service intervention is needed to pinpoint the limitations and create strategies to address the needs.

The lower breastfeeding rate among black women in the JMT area is reflective of the literature with black infants being breastfed less than their white counter parts when considering ever being breastfed and exclusively being breastfed (Li *et. al*). While breastfeeding has more implications in child outcomes than it has in birth outcomes, the lack of breastfeeding does provide the opportunity to make generalizations about other characteristics of the mother. One third of working mothers return to work within 3 months after the birth of their baby and babies that are placed into daycare are less likely to breastfeed (Li et al). Breastfeeding is less common in women who receive WIC benefits and it is well documented that most low-income mothers know the health benefits of breastfeeding, but lack the peer and family support, face barriers at school and work and receive information not conducive to breastfeeding (Li et al). The black pregnant women in JMT are dually identified as the working poor and face the same barriers in these communities that are cited in the literature. Strategies to improve the breastfeeding rate among black women in JMT can be drawn on the outcome of the surveys for why women choose not to breastfeed.

In the recent decade there has been an influx of women entering the workforce and more women now than ever are the primary source of income in their households. This trend has trickled over into the realm of maternal and infant health as more women have opted to have children at a later age, if at all. While there have been numerous advancements in medicine to make women more comfortable in making this decision, there are still maternal and fetal health implications that arise when having a child at an advance maternal age (AMA). These risks include genetic disorders and maternal complications, which have implications on birth outcomes. It is a trend across Florida as a whole that more women are having babies within the AMA age group and it is steadily increasing with time and acceptance. This is not true within the communities of JMT. All three counties are well below the Florida average for women giving birth over the age of 35. This information is significant as it provides a clear picture of the women in these communities, socially. It is a trend amongst women to delay child bearing to pursue educational

and career goals, which usually lead to higher socioeconomic status. It is apparent based on the data presented on AMA births that educational pursuits and career advancement is not a priority for the women in JMT overall. The educational status of the communities and teen pregnancy rates demonstrate that the poor birth outcomes in these communities are in relation to poverty—as a result of poor education and the high burden of cost associated with children— rather than complications due to having a baby at an advanced maternal age.

It is well documented in medical research that multiple gestation is linked to poor outcomes, especially spontaneous pre-term birth and LBW/VLBW (Royer, 2007). Within the JMT communities multiple births is increasing, especially in Taylor County. Multiples are associated with low birth weight and prematurity and these statistics are congruent with an increase in the number of multiple gestation births.

The characteristics of the birth mother provides a limited understanding of the birthing population of JMT. Like the analysis of infant mortality and birth outcomes it reveals that there are significant differences between the three counties. What can be determined from the analysis thus far is that there are factors outside of the health of the birth mother that has significant implications on her unborn child. Some of these factors have different levels of influence and others are outside of the control of the birth mother.

Additional resources

Lu, M.C. & Halfon, N. (2003)"Racial and ethnic disparities in birth outcomes: a life-course perspective." *Maternal and child health journal* 7.1 (2003): 13-30.

Reichman, N.E., Hamilton, E.R., Hummer, R.A. & Padilla, Y.C. (2008). Racial and Ethnic Disparities in Low Birthweight among Urban Unmarried Mothers. *Maternal Child Healthy Journal* 12, 204-215

Li, R., Darlins, N., Maurice, E., Barker, L., Grummer-Strawn, L.M. (2005). Breastfeeding rates in the United States by Characteristics of the child, mother or family: The 2002 National Immunization Survey. *Pediatrics*, 115 (1) 31-37.

Lou, Z., Wilkins, R., Kramer, M.S. (2006). Effect of Neighborhood income and maternal education on birth outcomes: a population- based study. *Canadian Medical Association Journal*, 174 (10) 1415-1421.

Chen, X.K., Wen, S.W., Fleming, N., Demissie, K., Rhoads, G.G., Walker, M. (2007). Teenage pregnancy and adverse birth outcomes: a large population based retrospective cohort study. *International Journal of Epidemiology*. Accessed February 2020 https://www.ncbi.nlm.nih.gov/pubmed/17213208.

Royer, H. (2009). Separated at birth: US twin estimates of the effects of birth weight. *American Economic Journal: Applied Economics*, *1*(1), 49-85.

HEALTHY START SYSTEM OF CARE

At the core of maternal and child health interventions in Florida is the Healthy Start system of care. Developed under statutory authority in 1992, this system includes a community-based approach to improving maternal and child health. This is accomplished through the 32 Healthy Start Coalitions statewide which are the local evaluators, policy advocates, and planners of community and programmatic strategies to improve birth and developmental outcomes. The role of the Coalitions also includes programmatic oversight of the home visiting services through the care coordination system, referred to as Healthy Start services.

The current Healthy Start program in Florida was updated March 2019 to incorporate the most promising evidence-based practices since its inception. Over the last 27 years, emerging evidence and interventions have developed in the areas of Perinatal Depression, Intimate Partner Violence, Developmental Screening and Referral, and Substance Abuse Screening and Interventions. These concepts are now included in the Healthy Start program delivery system, whose guidelines were finalized and rolled out for implementation in March 2019.

Measuring proper dosing and intensity for current Healthy Start services is of great importance to the Healthy Start Coalition, both from the perspective of managing contractual obligations for the subcontracted providers of service, but also as an assurance of optimal birth outcomes related to intervention. Healthy Start includes targeted support services that address identified risks. The range of Healthy Start services available to pregnant women, infants and children up to age three include:

- A triage system of reaching every pregnant woman and infant and funneling participants into service models that best meet the needs of the family, including other home visiting services, namely Connect services
- Outreach, information, referral and community referrals and support to assure access to needed services
- Screening and intervention pathways for high-risk prenatals, including Family Goal Planning, and education using the Partners for a Healthy Baby™ curriculum
- Screening and intervention pathways for perinatal depression
- Screening and intervention pathways for tobacco use
- Screening and intervention pathways for Intimate Partner Violence and Substance Abuse
- Inter-conception education and counseling
- Psychosocial and nutritional counseling
- Childbirth, breastfeeding and parenting support and education
- Home visiting

While each of the interventions is designed to address risks, the primary intake instrument for Healthy Start is a universal prenatal risk screen, a questionnaire developed to assess a woman's overall risk for a poor birth outcome, administered at her first obstetric visit. The Healthy Start Coalitions assure this risk screening is in place as a universal assessment of the risk of the population, and to identify participants that are eligible for Healthy Start services with a score of 6 or higher for pregnant women and 4 or higher for infants. The Healthy Start system model is one of identification and funneling into care those pregnant women in need of services to support optimal birth outcomes. This needs assessment will address the efficacy of the triage system, the intensity of services, and the

screening infrastructure.

Healthy Start Screening/Connect

Effective July 1, 2018 the State of Florida adopted the Coordinated Intake and Referral (CI&R) System of identifying and triaging families statewide. This is a two-part system that involves collaboration at the community provider level as well as a service component (Connect). In February 2016 the Coalition launched its community project, to create collective impact for services to the 0-3 population by partnering to ensure there is no "wrong door" for entry into care for this population. The end result has been an effective multi-agency agreement that holds agencies accountable for the seamless system of care and optimal utilization of minimal resources. The product of the community-level work has been to create a system for which pregnant women and infants are identified and funneled into care through the coordinated system. Figure 11.1 below is the local Decision Tree for JMT, which depicts the service flow when participants are identified and in need of services.

Figure 11.1
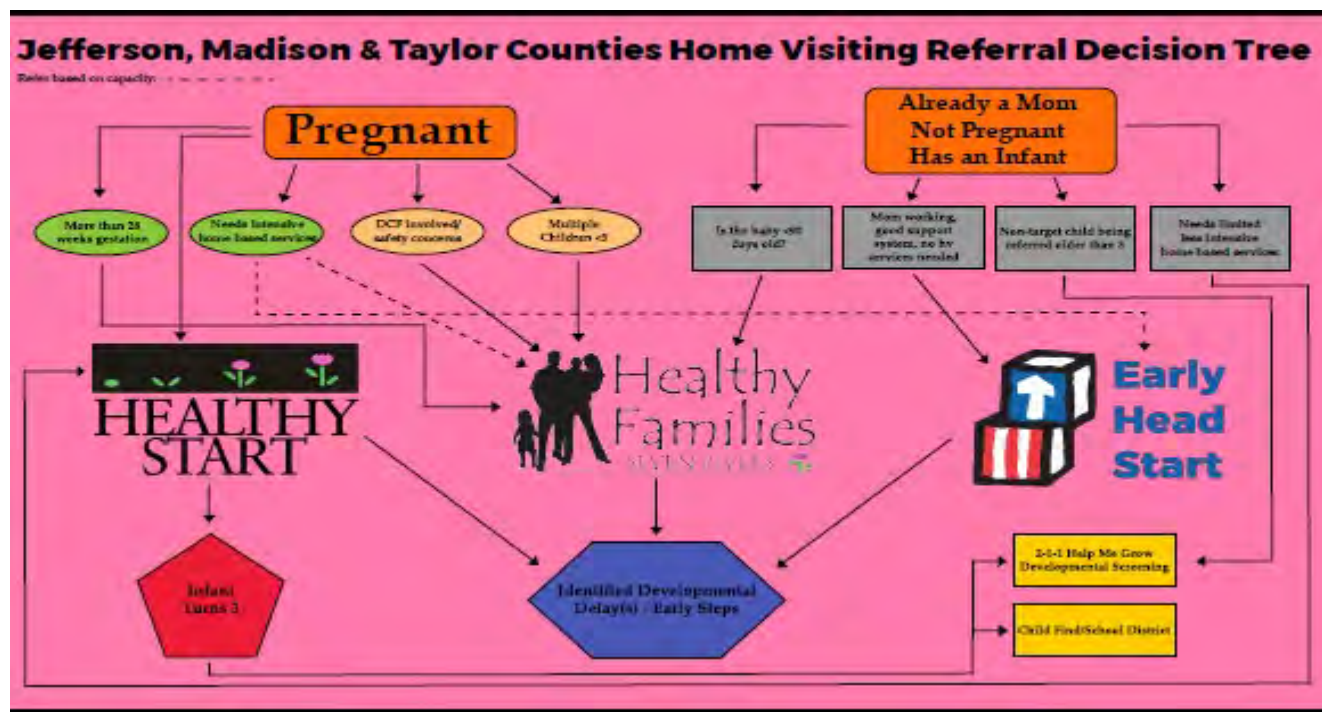
Connect Services

Once a prenatal or infant screen, or community referral has been received, the Connect worker will use the Decision Tree to help guide a participant to the services that can best meet the family's needs. All programs for which the participant qualifies are explained and offered, and the participant is the decision-maker. At a minimum, all participants are referred to 211. The effectiveness of this triage system called *Connect* statewide is limited by the prenatal and infant screening infrastructure. All prenatal and infant screens in Florida are documented in Florida's Health Management System (HMS). If the screen is referred by the provider and the participant has consented to

share information, then the screen is shared through a bridge between the HMS and Well Family System, the web-based case management system used by Connect.

Prenatal Risk Screening

The screening infrastructure for Healthy Start is an indicator of the volume of births, validation of the risk population and the established goal for providing resources to pregnant women in need. The tables below capture the basic elements of the prenatal screening infrastructure in Jefferson, Madison and Taylor Counties, Florida.[1]

There are major concerns with the trends in the screening infrastructure, evidenced by the data in Table 11.1:

1. The percentage of women screened has fallen below 60% for the most recent fiscal year, down from the five-year average of 75%.
2. The percentage of positive screens (those at greatest risk and need for intervention) has increased from 36% to 45% over the last five years.
3. The total number of prenatal screens that actually are shared with the Connect system through the Well Family user interface is only 54% (number agreeing to share information divided by number consenting to screen). Therefore, if the prenatal screen was the total source of referrals for pregnant women, then Connect could only contact 54% of all pregnant women in these counties.

Table 11.1[1]

PRENATAL SCREENING RESULTSSCREENS FROM JULY 2018 THROUGH JUNE 2019 AS OF 08/12/2019

COALITION/COUNTY	EST # OF PREGNANT WOMEN	TOTAL FORMS PROCESSED	TOTAL CONSENTING TO SCREEN	PERCENTAGE OF WOMEN SCREENED	PERCENTAGE OF WOMEN CONSENTED	NUMBER OF POSITIVE SCREENS	PERCENTAGE OF POSITIVE SCREENS	NUMBER BASED ON OTHER FACTORS	NUMBER CONSENTING TO PARTICIPATE	NUMBER AGREEING TO SHARE INFORMATION
HSC of Jefferson/Madison/Taylor Counties										
Jefferson	117	60	52	44.44%	86.67%	19	36.54%	9	28	27
Madison	197	137	126	63.96%	91.97%	63	50.00%	21	83	75
Taylor	226	160	140	61.95%	87.50%	60	42.86%	22	80	71
COALITION TOTAL:	540	357	318	58.89%	89.08%	142	44.65%	52	191	173
GRAND TOTAL:	540	357	318	58.89%	89.08%	142	44.65%	52	191	173

PRENATAL SCREENING RESULTSSCREENS FROM JULY 2017 THROUGH JUNE 2018 AS OF 08/11/2018

COALITION/COUNTY	EST # OF PREGNANT WOMEN	TOTAL FORMS PROCESSED	TOTAL CONSENTING TO SCREEN	PERCENTAGE OF WOMEN SCREENED	PERCENTAGE OF WOMEN CONSENTED	NUMBER OF POSITIVE SCREENS	PERCENTAGE OF POSITIVE SCREENS	NUMBER BASED ON OTHER FACTORS	NUMBER CONSENTING TO PARTICIPATE	NUMBER AGREEING TO SHARE INFORMATION
HSC of Jefferson/Madison/Taylor Counties										
Jefferson	130	78	65	50.00%	83.33%	39	60.00%	6	44	40
Madison	176	147	132	75.00%	89.80%	71	53.79%	18	89	81
Taylor	229	231	200	87.34%	86.58%	62	31.00%	25	85	79
COALITION TOTAL:	535	456	397	74.21%	87.06%	172	43.32%	49	218	200
GRAND TOTAL:	535	456	397	74.21%	87.06%	172	43.32%	49	218	200

PRENATAL SCREENING RESULTSSCREENS FROM JULY 2016 THROUGH JUNE 2017 AS OF 08/05/2017

COALITION/COUNTY	EST # OF PREGNANT WOMEN	TOTAL FORMS PROCESSED	TOTAL CONSENTING TO SCREEN	PERCENTAGE OF WOMEN SCREENED	PERCENTAGE OF WOMEN CONSENTED	NUMBER OF POSITIVE SCREENS	PERCENTAGE OF POSITIVE SCREENS	NUMBER BASED ON OTHER FACTORS	NUMBER CONSENTING TO PARTICIPATE	NUMBER AGREEING TO SHARE INFORMATION
HSC of Jefferson/Madison/Taylor Counties										
Jefferson	129	93	78	60.47%	83.87%	33	42.31%	9	42	38
Madison	186	154	139	74.73%	90.26%	68	48.92%	28	93	88
Taylor	232	174	146	62.93%	83.91%	56	38.36%	18	69	63
COALITION TOTAL:	547	421	363	66.36%	86.22%	157	43.25%	55	204	189
GRAND TOTAL:	547	421	363	66.36%	86.22%	157	43.25%	55	204	189

PRENATAL SCREENING RESULTSSCREENS FROM JULY 2015 THROUGH JUNE 2016 AS OF 08/13/2016

COALITION/COUNTY	EST # OF PREGNANT WOMEN	TOTAL FORMS PROCESSED	TOTAL CONSENTING TO SCREEN	PERCENTAGE OF WOMEN SCREENED	PERCENTAGE OF WOMEN CONSENTED	NUMBER OF POSITIVE SCREENS	PERCENTAGE OF POSITIVE SCREENS	NUMBER BASED ON OTHER FACTORS	NUMBER CONSENTING TO PARTICIPATE	NUMBER AGREEING TO SHARE INFORMATION
HSC of Jefferson/Madison/Taylor Counties										
Jefferson	118	88	76	64.41%	86.36%	28	36.84%	7	35	29
Madison	211	162	151	71.56%	93.21%	73	48.34%	24	95	81
Taylor	244	248	208	85.25%	83.87%	56	26.92%	21	76	76
COALITION TOTAL:	573	498	435	75.92%	87.35%	157	36.09%	52	206	186
GRAND TOTAL:	573	498	435	75.92%	87.35%	157	36.09%	52	206	186

Postnatal Screening

While prenatal risk screening is statutorily required in Florida to assess pregnant women and to allocate resources for intervention, so is postnatal screening. This occurs in conjunction with preparation of the birth certificate, usually by birth records clerks in delivery facilities across Florida. For the counties of Jefferson, Madison and Taylor, there are no delivery hospitals and Tallahassee Memorial and Capital Regional Medical Center located in Leon County are the two primary delivery facilities where this screening occurs. Infants who score a "4" or more on this instrument are considered at risk of poor developmental outcomes and death in the first year of life.

One of the caveats for how this score can be easily achieved for these counties is a simple reflection of the demographics. As stated earlier, these counties have high rates of minorities, unmarried pregnant women, and low economic status. Therefore, an infant that scores a "4" based on 1) race black, 2) mother unmarried, 3) Medicaid as payer source, and 4) father's name not on birth certificate, is a common occurrence. Data for postnatal screens is presented below in Table 11.2 and interpreted:

1. The screening rate is a measurement of how many screens were done in conjunction with the birth certificate, for nearly 100% completion rate.
2. The number of positive screens is decreasing from 32% to 23% of all infant screens scoring 4 or more for JMT.
3. The number of actual participants is down from 36% to **23%** which means that the local birthing facilities are not referring 100% of positive screens. If 100% of all positive screens and those Referred for Other Factors (BOOFS) were referred to Healthy Start/Connect, then the participation rate would be closer to 41%.
4. Intervention is needed to increase the referral rate for positive screens at local birthing facilities that serve Jefferson, Madison & Taylor Counties.
5. Intervention is needed to increase the number of referred for other factors.

Table 11.2[1]

| INFANT SCREENING RESULTSBIRTHS FROM JULY 2018 THROUGH JUNE 2019 AS OF 08/12/2019 | | | | | | | |
COALTION/COUNTY	TOTAL # OF INFANTS	TOTAL SCREENED	PERCENTAGE OF INFANTS SCREENED	NUMBER OF POSITIVE SCREENS	POSITIVES AS PERCENT OF TOTAL SCREENED	REFERRED BASED ON OTHER FACTORS	NUMBER OF PARTICIPANTS
HSC of Jefferson/Madison/Taylor Counties							
JEFFERSON	117	117	100.00%	29	24.79%	20	31
MADISON	197	196	99.49%	53	27.04%	30	50
TAYLOR	226	225	99.56%	40	17.78%	46	47
COALITION TOTAL:	540	538	99.63%	122	22.68%	96	128
GRAND TOTAL:	540	538	99.63%	122	22.68%	96	128

| INFANT SCREENING RESULTSBIRTHS FROM JULY 2017 THROUGH JUNE 2018 AS OF 08/17/2018 | | | | | | | |
COALTION/COUNTY	TOTAL # OF INFANTS	TOTAL SCREENED	PERCENTAGE OF INFANTS SCREENED	NUMBER OF POSITIVE SCREENS	POSITIVES AS PERCENT OF TOTAL SCREENED	REFERRED BASED ON OTHER FACTORS	NUMBER OF PARTICIPANTS
HSC of Jefferson/Madison/Taylor Counties							
JEFFERSON	130	108	83.08%	24	22.22%	24	25
MADISON	176	159	90.34%	38	23.90%	33	47
TAYLOR	229	189	82.53%	45	23.81%	46	52
COALITION TOTAL:	535	456	85.23%	107	23.46%	103	124
GRAND TOTAL:	535	456	85.23%	107	23.46%	103	124

| INFANT SCREENING RESULTSBIRTHS FROM JULY 2016 THROUGH JUNE 2017 AS OF 08/07/2017 | | | | | | | |
COALTION/COUNTY	TOTAL # OF INFANTS	TOTAL SCREENED	PERCENTAGE OF INFANTS SCREENED	NUMBER OF POSITIVE SCREENS	POSITIVES AS PERCENT OF TOTAL SCREENED	REFERRED BASED ON OTHER FACTORS	NUMBER OF PARTICIPANTS
HSC of Jefferson/Madison/Taylor Counties							
JEFFERSON	129	89	68.99%	28	31.46%	10	24
MADISON	186	139	74.73%	45	32.37%	17	46
TAYLOR	232	189	81.47%	53	28.04%	13	49
COALITION TOTAL:	547	417	76.23%	126	30.22%	40	119
GRAND TOTAL:	547	417	76.23%	126	30.22%	40	119

| INFANT SCREENING RESULTSBIRTHS FROM JULY 2015 THROUGH JUNE 2016 AS OF 08/14/2016 | | | | | | | |
COALTION/COUNTY	TOTAL # OF INFANTS	TOTAL SCREENED	PERCENTAGE OF INFANTS SCREENED	NUMBER OF POSITIVE SCREENS	POSITIVES AS PERCENT OF TOTAL SCREENED	REFERRED BASED ON OTHER FACTORS	NUMBER OF PARTICIPANTS
HSC of Jefferson/Madison/Taylor Counties							
JEFFERSON	118	114	96.61%	43	37.72%	7	39
MADISON	211	211	100.00%	61	28.91%	28	83
TAYLOR	244	240	98.36%	72	30.00%	21	84
COALITION TOTAL:	573	565	98.60%	176	31.15%	56	206
GRAND TOTAL:	573	565	98.60%	176	31.15%	56	206

Since the total number of screens entering the system has decreased in the last few years and the Connect system came online in July 2018, the Coalition evaluated the total number of all referrals coming into the system to determine the impact to the Healthy Start System of care. Figure 11.2 depicts a system concern; total referrals to the entire system of care are down 48%, and overall impact to Healthy Start is a reduction in referrals of **42%.**

Figure 11.2[2]

CI&R Referrals
Performance Analysis
July 1, 2018 - May 31, 2019

Provider: Madison County Health Dept					Provider: Madison County Health Dept					Provider: Taylor County Health Dept			
County: Jefferson					County: Madison					County: Taylor			
Total WFS Referrals (Screens)	Healthy Start	Healthy Families			Total WFS Referrals (Screens)	Healthy Start	Healthy Families			Total WFS Referrals (Screens)	Healthy Start	Healthy Families	
1	1	0	Jul-18		5	5	0	Jul-18		5	5	0	Jul-18
2	2	0	Aug-18		5	5	0	Aug-18		10	9	1	Aug-18
3	3	0	Sep-18		6	6	0	Sep-18		3	3	0	Sep-18
1	1	0	Oct-18		8	3	5	Oct-18		5	2	3	Oct-18
4	3	1	Nov-18		5	5	0	Nov-18		5	5	0	Nov-18
5	4	1	Dec-18		3	3	0	Dec-18		4	4	0	Dec-18
7	5	2	Jan-19		5	4	1	Jan-19		12	10	2	Jan-19
1	1	0	Feb-19		9	9	0	Feb-19		8	8	0	Feb-19
1	1	0	Mar-19		4	4	0	Mar-19		6	4	2	Mar-19
1	1	0	Apr-19		4	4	0	Apr-19		5	5	0	Apr-19
2	2	0	May-19		6	5	1	May-19		9	9	0	May-19
			Jun-19					Jun-19					Jun-19
28	24	4			60	53	7			72	64	8	
	86%	14%				88%	12%				89%	11%	

Statewide Averages

45448	32408	7213			Statewide:					Statewide:			
	71%	16%				71%	16%				71%	16%	

Total Number of Referrals In Well Family System					Total Number of Referrals In Well Family System					Total Number of Referrals In Well Family System			
July 1 2017 - May 31 2018	69				July 1 2017 - May 31 2018	139				July 1 2017 - May 31 2018	124		
July 1 2018 - May 31 2019	28				July 1 2018 - May 31 2019	60				July 1 2018 - May 31 2019	72		
-41%					-43%					-58%			

					Overall	332							
						160							
						-48%							

Due to the changes in the system and the overall decrease in screens entering the system, the Coalition engaged the Florida State University in 2018 to evaluate the impact to families when infants are not properly identified and funneled into services. That study provided support for the birthing facilities to increase referrals to the system and was shared with local birthing facilities. The full report and the latest version of both the prenatal and postnatal screens are included in the Appendix.

Healthy Start Services

Until July 1, 2015 Healthy Start services were entered, collected, and analyzed using Florida's Health Management System (HMS). After that point, services were collected in the Well Family System (WFS) case management system. A service is measured as a unit of time (in one-quarter hour increments) devoted to encounters with Healthy Start participants. The basic concept of intensity of services is the duration of time and frequency of encounters should be consistent with risk appropriate care and optimization of resources allocated for services.

The total services for the last four fiscal years is below in Table 11.3. From this data, there are identifiable trends.

1. Even though total clients served have decreased 53%, the assumption is that the same number of services would be provided to fewer clients, as the overall model shift has been to increase intensity and duration for the highest risk clients. That is not reflective in the data, since services are also down 45%.
2. The reduction in the total number of clients is correlated to the reduction in total referrals (screens).

Table 11.3

	2018-2019	2017-2018	2016-2017	2015-2016
Coalition				
Total Clients	290	479	495	543
Total Services	4495	7532	9089	9937
Jefferson/Madison CHD				
Total Clients	165	291	306	307
Total Services	2569	4554	5798	5920
Taylor CHD				
Total Clients	128	189	189	238
Total Services	1926	2978	3291	4017

Substance Use among HS Participants

For Healthy Start participants, those involved with substance use are identified through coding appropriately for referrals. This identifier is significant in that it labels participant data in order to properly assess the need for substance abuse intervention services. Healthy Start Redesign components regarding Substance Abuse Screening instruments and Intervention Pathways address identification of substance use on a much broader scale for Healthy Start. As these interventions were approved in March 2019, the data is beyond the scope of this needs assessment.

Although we know that locally, substance use during pregnancy is a significant problem, many private providers in Leon County do not routinely test for substance use. Therefore, there is no means to determining substance abuse use for the entire pregnant population, as only those using the local health department for prenatal care are universally screened for substance use. Healthy Start participants may disclose during Healthy Start service provision, which would also generate an identifier used in documentation. Effective with March 2019 services, this information can be extracted from the tools administered to establish baseline data. This is not available for this

assessment. However, there is limited 2016 BRFSS data on adults binge drinking and marijuana use that can be used to compare behaviors with other adults in Florida to establish a general understanding of risk for females of reproductive age. Tables 11.4 and 11.5 provide a picture of these counties as having a lower tendency for alcohol and substance abuse than the state of Florida.[3]

Table 11.4

Adults who engage in heavy or binge drinking, Overall				
Year	Jefferson	Madison	Taylor	Florida
2002	17.7% (11.5 - 23.9)	10.9% (7.1 - 14.6)	12.2% (8.8 - 15.6)	16.4% (15.5 - 17.4)
2007	17.1% (11.8 - 24.0)	10.0% (7.0 - 14.1)	18.6% (14.1 - 24.2)	16.2% (15.3 - 17.2)
2010	13.2% (9.0 - 17.4)	15.0% (9.8 - 20.2)	14.4% (9.1 - 19.7)	15.0% (14.0 - 16.0)
2013	12.9% (7.9 - 17.9)	13.9% (8.1 - 19.7)	9.9% (5.7 - 14.1)	17.6% (16.6 - 18.6)
2016	8.5% (5.3 - 11.8)	11.6% (8.1 - 15.2)	12.9% (8.7 - 17.0)	17.5% (16.7 - 18.4)

Table 11.5

Adults who used marijuana or hashish during the past 30 days, Overall				
Year	Jefferson	Madison	Taylor	Florida
2016	3.5% (1.2 - 5.7)	3.4% (1.4 - 5.4)	4.7% (2.1 - 7.4)	7.4% (6.7 - 8.0)

[1]Healthy Start Reports, Division of Public Health Statistics and Performance Management accessed February 2020 http://www.flpublichealth.com/HS/rdPage.aspx

[2]Connect service data, via the Well Family System accessed November 2019 https://gbcmc.com/wfsd/main/wfs.asp

[3] Florida Behavioral Risk Factor Surveillance System telephone survey conducted by the Centers for Disease Control and Prevention (CDC) and Florida Department of Health Division of Community Health Promotion

COMMUNITY INPUT

During the needs assessment process, the Coalition administers a survey to its Coalition members to determine if the agency is meeting the needs of its members and appropriately engaging the membership in efforts to improve maternal and child health. The results are included over the next several pages and establish that the Coalition, according to 37 members, feel the Coalition is the catalyst for change in the maternal and child health system.

Q1 The Healthy Start Coalition of JMT is involved in community projects and endeavors related to maternal and child health.

Answered: 37   Skipped: 0
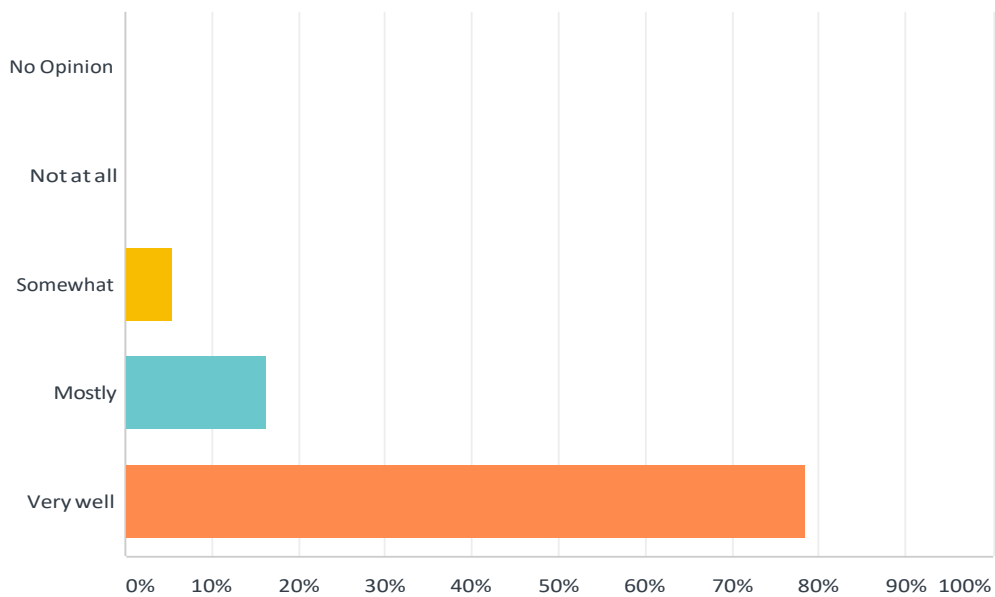
ANSWER CHOICES	RESPONSES	
No Opinion	0.00%	0
Not at all	0.00%	0
Somewhat	5.41%	2
Mostly Very	16.22%	6
well	78.38%	29
TOTAL		37

Q2 The Healthy Start Coalition of JMT is visible in the community conducting activities that inform and educate the public aboutHealthy Start.

Answered: 37   Skipped: 0
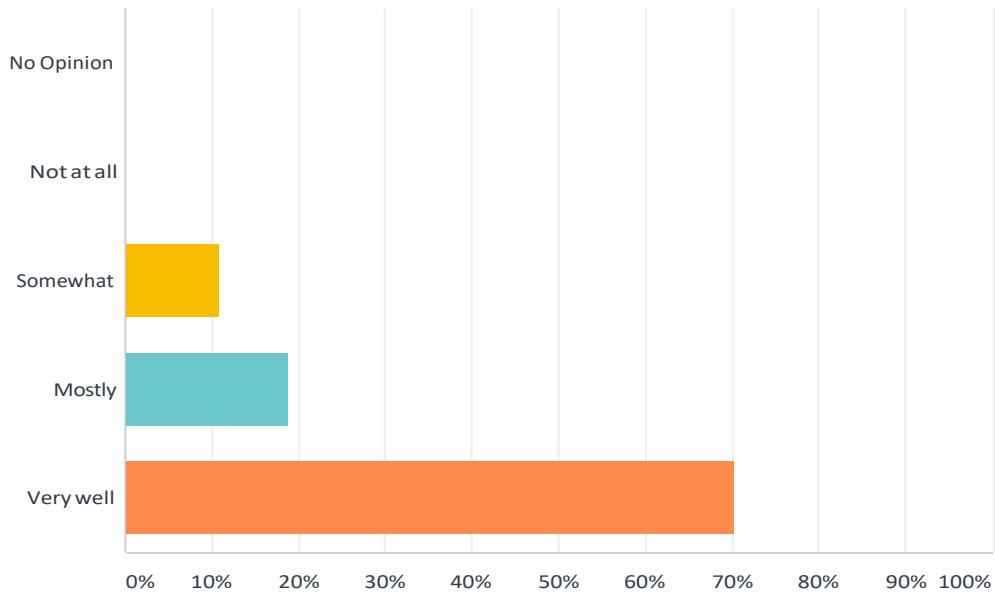
ANSWER CHOICES	RESPONSES	
No Opinion	0.00%	0
Not at all	0.00%	0
Somewhat	10.81%	4
Mostly Very	18.92%	7
well	70.27%	26
TOTAL		37

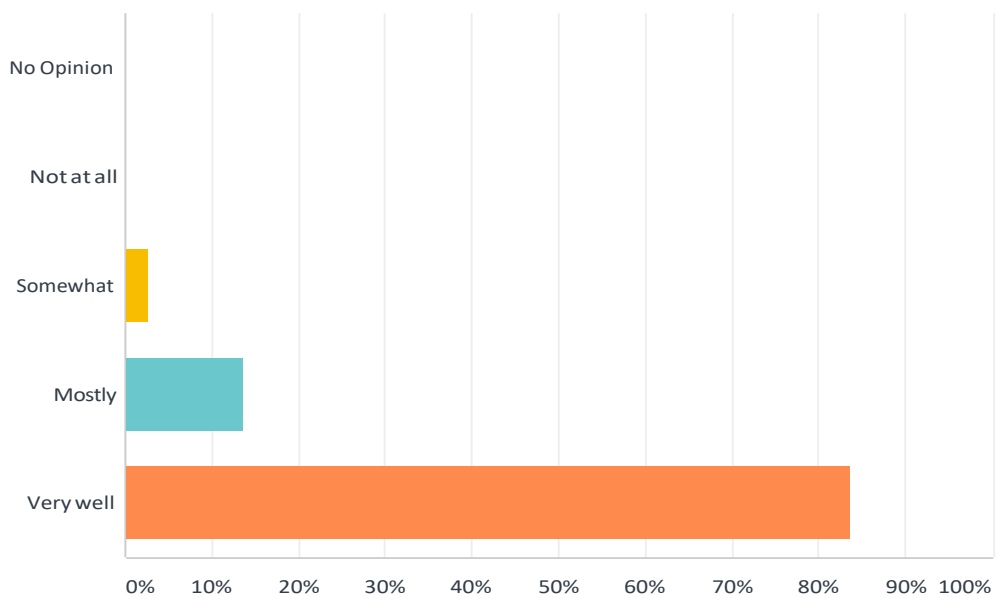Q3 The Healthy Start Coalition of JMT seeks community input and support in improving maternal and infant health in the county.

Answered: 37   Skipped: 0
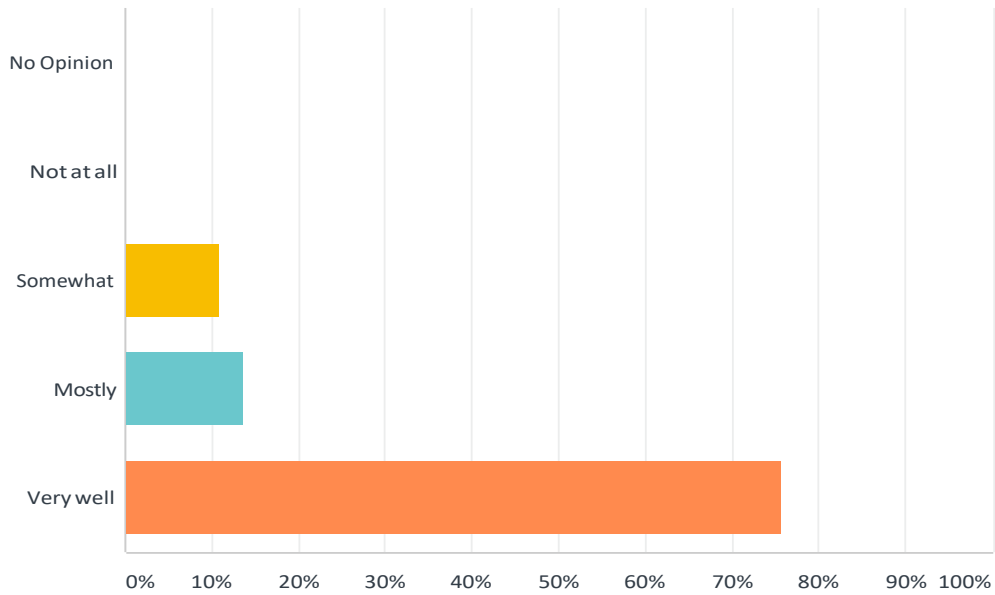
ANSWER CHOICES	RESPONSES	
No Opinion	0.00%	0
Not at all	0.00%	0
Somewhat	10.81%	4
Mostly Very	13.51%	5
well	75.68%	28
TOTAL		37

Q4 The Healthy Start Coalition of JMT partners in the coordination of services in Jefferson, Madison & Taylor counties as related to improving maternal and infant health.

Answered: 37   Skipped: 0

ANSWER CHOICES	RESPONSES	
No Opinion	0.00%	0
Not at all	0.00%	0
Somewhat	2.70%	1
Mostly Very	13.51%	5
well	83.78%	31
TOTAL		37

Q5 The Healthy Start Coalition of JMT works to prevent duplication of services in the community.
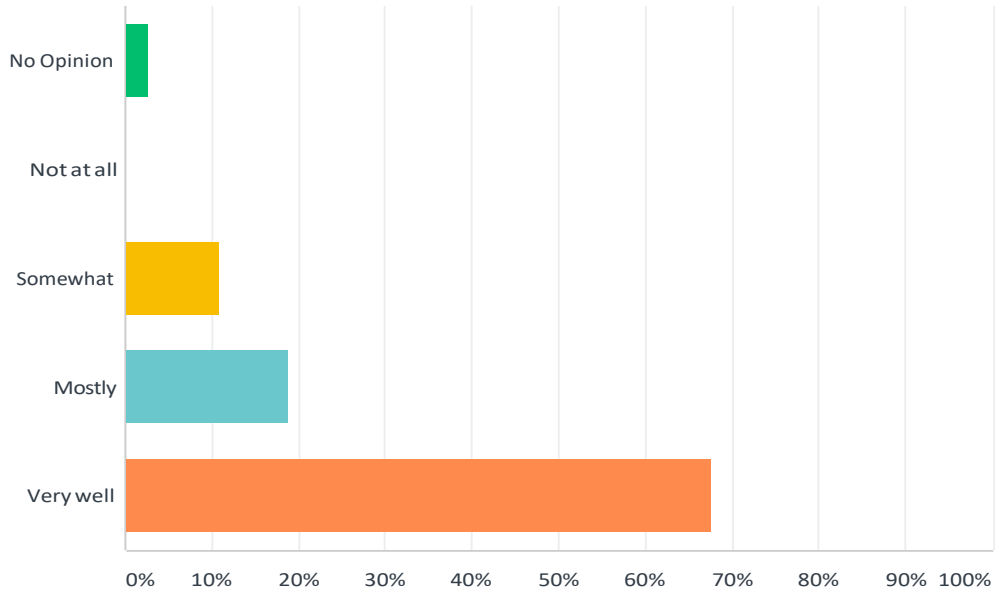
ANSWER CHOICES	RESPONSES	
No Opinion	2.70%	1
Not at all	0.00%	0
Somewhat	10.81%	4
Mostly	18.92%	7
Very well	67.57%	25
TOTAL		37

Q6 The Healthy Start Coalition of JMT collaborates with community partners in attaining mutual goals.
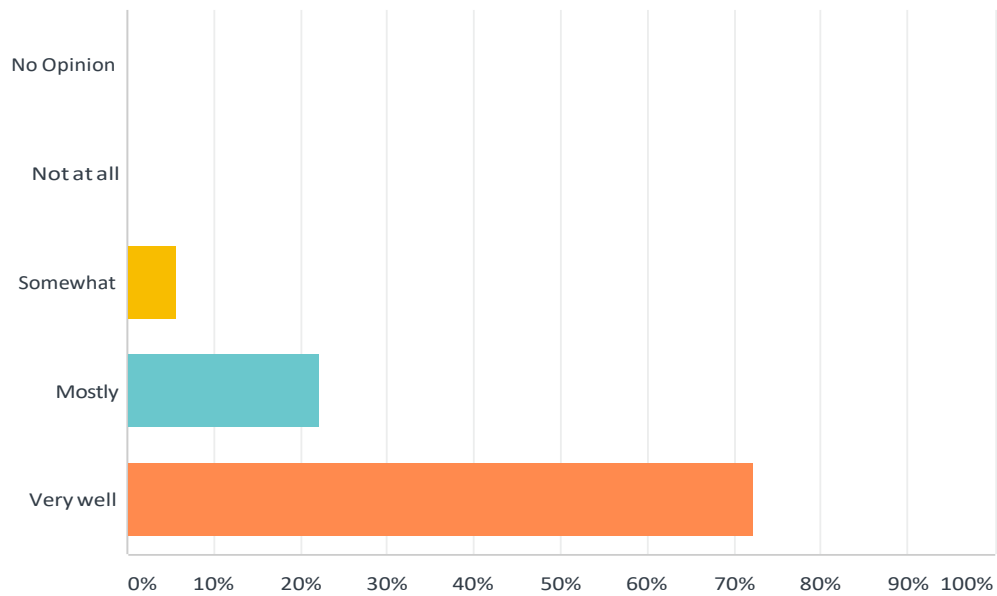
ANSWER CHOICES	RESPONSES	
No Opinion	0.00%	0
Not at all	0.00%	0
Somewhat	5.56%	2
Mostly Very	22.22%	8
well	72.22%	26
TOTAL		36

Q7 In regards to interactions with Coalition STAFF, please rate the following

Answered: 37   Skipped: 0
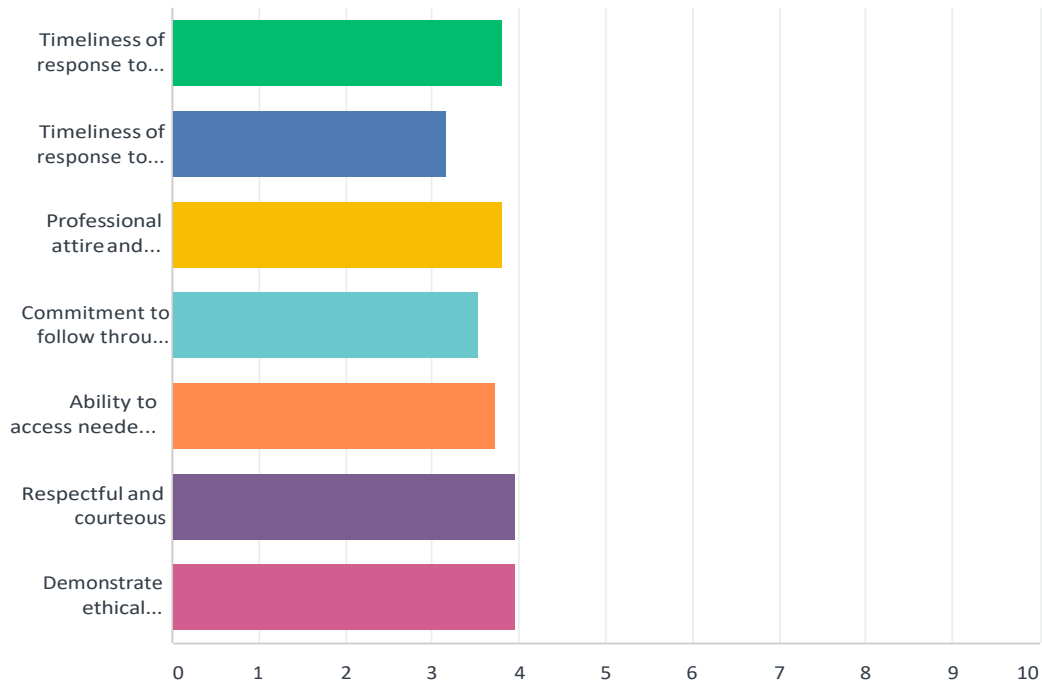
	NO OPINION	NOT AT ALL	SOMEWHAT	MOSTLY	VERY WELL	TOTAL	WEIGHTED AVERAGE
Timeliness of response to emails	2.70%	0.00%	0.00%	8.11%	89.19%		
	1	0	0	3	33	37	3.81
Timeliness of response to telephone calls	18.92%	0.00%	0.00%	8.11%	72.97%		
	7	0	0	3	27	37	3.16
Professional attire and demeanor	0.00%	0.00%	2.70%	13.51%	83.78%		
	0	0	1	5	31	37	3.81
Commitment to follow through with requests	5.41%	0.00%	0.00%	24.32%	70.27%		
	2	0	0	9	26	37	3.54
Ability to access needed information	2.70%	0.00%	0.00%	16.22%	81.08%		
	1	0	0	6	30	37	3.73
Respectful and courteous	0.00%	0.00%	2.70%	0.00%	97.30%		
	0	0	1	0	36	37	3.95
Demonstrate ethical business practices	0.00%	0.00%	0.00%	5.41%	94.59%		
	0	0	0	2	35	37	3.95

PROVIDER INPUT

In addition to Coalition members, the Coalition also annually surveys its subcontracted providers of service to determine the Coalition's need for adjustments to managing the subcontracts and communicating important programmatic issues. The results of the survey for 9 respondents at the local county health departments are below. The results indicate a collaborative relationship between the Coalition and its subcontractors.

Q1 Interactions with staff are cooperative and collaborative.

Answered: 9   Skipped: 0

ANSWER CHOICES	RESPONSES	
No	0.00%	0
Opinion	0.00%	0
	11.11%	1
Not at all	11.11%	1
	77.78%	7
Somewhat		
TOTAL		9

Mostly

Very well

Q2 All materials requested from staff are sent by the promised date.

Answered: 9   Skipped: 0
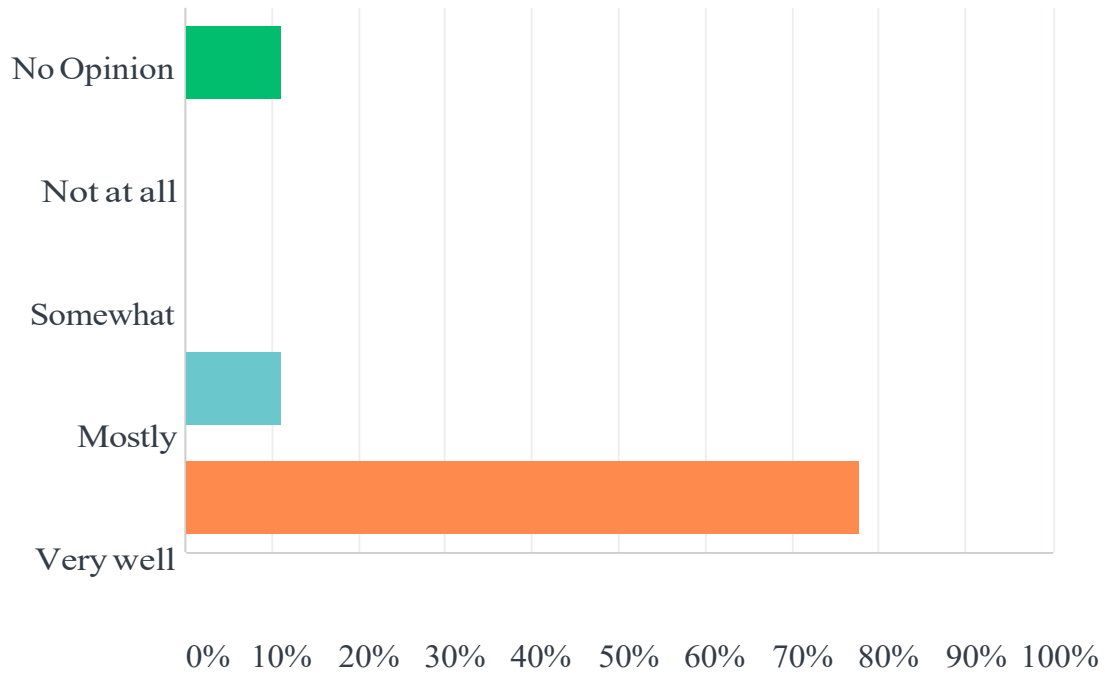
ANSWER CHOICES	RESPONSES	
No Opinion	11.11%	1
Not at all	0.00%	0
Somewhat	0.00%	0
Mostly	11.11%	1
Very well	77.78%	7
TOTAL		9

Q3 Staff are courteous and respectful in their communications.

Answered: 9   Skipped: 0
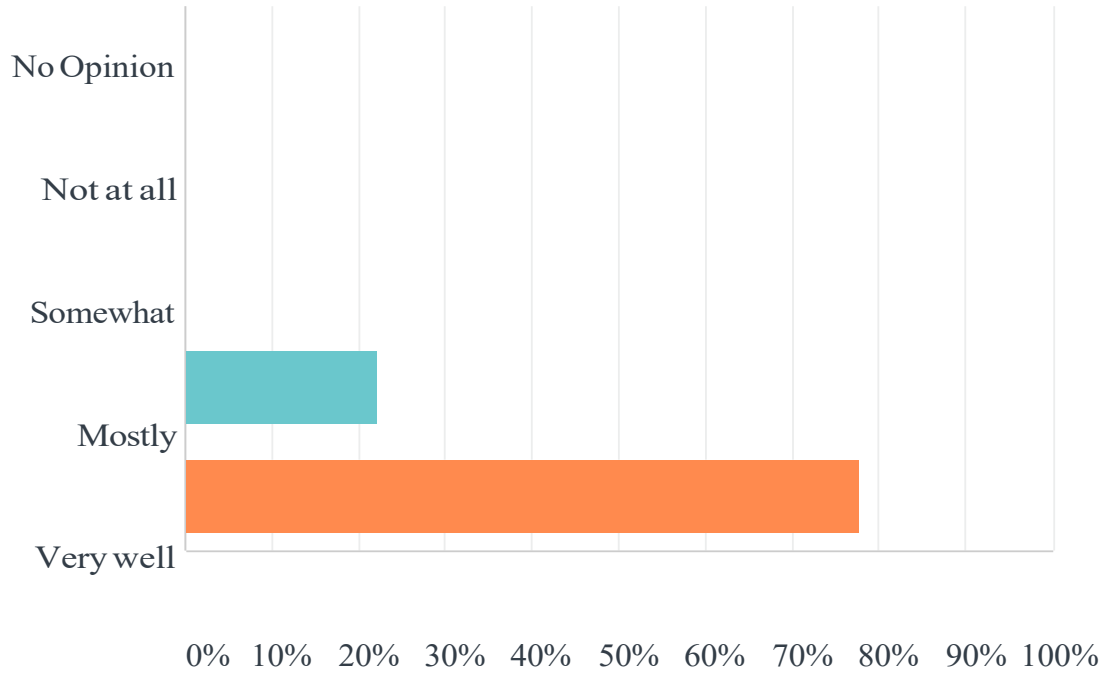
ANSWER CHOICES	RESPONSES	
No	0.00%	0
Opinion	0.00%	0
	0.00%	0
Not at all	22.22%	2
	77.78%	7
Somewhat		
TOTAL		9

Mostly

Very well

Q4 Changes in procedures are communicated in a timely manner.

Answered: 9   Skipped: 0
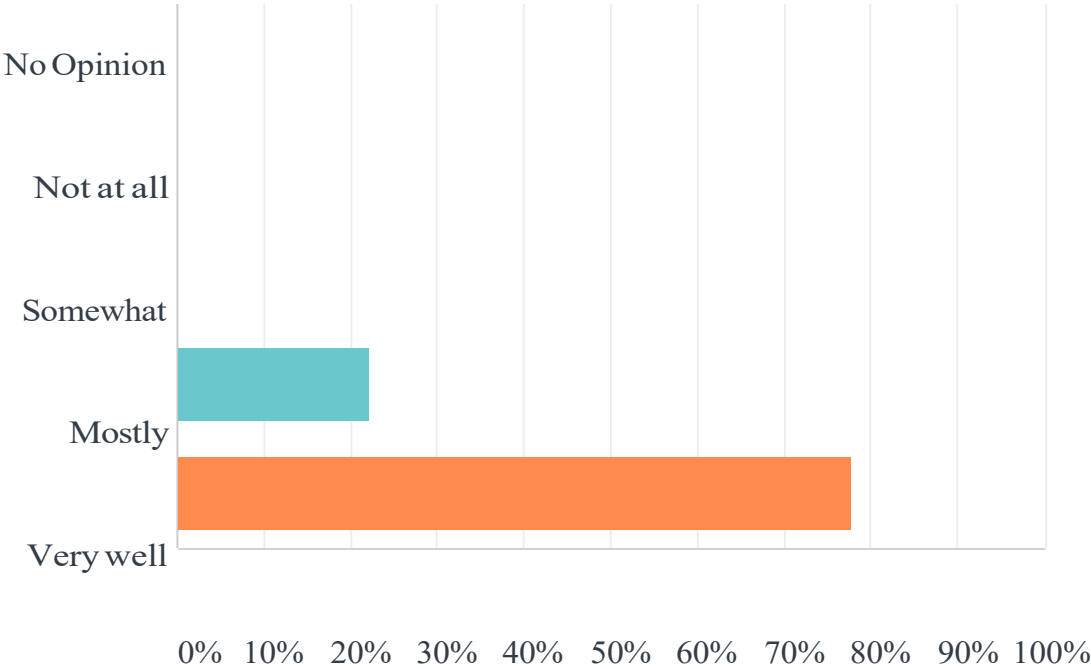
ANSWER CHOICES	RESPONSES	
No	0.00%	0
Opinion	0.00%	0
	0.00%	0
Not at all	22.22%	2
Somewhat	77.78%	7
TOTAL		9

Mostly

Very well

Q5 Presentation materials prepared by staff are comprehensive, professional, and accurate.

Answered: 9   Skipped: 0
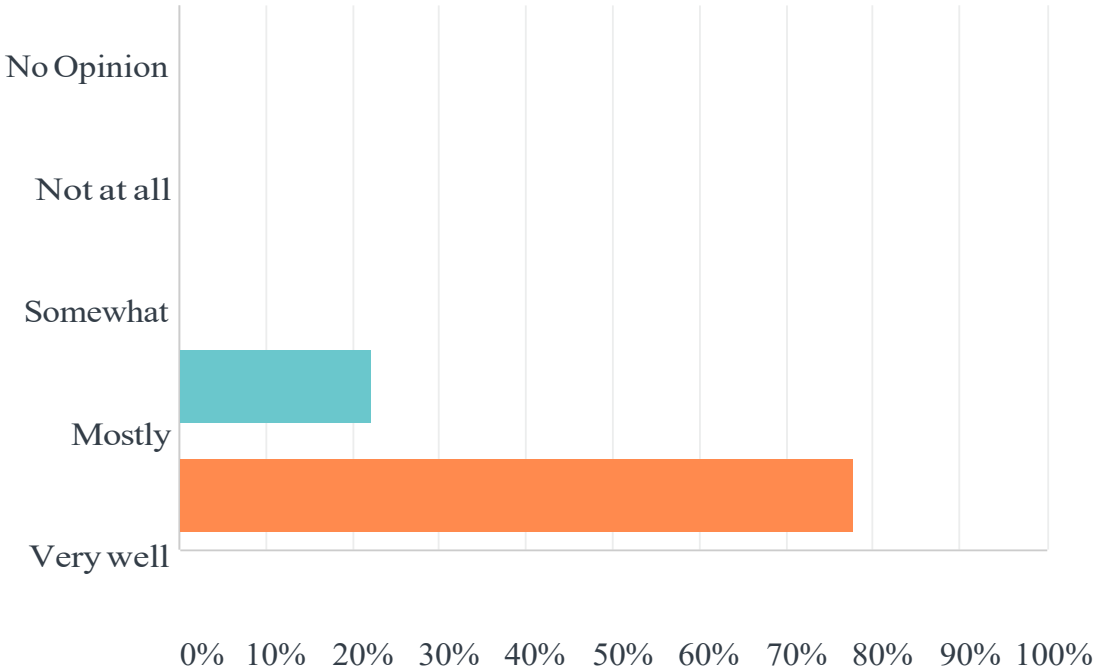
ANSWER CHOICES	RESPONSES	
No	0.00%	0
Opinion	0.00%	0
	0.00%	0
Not at all	22.22%	2
Somewhat	77.78%	7
TOTAL		9

Mostly

Very well

Q6 Staff possess the knowledge to answer my questions or can identify the resources where information can be obtained.

Answered: 9   Skipped: 0
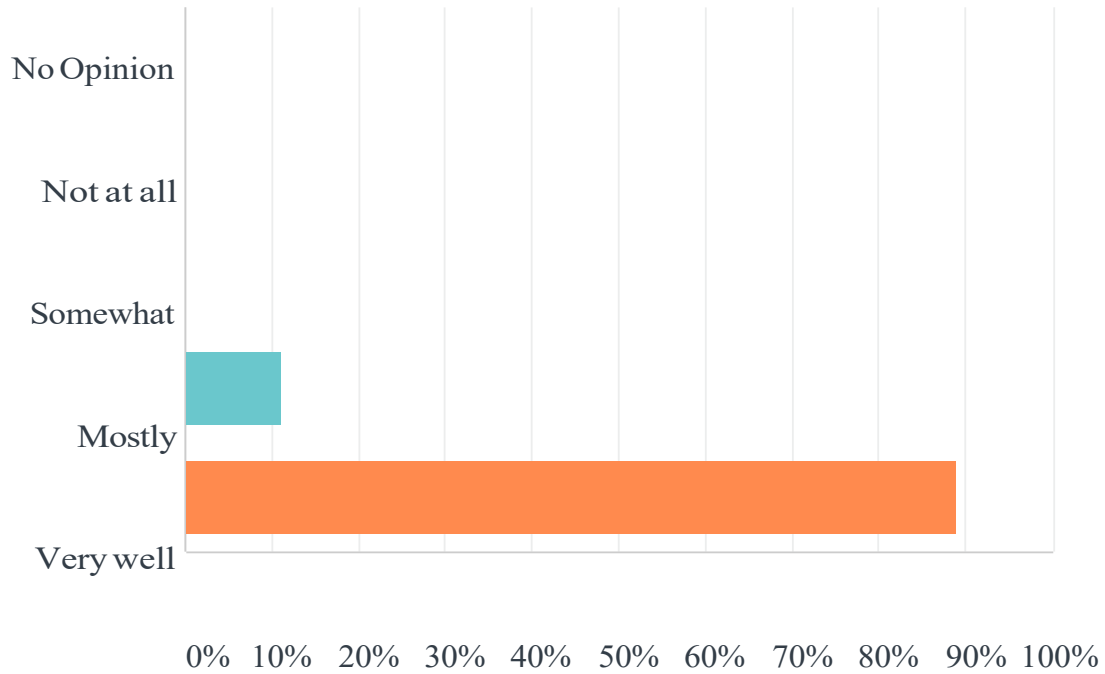
ANSWER CHOICES	RESPONSES	
No	0.00%	0
Opinion	0.00%	0
	0.00%	0
Not at all	11.11%	1
Somewhat	88.89%	8
TOTAL		9

Mostly

Very well

CONSUMER INPUT

The Coalition has gathered consumer input in various ways for this needs assessment cycle:

1) through an annual distribution of Healthy Start programmatic surveys December 2019, response rate of 4% - 3 Surveys returned, 73 mailed

2) through the evaluation of Women's Health Workshops, the cornerstone of the Coalition's Preconception Campaign strategy. The Coalition's Certified Community Health Worker conducts two workshops in each county each year to educate on the 16 topics of women's health.

3) through a breastfeeding survey conducted with Healthy Start participants and through the CHD obstetric clinics, to solicit feedback on why women choose NOT to breastfeed. These survey results are included in the Breastfeeding data presented earlier.

4) through focus groups in December 2018 specifically designed to provide input into the State's Family Planning Waiver renewal

Healthy Start Services

On December 1, 2019 the case management team for Healthy Start sent 73 total surveys via mail to their open participants. 3 were mailed to the Coalition for a return rate of 4%. The Coalition will require a strategy in the subcontractors' 2020/2021 Quality Assurance Plan to increase the return rate for surveys. The results of the submission is included on the next page.

HEALTHY START

Healthy Start Coalition of Jefferson,
Madison & Taylor Counties, Inc.

Satisfaction Survey

Administered to all clients on caseload as of December 1, 2019
26 administered in Taylor, and 47 administered in Madison/Jefferson Total=73
Returned by 2/21/2020 = 3, for a response rate of 4%

What you think about the Healthy Start Program is important to us. Knowing what we can do better will improve services for all pregnant women. Please take a moment to answer the following questions. Please fill in one circle for each question.

	Yes	No	Not Applicable
1. When your Healthy Start Care Coordinator contacted you, were you treated with respect?	3		
2. Did your Healthy Start Care Coordinator explain the Healthy Start program?	3		
3. Did you understand this explanation?	3		
4. Was your Healthy Start Care Coordinator friendly and helpful?	3		
5. Did your Healthy Start Care Coordinator answer your questions?	3		
6. While in the Healthy Start Program did you receive information about how *to take care of yourself and your baby?*	3		
7. Were you directed to other agencies in the community to assist you?	2		1
8. If so, did you receive the service?	1		2
9. Was the Healthy Start program useful to you?	3		
10. Comments: **1. Ms Linda is an amazing support! 2. My experience with Healthy Start has been wonderful. Ms. Kristie, Ms. Linda and Ms. Sarah are wonderful! 3. Great program, very helpful!**			

Please use the back of this survey for additional comments or suggestions.
Thank you for your time. Your answers and comments will be kept confidential.
Please return this in the stamped envelope provided with this survey.
**The survey should be mailed to:**
Healthy Start Coalition of Jefferson, Madison & Taylor Counties Inc.
PO Box 568 Greenville, FL 32331

Women's Workshop Evaluations

There were 112 women participating in women's health education workshops between December 2017 and 2018 with a relatively equal distribution between the three counties. Based on the evaluation outcomes, participants felt they could have learned more about Folic Acid, Vaccinations and Environmental Hazards, which the Coalition has responded with more materials on this subjects.
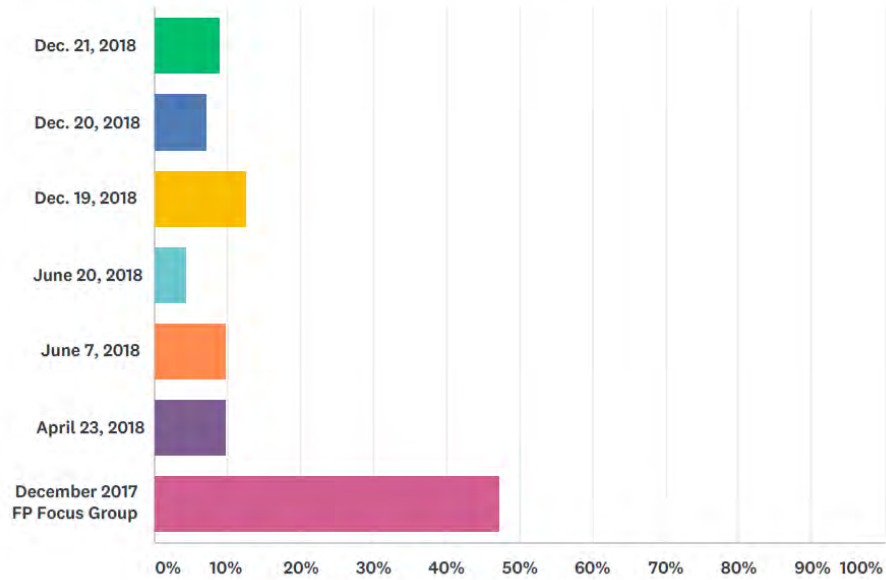
Q1 County

Answered: 112   Skipped: 0
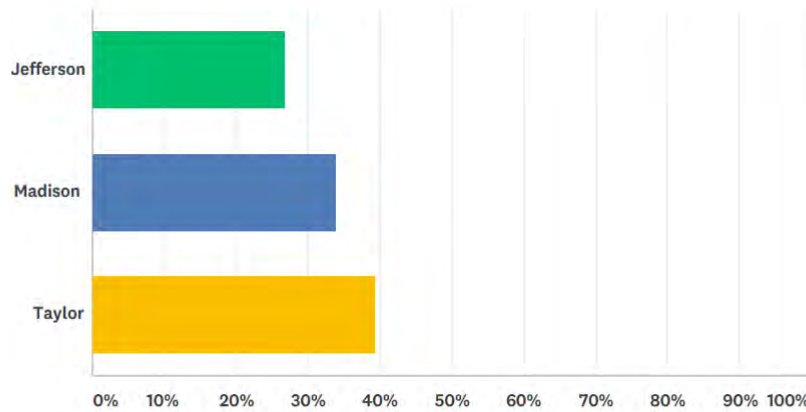
ANSWER CHOICES	RESPONSES	
Jefferson	26.79%	30
Madison	33.93%	38
Taylor	39.29%	44
TOTAL		112

Q2 Date of Workshop

Answered: 112   Skipped: 0

ANSWER CHOICES	RESPONSES	
Dec. 21, 2018	8.93%	10
Dec. 20, 2018	7.14%	8
Dec. 19, 2018	12.50%	14
June 20, 2018	4.46%	5
June 7, 2018	9.82%	11
April 23, 2018	9.82%	11
December 2017 FP Focus Group	47.32%	53
TOTAL		112

Q3 How a woman feels is a good measure of her health.

Answered: 111   Skipped: 1
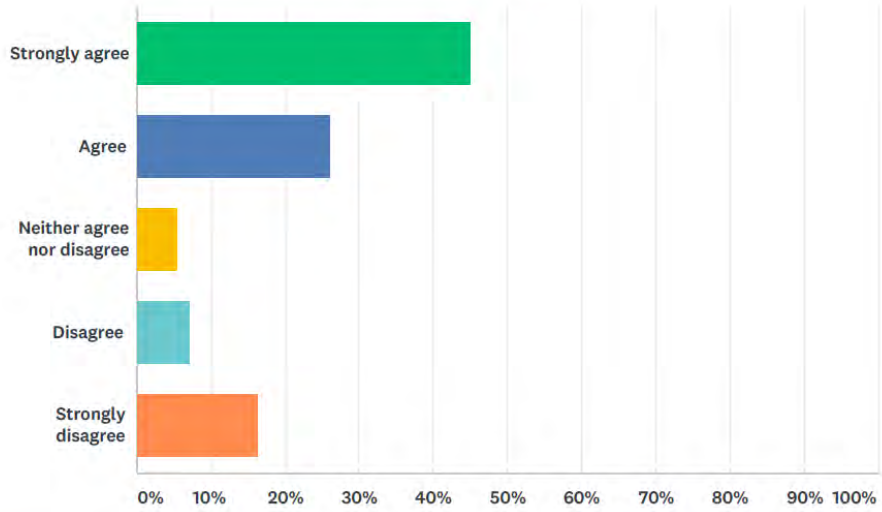
ANSWER CHOICES	RESPONSES	
Strongly agree	45.05%	50
Agree	26.13%	29
Neither agree nor disagree	5.41%	6
Disagree	7.21%	8
Strongly disagree	16.22%	18
Total Respondents: 111		

Q4 A woman should see a doctor only when she is sick or feels something is wrong with her health.
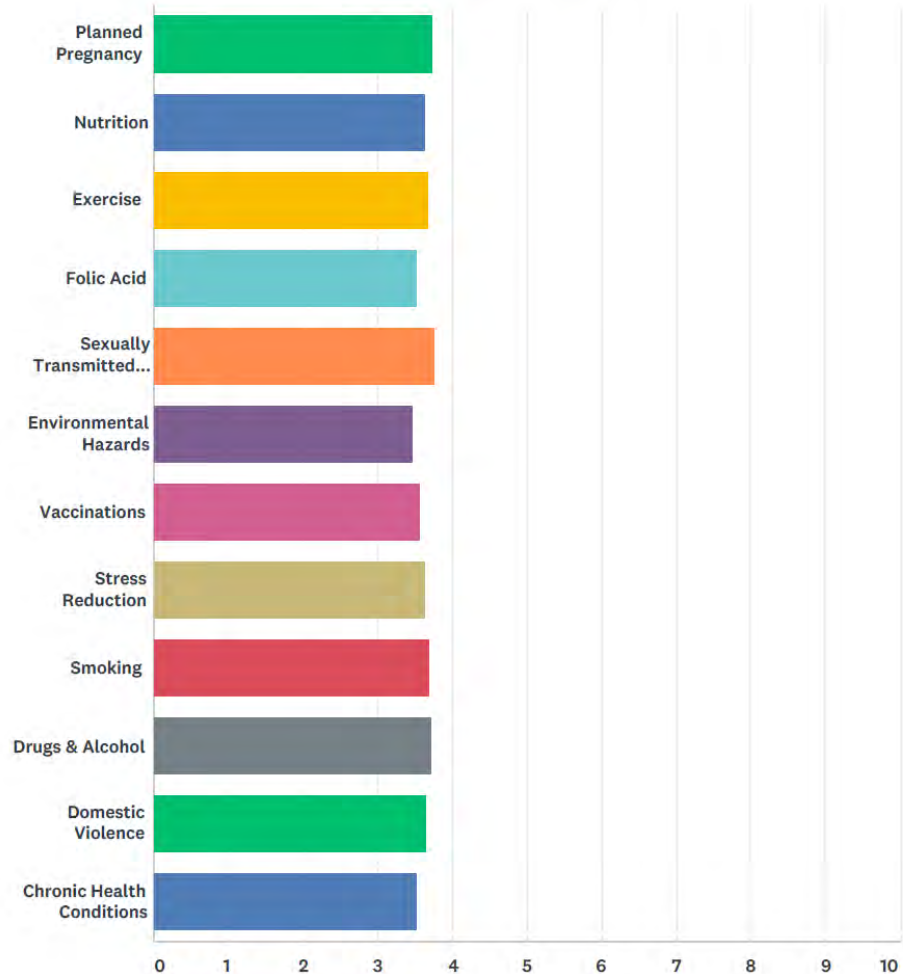
Answered: 111   Skipped: 1
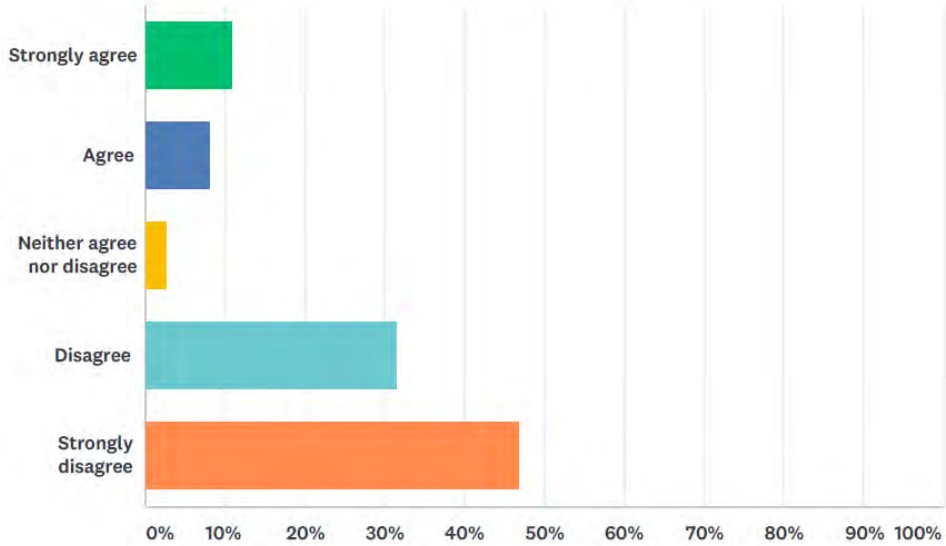
ANSWER CHOICES	RESPONSES	
Strongly agree	10.81%	12
Agree	8.11%	9
Neither agree nor disagree	2.70%	3
Disagree	31.53%	35
Strongly disagree	46.85%	52
Total Respondents: 111		

Q5 Based on what you have just learned, please rate your understanding of the following women's health topics:

Answered: 112   Skipped: 0

	POOR	FAIR	GOOD	EXCELLENT	NOT SURE	N/A	TOTAL	WEIGHTED AVERAGE
Planned Pregnancy	1.79% 2	0.89% 1	20.54% 23	73.21% 82	1.79% 2	1.79% 2	112	3.74
Nutrition	1.79% 2	1.79% 2	28.57% 32	66.07% 74	1.79% 2	0.00% 0	112	3.64
Exercise	0.00% 0	4.46% 5	24.11% 27	67.86% 76	1.79% 2	1.79% 2	112	3.68
Folic Acid	4.46% 5	7.14% 8	22.32% 25	62.50% 70	3.57% 4	0.00% 0	112	3.54
Sexually Transmitted Disease	1.79% 2	1.79% 2	16.96% 19	76.79% 86	2.68% 3	0.00% 0	112	3.77

Environmental Hazards	3.57% 4	8.04% 9	27.68% 31	58.93% 66	1.79% 2	0.00% 0	112	3.47
Vaccinations	2.68% 3	4.46% 5	28.57% 32	60.71% 68	3.57% 4	0.00% 0	112	3.58
Stress Reduction	3.57% 4	2.68% 3	23.21% 26	67.86% 76	2.68% 3	0.00% 0	112	3.63
Smoking	3.57% 4	3.57% 4	15.18% 17	75.00% 84	2.68% 3	0.00% 0	112	3.70
Drugs & Alcohol	1.79% 2	3.57% 4	16.96% 19	75.89% 85	1.79% 2	0.00% 0	112	3.72
Domestic Violence	3.57% 4	0.89% 1	23.21% 26	69.64% 78	2.68% 3	0.00% 0	112	3.67
Chronic Health Conditions	2.68% 3	6.25% 7	26.79% 30	62.50% 70	1.79% 2	0.00% 0	112	3.54

Q6 The Community Health Worker was knowledgeable about the topics presented/used appropriate teaching methods

Answered: 106   Skipped: 6
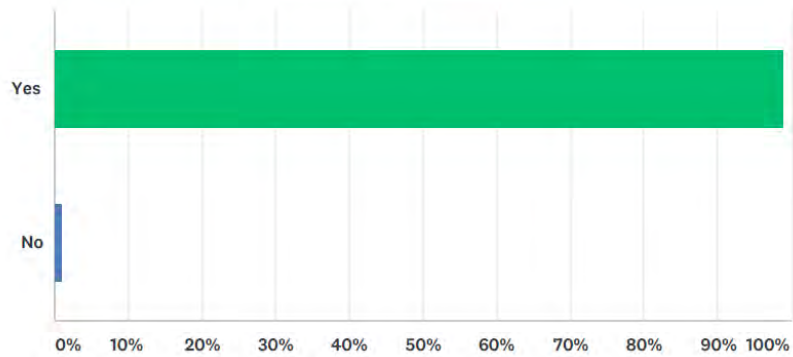
ANSWER CHOICES	RESPONSES	
Yes	99.06%	105
No	0.94%	1
Total Respondents: 106		

LARC/Family Planning Focus Groups
Conducted by: Michael Curtis, MBA
Madison Media Group

December 26, 2017

Long-Acting Reversible Contraception (LARC) – Family
Planning Focus Groups: Executive Summary; Questionnaire
Responses; Graphs and Tabulations

I. Executive Summary

Healthy Start Coalition of Jefferson, Madison & Taylor Counties
conducted five focus groups, consisting of 53 participants who
resided within their three-county service area, regarding their
familiarity with, and utilization of Long-Acting Reversible
Contraception (LARC). Comprised of a range of age, gender, and
race, the focus groups were additionally queried about family
planning, use of contraception in general, and birth control
activities with local medical professionals and facilities.

Discussion centered on three LARC methods:

1. Depo-Provera: aka "Depo" is an injection received from
    a nurse or doctor once every three months. The Depo
    shot, or DMPA, contains the hormone progestin.

2. Implant: The implant is a very small rod inserted under
    the skin of a woman's upper arm to provide birth
    control. Containing the hormone progestin, it's
    practically invisible and prevents pregnancy for up to 4
    years. Nexplanon and Implanon are the popular forms.

3. Intrauterine Device (IUD): and intrauterine device is a
    little, t-shaped piece of plastic inserted into the uterus to
    provide birth control. The 3 types of IUDs that use the
    hormone progestin include: Mirena, Skyla, and Liletta.

NOTE: Virtually all participants, with the exception of a few
teens, were familiar with each of these methods, although none
were familiar with the acronym, "LARC."

The prevailing sentiment (70 percent) was that birth control was an integral component of family planning and essential for the prevention of unplanned pregnancies. Regardless of this notion, however, numerous respondents firmly stated they had no intention of using birth control, including many who already had three children or more. In fact, over 50 percent of the latter added that they have no intention of having more children.

The vast majority, over 85 percent of the participants realized that LARC methods did not prevent sexually transmitted diseases (STDs), although fewer than 20 percent use barrier birth control, with or without LARC. Unfortunately, local STD statistics demonstrate those injudicious practices. In an introductory presentation on women's health conducted prior to each focus group, the community health worker exhaustively covered this topic to both engage the audience and set up the importance of family planning/LARC. Participants beyond pregnancy age strongly reinforced the messaging.

Several correlations emerged among the findings, although two were counter-intuitive. The first, noted above, were the mothers who stated they wanted no more children but didn't take birth control. The other was that younger participants, 25 and under, demonstrated greater family planning awareness and intent than presumably more mature mothers, 25-40, many of which summarily dismissed the concern. Education level and awareness were positively correlated, with over 75 percent of high-school graduates or higher expressing a connection to, and practice of, birth control/family planning. Income and marital status were not measured criteria.

Prior and current use of LARC revealed a common thread regarding side-effects, especially for Depo and weight gain, although Depo was still the most prevalent LARC to be tried. Over 90 percent of the women who had previously used Depo no longer used it for this and a few other medical reactions. The birth control pill was the other most popular previously-used method, notably among older mothers, although fewer were using it currently. Over 80 percent of this group stated difficulty in remembering to take it as their opposition. All prior implant users said they experienced either visual or physical discomfort, which was amplified by all who provided additional input. The IUD was used least, with one respondent detailing a serious infection that required medical care. Over 50 percent of attendees echoed her cautionary position regarding invasive LARC. No white participants (30 percent of focus group) are currently using LARC.

The majority of participants (60 percent) didn't have a medical home (OB/GYN) who they visited regularly, although most referenced a source for birth control information. Among those who had a medical home, over 80 percent stated that conversations regarding family planning had transpired with their doctors and/or attending medical staff. The remaining participants noted family, community health workers, and the Departments of Health as their primary sources of health education, with the later also being the most popular source (55 percent) for health services as well.

II. Questionnaire Responses

Facilitators encouraged elaboration, seeking detail for each of the 13 questions, which are outlined below. As sessions moved toward LARC-specific questions, facilitators further solicited individual responses to support statistical integrity.

1. Have you heard of the term called LARC? If so, what do you think it is?

No participant was familiar with the acronym, "LARC," although over 90 percent were familiar with one or more of the three methods discussed. Interestingly, during the women's health presentation that took place prior to the family planning focus groups, the community health worker defined "LARC" during the birth control segment. Anecdotally, the term "LARC" doesn't seem to resonate among the demographics represented.

2. How do you feel about using birth control?

A few respondents, fewer than 20 percent, were vehemently opposed to birth control, including a few for religious reasons; other were currently looking to get pregnant. Among those who did endorse it, several stated reasons beyond birth control, such as regulating or eliminating menstruation, and health benefits in general. For those who endorsed LARC, forgetting to take the pill and the unpopularity of barrier methods were the most common, which are expanded in a later question. When the topic of barrier methods arose while discussing STDs, 20 percent said they use them periodically.

3. Name some reasons you don't use birth control.

A few non-supported health opinions were mentioned, although over 70 percent of the feedback fell into two categories: (1) unable to get pregnant; or (2) looking to get pregnant. The remaining women and men appeared to be ignorant on the topic, causing others to extol the need for Healthy Start, Healthy Families, Departments of Health, and community outreach to ensure all have access to family planning and birth control education.

4. How does your partner feel about using birth control?

Of those acknowledging a partner, over 90 percent stated either, "it's up to me; he goes along with whatever I choose; It's my body, and the like," although several added, "He doesn't want to use a condom."

5. What type of birth control are you currently using or have you used in the past?

Facilitators reinforced the importance of this question, as it sets the groundwork for the upcoming LARC-specific questions. Please refer to the illustration, "Current and Prior Birth Control Use" by race in Section III for details.

6. How are you planning for pregnancy and additional children in the future?

Among those stating the desire for pregnancy or additional children in the future, fewer than 15 percent noted baby spacing, over 70 percent stated practicing healthy lifestyles, including eating healthy and smoking cessation, and 25 percent noted a connection to Healthy Start and other prenatal/maternal health services. Additional incidental responses included income, education, and career planning.

7. What discussion have you had with your doctor about family planning?

Among those of child-bearing age, 30 percent had a medical home, and of those over 80 percent stated that attending staff asked them about family planning, although most said they "don't pay much attention to it." Conversely, 15 percent declared that those exchanges with their doctor were a key component in their overall family planning, which was a priority in their lives. The remaining stated their connection to local community health workers and Departments of Health versus a family doctor (OB/GYN).

8. LARC means "Long-Acting Reversible Contraception" and includes a female receiving an IUD, implant in the arm, or Depo Provera shot. All are methods of long term but temporary contraception. Which of these methods have you heard about and/or used in the past?

As noted, none knew the acronym "LARC," although 95 percent of participants had heard of one or more LARC methods. Again, please refer to the noted illustration for usage details.

9. What are some reasons you may or may not want to use a LARC method of birth control?

Want to use:
- Get it and forget about it; don't have to keep up with it
- Prevent unplanned pregnancies; don't want kids
- Legislation may change; get it now while it's covered

Don't want to use:
- Depo causes weight gain
- Implants are visible and/or uncomfortable
- Hormonal deregulation
- IUD infections
- Side-effects in general
- Concerned it isn't reversible
- Promotes indiscriminate sexual behavior
- Menstruation issues
- Doesn't prevent STDs

10. Where would you go to find information on LARC?

The most popular answers (90 percent collectively) were family, friends, community health workers, and Departments of Health, with a few stating the Internet. A visible connection to the Internet grew though, once it was mentioned. Others smiled declaring, "… meetings like this … and the facilitators," who appreciated the acknowledgement but reiterated that they were not medical practitioners. A few were also aware that family planning waivers were part of the Department of Health.

11. What are the benefits you see of using LARC?

The responses to this question overlapped those in Q9, with the most common being that when LARC is performed, one doesn't have to think about it.

12. What do you see as the drawbacks of using LARC?

This, too, was addressed in Q9. Two points were amplified: (1) LARC doesn't prevent STDs and indirectly promotes unprotected sex; and (2) Health issues, especially when accompanied by smoking and /or a lack of exercise, can be triggered and intensified.

13. Is there anything you would like us to know about your opinions on birth control and family planning?

Besides reinforcing statements previously noted, numerous participants asked why more outreach isn't conducted, especially among teens. Realizing that local school districts are opposed to, or at least cool on the subject, they suggested that Healthy Start and related organizations promote family planning/birth control education more visibly and publically; increase public awareness of the Title X Medicaid Waiver.
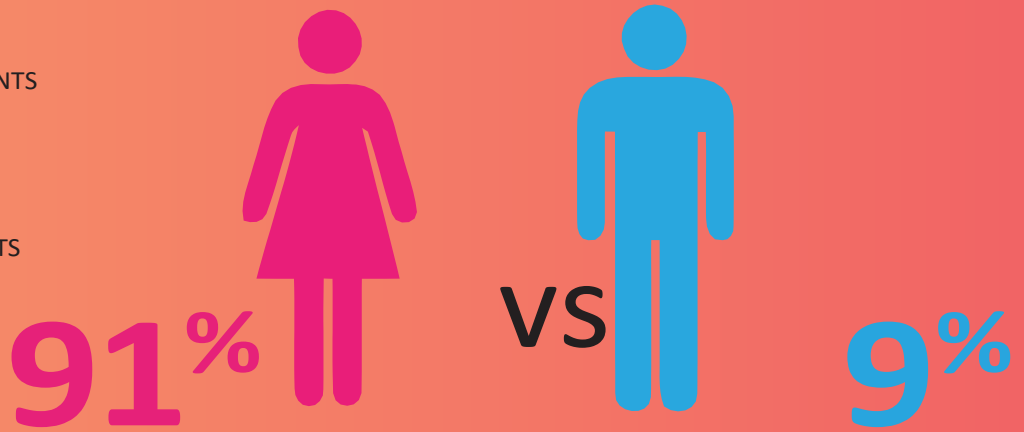
III. Graphs and Tabulations

FAMILY PLANNING FOCUS GROUP

GENDER

● 48 FEMALE RESPONDENTS

● 5 MALE RESPONDENTS

91% VS **9%**

RACE

| | 5 | 10 | 15 | 20 | 25 | 30 | 35 |

African American — 35

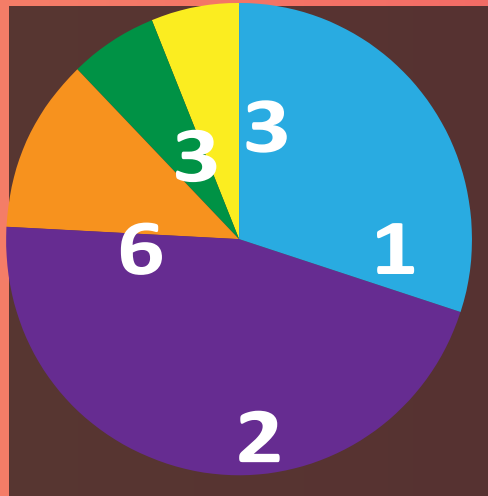White/Caucasian — 18

EDUCATION

●

● 32% Less than High School

● 45% High School

● 11% 2 Year

● 6% 4 Year

● 6% Postgraduate

3   3

3

6   1

2

AGE

15-19	20-29	30-39
19%	8%	38%

40-49	50-59	60+
19%	8%	8%

NUMBER OF CHILDREN

0
1
2
3
4
5
6
7

CURRENT BIRTH CONTROL USE

	African American	White/Caucasian
	7	0
	0	0
	0	0
	7	0
	0	1
	2	4
	6	7

PRIOR BIRTH CONTROL USE

	African American	White/Caucasian
	10	3
	5	2
	2	2
	7	3
	13	6
	0	0
	2	5

Breastfeeding Survey Results

Q1 County

Answered: 20   Skipped: 0
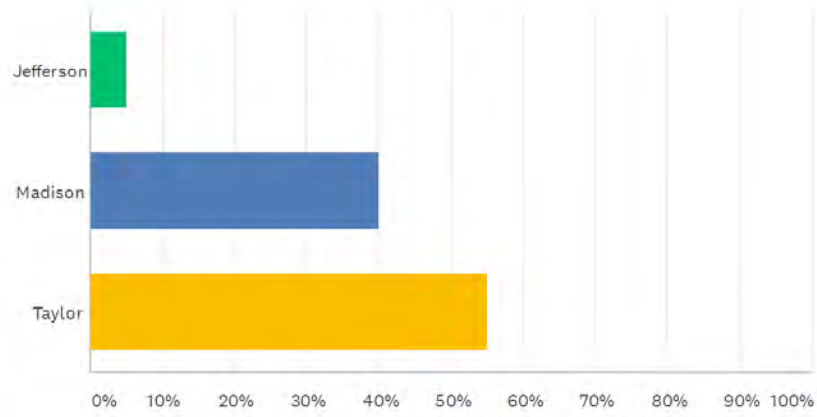
ANSWER CHOICES	RESPONSES	
Jefferson	5.00%	1
Madison	40.00%	8
Taylor	55.00%	11
TOTAL		20

Q2 Race

Answered: 20   Skipped: 0
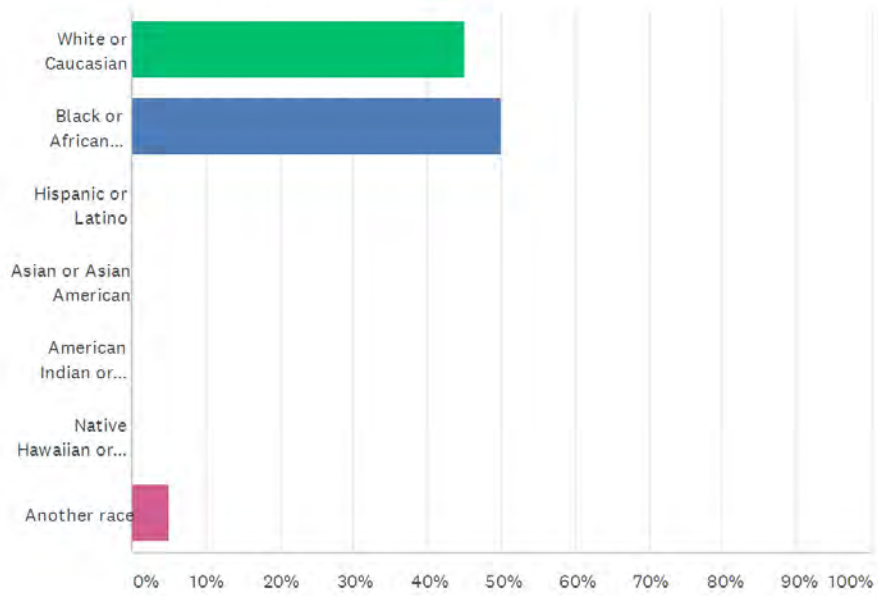
ANSWER CHOICES	RESPONSES	
White or Caucasian	45.00%	9
Black or African American	50.00%	10
Hispanic or Latino	0.00%	0
Asian or Asian American	0.00%	0
American Indian or Alaska Native	0.00%	0
Native Hawaiian or other Pacific Islander	0.00%	0
Another race	5.00%	1
Total Respondents: 20		

Q3 Age

Answered: 20   Skipped: 0
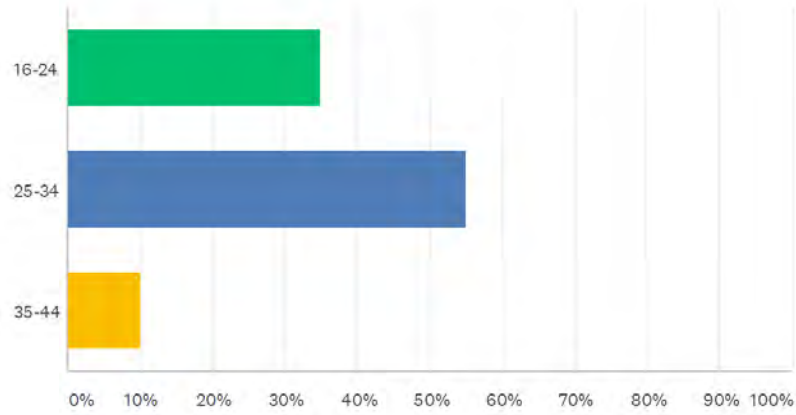
ANSWER CHOICES	RESPONSES	
16-24	35.00%	7
25-34	55.00%	11
35-44	10.00%	2
TOTAL		20

Q4 What is the number ONE reason you chose not to breastfeed?

Answered: 20   Skipped: 0
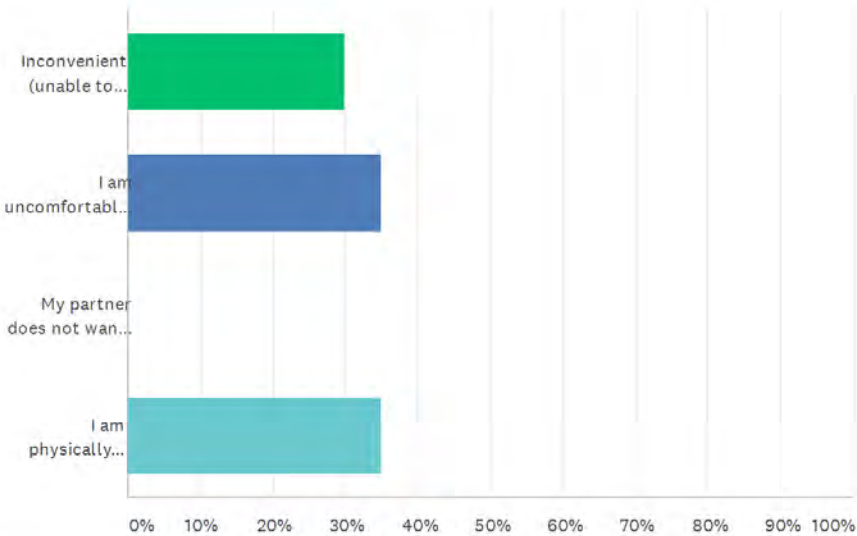
ANSWER CHOICES	RESPONSES	
Inconvenient (unable to leave infant with sitter/constantly "on call"	30.00%	6
I am uncomfortable with an infant on my breast (the sensation is unpleasantor makes me uneasy)	35.00%	7
My partner does not want me to do this	0.00%	0
I am physically unable to breastfeed, due to a medical condition or not having enoough milk	35.00%	7
TOTAL		20

Q5 What are some other reasons that would impact your decision not to breastfeed?

Answered: 20   Skipped: 0
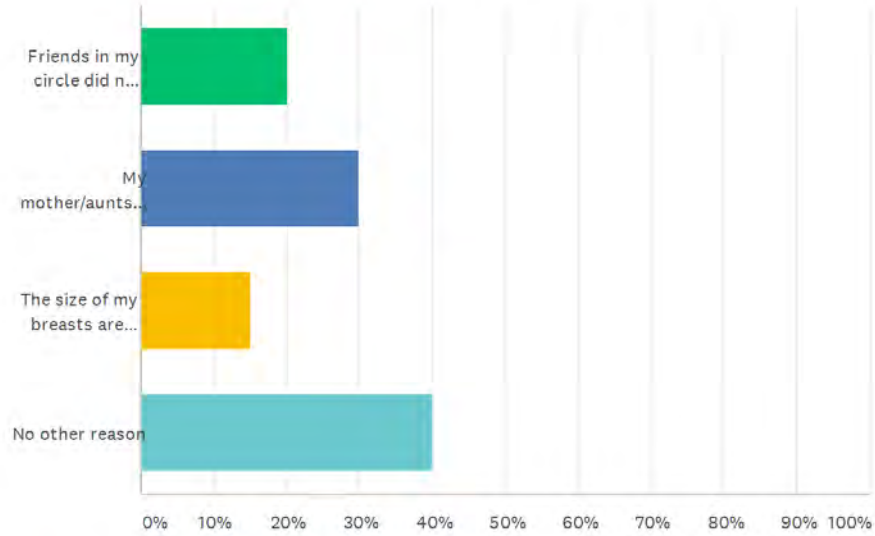
ANSWER CHOICES	RESPONSES	
Friends in my circle did not breastfeed and do not approve	20.00%	4
My mother/aunts/grandmother did not breastfeed	30.00%	6
The size of my breasts are important to me and I do not want to enlarge them	15.00%	3
No other reason	40.00%	8
Total Respondents: 20		

Appendix

Prenatal Risk Screen
Infant Risk Screen
FSU Research - Infant Screening Results

Help your baby have a healthy start in life!

Please answer the following questions to find out if anything in your life could affect your health or your baby's health. Your answers are <u>confidential</u>. You may qualify for free services from the Healthy Start Program or the Healthy Families Program, no matter what your income level is! (Please complete in ink.)*

Today's Date: _____

	YES	NO
1. Have you graduated from high school or received a GED?	☐	☐₁
2. Are you married now?	☐	☐₁
3. Are there any children at home younger than 5 years old?	☐	☐
4. Are there any children at home with medical or special needs?	☐	☐
5. Is this a good time for you to be pregnant?	☐	☐
6. In the last month, have you felt down, depressed or hopeless?	☐₁	☐
7. In the last month, have you felt alone when facing problems?	☐	☐
8. Have you ever received mental health services or counseling?	☐	☐
9. In the last year, has someone you know tried to hurt you or threaten you?	☐	☐
10. Do you have trouble paying your bills?	☐	☐

11. **What race are you? Check one or more.**
☐ White   ☐₃ Black   ☐ Other _____

12. **In the last month, how many alcoholic drinks did you have per week?**
_____ drinks ₁   ☐ did not drink

13. **In the last month, how many cigarettes did you smoke a day?** *(a pack has 20 cigarettes)*
_____ cigarettes ₁   ☐ did not smoke

14. **Thinking back to just before you got pregnant, did you want to be.......?**
☐ pregnant now   ☐ pregnant later   ☐₁ not pregnant

15. **Is this your first pregnancy?**
☐₂ Yes   ☐ No   If no, give date your last pregnancy ended:
Date: (month/year)_____

16. **Please mark any of the following that have happened.**
☐₃ Had a baby that was not born alive
☐₃ Had a baby born 3 weeks or more before due date
☐₃ Had a baby that weighed less than 5 pounds, 8 ounces
☐ None of the above

PATIENT INFORMATION

Name: First Last M.I.	Social Security Number:	Date of Birth (mo/day/yr):	17. Age:	☐₁ <18
Street address (apartment complex name/number):	County:	City: State:	Zip Code:	

Prenatal Care covered by: ☐ Medicaid ☐ Private Insurance _____ ☐ No Insurance ☐ Other _____	Best time to contact me:	Phone #1 _____ Phone #2 _____

I authorize the exchange of my health information between the Healthy Start Program, Healthy Start Providers, Healthy Start Coalitions, Healthy Families Florida, WIC, Florida Department of Health, and my health care providers for the purposes of providing services, paying for services, improving quality of services or program eligibility. This authorization remains in effect until revoked in writing by me.

Patient Signature: _____   **Date:** _____

Please initial: _____ Yes _____ No   I also authorize specific health information to be exchanged as described above, which includes any of my mental health, TB, alcohol/drug abuse, STD, or HIV/AIDS information.

✦ *If you do not want to participate in the screening process, please complete the patient information section only and sign below:*

Signature: _____   *Date:* _____

PROVIDER ONLY

LMP (mo/day/yr):	EDD (mo/day/yr):	18. Pre-Pregnancy: Wt: _____lbs. Height: _____ft. _____in. BMI: _____	☐₁ < 19.8 ☐₂ > 35.0
Provider's Name:	Provider's ID:	19. Pregnancy Interval Less Than 18 Months? ☐ N/A ☐ No	☐₁ Yes
		20. Trimester at 1st Prenatal Visit? _____	☐₁ 2nd
Provider's Phone Number:	Provider's County:	21. Does patient have an illness that requires ongoing medical care? Specify illness: _____ ☐ No	☐₂ Yes
Healthy Start Screening Score: _____	**Check One:** ☐ Referred to Healthy Start. If score <6, specify:_____ ☐ **Not Referred to Healthy Start.**		

Provider's/Interviewer's Signature and Title _____ **Date (mo/day/yr)**_____

INFANT RISK SCREEN

Use ink. Be certain to check the appropriate boxes at the top of the birth certificate.

Pursuant to § 383.14(1)(b) and 383.011(1)(e), F.S., this form must be completed for each infant and submitted to the local County Health Department, Office of Vital Statistics.

MOTHER

Mother's Name:	First	Last	Maiden

Mother's Date of Birth

INFANT

Infant's Name:	First	Last	Infant's Date of Birth	Boy	Girl

Name of Infant's Doctor/ HMO or Group: _____ Name of birth hospital/facility: _____

Was the infant transferred? ❑ No ❑ Yes If Yes, enter name of facility transferred to: _____

Was the infant admitted to neonatal intensive care unit for more than 24 hours? ❑ No ❑ Yes ❑ Unknown

---

SECTION 1: COMPLETED BY PATIENT

Yes_____ **No**_____ **(please initial)** I am interested in having my infant screened for risks that could affect his/her health or development in the first year of life.

Yes_____ **No**_____ **(please initial)** If my infant is referred, Healthy Start may contact me.

I can be reached at (home phone): _____ or (work or contact phone): _____

Street Address: _____
(Give either street address with bldg.#, apt.# or lot# or directions to baby's home)

Mailing Address: _____
(if different from street address)

Yes_____ **No**_____ **(please initial)** By initialing yes, I am giving my written permission on behalf of my infant for release of the confidential information on this form and any information provided during his/her evaluation for service by Healthy Start to Healthy Start care coordination providers, Healthy Start Coalitions, Healthy Families Florida, WIC, and my health care providers for the following purposes: care coordination, payment of claims for services, quality improvement of services, or screening for program eligibility. This includes any medical, mental health, alcohol/drug abuse, sexually transmitted disease, tuberculosis, HIV/AIDS, and adult or child abuse information. This authorization shall remain in effect unless withdrawn in writing.

_____   _____
Signature of parent or guardian   **Date (mo/day/yr)**

SECTION 2: BY PROVIDER

Item numbers correspond to the numbers on the Birth Certificate. Write the point(s) on the appropriate lines, and add for the total score.

Item 54	④____	Abnormal conditions include one or more of the following: Assisted Ventilation (30 min. or more), Assisted Ventilation (6 hrs. or more), NICU admission, newborn given Surfactant Replacement Therapy, Hyaline Membrane Disease/RDS, or seizure or serious neurological dysfunction.
Item 4	④____	Birthweight less than 2000 grams or less than 4 pounds, 7 ounces
Item 28b	④____	Infant transferred within 24 hours of delivery
Item 15	①____	Mother unmarried
Item 26	①____	Principal source of payment Medicaid
Item 30	①____	Maternal race black
Item 19	①____	Father's name not present or unknown
Item 40	①____	Mother used tobacco in one or more trimesters
Item 36d	①____	Prenatal visits less than 2 or unknown
Item 16	①____	Maternal age less than 18 or unknown
	_____	**Infant's Healthy Start Screening Score**

CHECK ONE	❑ **Referred to Healthy Start** If score less than 4 specify reason for referral:_____ ❑ **Not referred to Healthy Start**

BE CERTAIN TO CHECK THE APPROPRIATE BOXES AT THE TOP OF THE BIRTH CERTIFICATE.

I have explained the Healthy Start program, and if screened, the patient's screening score.

_____   _____
Provider's/Interviewer's Signature and Title   **Date (mo/day/yr)**

NO ATTACHMENTS MAY BE ADDED TO THIS FORM.

Improving Public Health Practice: A Pilot Study of High Risk Infant Referrals in Three Florida Counties

Cheryl A. S. McFarland, PhD
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Introduction

In the Florida Panhandle, residents experience particularly poor outcomes related to high poverty, dispersed rural populations with limited access to care, racial segregation and racial disparities in birth outcomes. The Healthy Start Program is one resource available to women delivering in the rural panhandle that is designed to reduce risk of adverse birth outcomes and to improve health and developmental outcomes. A precipitous drop in the infant screening referrals to several counties in the Florida Panhandle concerned the Maternal and Child Health (MCH) community as families with positive screening may not be getting referred to needed services leaving women with high risk infants to navigate resources without support and potentially leave their infants without needed services. While the Healthy Start Coalitions have been diligently working to increase compliance with the legislatively mandated requirement to offer a risk screen to all pregnant women and their infants, the downturn in the infant screening rate was puzzling. Preliminary, aggregate-level data available through Florida Health CHARTS suggests that there has not been a significant change in the demographic characteristics of deliveries within the three counties of interest (Jefferson, Madison and Taylor counties). Moreover, there has not been a substantial decline in the number of births. The decline in referrals raises additional questions given that available data suggests an identified need for referrals among women and their infants in these three rural counties. The Healthy Start Coalition of Jefferson, Madison and Taylor Counties (HS-JMT) received 165 infant referrals during fiscal year 2015-2016, while that number decreased by 45% percent by Fiscal Year 2016-2017, with only 91 referrals. This trend has continued with the preliminary data from the first half of Fiscal Year 2017-2018 seeing a reduction in participation in Healthy Start by nearly 58% compared to the first half of FY2016-2017. This precipitous drop is not attributable to a decrease in births or a change in the demographic characteristics of women delivering in the three counties. There has been a tremendous increase in women not consenting to the infant risk screening in the hospital, such that in FY 2015-2016 1.4% of women declined consent for screening and in FY 2016-2017 the decline rate was 22.9%. The increase in women declining the infant screen is a unique phenomenon occurring in Leon County and the surrounding counties served by birthing facilities in the area with Healthy Start Coalitions in central and southern Florida not reporting significant differences in referrals over time. This drop has led to concern that birthing hospitals in the area are not properly screening women and offering Healthy Start services. However, without a full picture of screening scores of infants born in the area, it is impossible to determine if the population risk has changed, or if there is a structural change in the birthing facilities that has led to the declining referrals. The goal of this project is twofold. First to understand what factors have influenced screening and may predict whether an infant is screened and referred to programming. Second, what are the lived experiences of women who deliver high risk infants in the rural panhandle of Florida?

Background on Healthy Start

In 1991, Florida enacted legislation creating the Healthy Start Program with the intent of reducing infant mortality, low birthweight and premature births and improve prenatal and infant health and developmental outcomes. A key component of the legislation was a requirement for universal screening of all pregnant women and newborns to identify those who were at an increased risk for a poor birth, health or developmental outcome. Consequently, the Florida Department of Health (DOH) developed a universal infant risk screen guided by a multidisciplinary work group of physicians, epidemiologists, nurses, social workers, hospital administrators, legislators, and other maternal and child health experts. The universal infant screening instrument was developed based on information collected in the birth record. Initial concerns were expressed regarding any added workload for hospital personnel in

completing the infant screen as well as the accuracy of additional information collected for the sole purpose of completing the infant screening tool. Points were assigned to each of the identified risk factors, with the total score of four or more points determined to be a positive infant screening score. Women whose infants have a positive score are referred to the Healthy Start Program for information, referral and ongoing care coordination and support to assure access to needed services; if the mother consents to these services. The screen, when first implemented in 1992, had a positivity rate of 14% (meaning 14% of the infants have a positive screen) and a sensitivity rate of 48% (meaning that 48% of the post neonatal deaths occurred among those infants with a positive screen). The screening performance was evaluated by DOH periodically and the positivity and sensitivity rates were basically unchanged.

In 2004, the Florida birth certificate was modified. The new birth certificate had additional information which had the potential of more accurately predicting poor post neonatal outcomes. However, in order to have enough data using the new birth certificate linked to post neonatal death data, analysis of the impact of the new birth data did not begin until 2010. The analysis indicated that including several items on the revised birth record, excluding several items that did not have strong empirical evidence, and adjusting the point value and scoring for some of the existing items would contribute to an improved infant screening tool. These analyses were reviewed by an expert panel convened by DOH and a new infant screening tool was developed. These revised screening criteria resulted in a positivity rate of 17% and a sensitivity rate of 61% (See Table 1). It is significant to note that infants with a positive infant screening score of 4 or more are at increased risk of infant mortality within the first year of life, and those who score 7 or more are almost 8 times as likely to die between 28 days and 364 days of life compared with infants scoring 3 or less. In order to assess the risk of the infant, accurate and timely information collected from the birth certificate is integral.

Table 1: Infant Screening Scoring Criteria

Factors Contributing to Infant Screen Score	Total Points Associated with Factor
Maternal Age (under 18 or Unknown)	1 point
Maternal Education (Less than high school)	1 point
Unmarried	1 point
Black	1 point
Medicaid	1 point
No Prenatal Care	1 point
Tobacco Use	1 point
Father Not Present on Birth Certificate	1 point
Birth Weight (<2000 grams)	4 points
Vent 30 minutes or more	4 points
Vent 6 hours or more	4 points
NICU Transfer	4 points
Transfer to another facility	4 points
Surfactant	4 points
Seizure	4 points
Respiratory Distress Syndrome	4 points

Birth Certificate Data Collection and Accuracy
Accuracy of birth certificate data is crucial in identifying infants at highest risk for post neonatal death and increased chance of developmental delays. Several studies have reported discrepancies between data

reported on the birth record and data found on corresponding medical records. In an analysis of the state of Washington's birth certificate records, missing data ranged from 0% for prior live births to 24% for last menstrual period and prior live births. In a validation study of birth records for New Jersey women who were on Medicaid, it was shown that prenatal care was over-reported; alcohol and tobacco use, complication of labor and delivery, transfer status, and several other factors were underreported, and birth weight, method of delivery and most demographic information was reported accurately.

Beginning in the summer of 2017, nine Florida hospitals participated in a quality improvement pilot project addressing the accuracy of birth certificate data. They conducted a baseline assessment of 22 key variables recorded on the birth record. The average accuracy rate of these 22 indicators was 89%. The four most accurate variables included eclampsia, pre-pregnancy diabetes, cesarean, and chronic hypertension, all of which were accurate more than 95% of the time. Conversely, the three least accurate variables were total number of prenatal visits, date of first prenatal visit and mother's pre-pregnancy weight. These variables were accurate in 65, 70 and 73 percent of the time respectively. Moreover, in a study conducted in collaboration with the Florida Department of Health and the Centers for Disease Control and Prevention, researchers found that among women who failed to gain weight or lost weight during pregnancy, medical documentation to support the pre-pregnancy weight listed on the birth certificate was only found among 85% of cases, with 15% of cases having no corroborating documentation of the mother's pre-pregnancy weight.

Training
In order to improve the accuracy of the birth certificate as well as increase screening rates for infants, the Healthy Start Coalitions and County Health Departments requested additional training at local birthing facilities. Training for local birth clerks, who complete the birth certificates, by the Office of Vital Statistics of the Florida Department of Health was conducted in the fall of 2017. Included in that training was a suggested script to be used by the clerks to describe the Infant Risk Screening process and request permission to screen. Subsequent to the training, the screening rate has increased but the referral rate continues to lag resulting in a continued decrease in Healthy Start services in the surrounding counties. This is especially troublesome as the Infant Risk Screen is now the gateway for other social services designed to assist new mothers and infants. In July 2018, Coordinated Intake and Referral (CI&R) was implemented across the state. CI&R is a collaborative process that utilizes the universal prenatal and infant screen as a single point of entry for various home visiting, care coordination, education and support services. The goal is for families to receive the best services for their needs and preferences as well as to minimize duplication of services, ensure effective use of local resources, and collectively track what happens to each family.

Data & Methods
Based on the current available data, the Florida State University, Public Health Program in collaboration with the Central Jersey Family Health Consortium were contracted to evaluate birth records and conduct in-depth interviews with mothers of high risk infants. The goals of the project are threefold. First, to determine the actual number of women with high risk infants in the identified counties. Second, identify characteristics that may predict whether a woman is screened and referred. Third, give a voice to women in the community and their experiences with navigating services to assist them with their high risk infants. To achieve the goals set out above, a mixed-methods approach was taken using both population-level birth data from Jefferson, Madison, and Taylor counties between 2016 and 2017, provided by the Florida

Department of Health Bureau of Vital Statistics and in-depth interviews of women living in the target area who delivered high risk infants during the identified time frame.

The Setting

Jefferson, Madison, and Taylor counties are located in the Florida Panhandle in what is considered the rural south. The counties are located between 30 and 45 minutes from any major city with births generally occurring at one of two birthing hospitals in the area. Overall, pregnant women in these counties must travel long distances to access prenatal care and deliver at a birthing facility. Moreover, the counties identified do not have any obstetricians, with the health departments being the sole providers of prenatal care in each county. The following information provides a picture of the health status of the counties using 2017 data available on Florida Health CHARTS. It should be noted that with small numbers, rates may vary dramatically over time and should be interpreted carefully.

Jefferson County has a total population of 14,530 (2017), with only 25 residents per square mile and is considered the seventh most rural of Florida's 67 counties with regard to population density. Of the total population, nearly 63 percent of Jefferson County residents are White, 35 percent are Black, 4 percent are Hispanic and 3 percent are other race. In Jefferson County as a whole, the median household income is $41,696, slightly below the state median household income average of $48,900. The poverty rate is 16 percent for Jefferson County which matches the statewide rate, and the unemployment rate is 8.4 percent for the County which also equals the state rate. In Jefferson County, the population over 25 without a high school diploma is 20%, significantly higher than the state rate of 13%.

In Jefferson County, the rate of first trimester prenatal care initiation is 77%, slightly lower than the state rate of 78%. In Jefferson County, 9% of births are low birth weight births compared to 9% statewide, and 8% of births are preterm births in the county, slightly lower than the statewide rate of 10%. The teen birth rate in the County is 28, higher than the statewide rate of 20. The infant death rate in Jefferson County is 2.3 times lower than the rate of the state (2.6 and 6.1, respectively). The neonatal death rate in Jefferson County is 1.6 times lower than the rate of the state (2.6 and 4.2, respectively). The rate of mothers initiating breastfeeding at birth in the County is 77%, lower than the statewide rate of 86%.

Madison County has a total population of 19,295 (2017), with 27 residents per square mile. Madison County has the ninth lowest population density in Florida. Of the total population, nearly 59 percent of Madison County residents are White, 39 percent are Black, 5 percent are Hispanic, and 3 percent are other race. In Madison County as a whole, the median household income is $29,806, significantly below the state median household income average of $48,900. The poverty rate within Madison County is 29 percent, higher than the 16% statewide, and the unemployment rate is 12 percent compared to 8 percent statewide. In Madison County, the population over 25 without a high school diploma is 17%, higher than the state rate of 13%.

In Madison County, the rate of first trimester prenatal care initiation is 72%, slightly lower than the state rate of 78%. In Madison County, 11% of births are low birth weight births compared to 9% statewide, and 12% of births are preterm births in the County, slightly higher than the statewide rate of 10%. The teen birth rate in the County is 31, higher than the statewide rate of 20. The infant death rate in Madison County is similar to the rate of the state (6.9 and 6.1, respectively). The neonatal death rate in Madison County is 1.6 times higher than the rate of the state (6.9 and 4.2, respectively). The rate of mothers initiating breastfeeding at birth in the County is 66%, much lower than the statewide rate of 86%.

Taylor County has a total population of 22,220 (2017); however, is the most rural of the three counties with only 18 residents per square mile. Taylor County has the fifth lowest population density in Florida. Of the total population, 76 percent of Taylor County residents are White, 20 percent are Black, 4 percent are Hispanic, and 4 percent are other race. In Taylor County as a whole, the median household income is $36,195, lower than the state median household income average of $48,900. The poverty rate within Taylor County is 15 percent, slightly lower than the 16% statewide, and the unemployment rate is 8 percent similar to 8 percent statewide. In Taylor County, the population over 25 without a high school diploma is 21%, higher than the state rate of 13%.

In Taylor County, the rate of first trimester prenatal care initiation is 76%, slightly lower than the state rate of 78%. In Taylor County, 10% of births are low birth weight births compared to 9% statewide, and 12% of births are preterm births in the county, slightly higher than the statewide rate of 10%. The teen birth rate in the County is 41, more than double the statewide rate of 20. The infant death rate in Taylor County is 1.4 times lower the rate of the state (4.3 and 6.1, respectively). The neonatal death rate in Taylor County is 0 compared to 4.2 statewide. The rate of mothers initiating breastfeeding at birth in the County is 68%, lower than the statewide rate of 86%.

Table 2: County Setting

	Florida	Jefferson County	Madison County	Taylor County
Total Population	20,555,728	14,530	19,295	22,220
Population - White	77.6%	62.7%	58.9%	76.4%
Population - Black	16.9%	34.8%	38.6%	19.9%
Population - Other	5.6%	2.6%	2.5%	3.7%
Population - Hispanic	25.0%	4.1%	4.9%	4.2%
Population - Non-Hispanic	75.0%	95.9%	95.1%	95.8%
Median income (in dollars)	48,900	41,696	29,806	36,195
Poverty Rate	16.1%	15.8%	28.5%	14.8%
Unemployment Rate	8.4%	8.4%	12.4%	7.7%
Population over 25 without high school diploma or equivalency	12.8%	20.2%	17.3%	21.3%
First Trimester Prenatal Care Initiation	78.3%	77.1%	72.2%	76.3%
Low birth Weight Births	8.7%	8.8%	11.2%	9.8%
Preterm Births	10.1%	7.8%	11.9%	11.8%
Births to teens 15-19	19.7	27.5	30.8	40.6
Infant death rate	6.1	2.6	6.9	4.3
Neonatal death rate	4.2	2.6	6.9	0
Mothers initiating breastfeeding at birth	85.7%	77.3%	65.8%	67.6%

Study Sample
Population data were provided by the Florida Department of Health Bureau of Vital Statistics. Data included all live births in Jefferson, Madison, and Taylor counties for the years 2016 and 2017. In total 1,040 births were included in the dataset.

Following Human Subjects Research approval at both Florida State University and the Florida Department of Health, the birth certificate data was provided to the researchers for Jefferson, Madison, and Taylor counties. The interview participants were identified through the birth certificate. All women who had identified risk factors that would have culminated in an infant score of 4 or more on the infant risk screen were included in the potential sample. A total of 316 women were identified as potential interviewees. Any women without valid contact information were excluded from the sample. A total of 75 women were included and contacted to request an interview. Overall, 58 women were contacted but did not answer or return calls, 7 women declined interviews, and 10 women accepted interviews. Of the 10 women who agreed to an interview, only 3 were interviewed due to cancelations and inability to meet at the scheduled time. In total three women or 4% of those with valid contact information were interviewed.

The primary purpose of the interviews was to understand the unique lived experiences of women delivering high risk infants and caring for such infants in rural, resource poor areas. Interviews occurred between September 2018 and November 2018. The interview questions are included in Appendix I.

Key Measures
The Infant Risk Screen is conducted based on information available in the birth certificate, the presence of a screening is based on the mother consenting to screening and the presence of an infant screen score.

Infant risk was measured using criteria identified through the Florida Department of Health. The possible scores range from 0 to 43, with designated points associated with each risk criteria. All criteria are identified through the birth certificate with one or four points given for each. The following characteristics are valued at one point each: Black, age under 18 or unknown, less than high school diploma, unmarried, alcohol use during pregnancy, no father listed on the birth certificate, having Medicaid insurance, use of tobacco during pregnancy, and having no prenatal care or fewer than 2 prenatal care visits. Characteristics that are valued at four points include: birthweight less than 2000 grams, being ventilated for 30 minutes, being ventilated for more than 6 hours, being transferred to the neonatal intensive care unit, receiving surfactant, presence of seizure, having respiratory distress syndrome, and being transferred to another facility.

Referral status comes from both the birth certificate and Healthy Start data indicating receipt of referral from the county health department or other sources beside the infant risk screen. The birth certificate data indicates whether the woman consented to the program, while the Healthy Start data indicates if the woman was actually referred to the program. All women who consent to referral in the hospital should be subsequently processed at the county health department for which they live and the contact information is transferred to the Healthy Start Coalition to conduct follow-up with the mother.

This study includes an extensive suite of covariates to address potential spuriousness. We identified the following factors as important controls because they are feasibly linked to screening or referral: sociodemographic characteristics, poverty, adverse birth outcomes, and health behaviors during pregnancy. Sociodemographic characteristics were measured with several variables including: age (continuous years), educational attainment (high school degree = 1), and insurance status.

Analytical Strategy
Frequencies and percentages were used to describe the demographic and lifestyle factors of the births. Next, we present descriptive statistics stratified by screening and conduct bivariate tests of whether risk

varies by screening (see Table 3). To obtain an association between risk and screening, odds ratios (ORs) were calculated using logistic regression.

For interview results, our analytic approach used the grounded theory method. Grounded theory can be used when the research question targets experiences, and where the aim is not to test or verify existing theories, but rather explain a process and/or put forth a new understanding. Data were coded by frequency of occurrence for similar responses to develop subthemes which were then combined into themes. The transcripts were reviewed by the evaluator and project coordinator using manual coding. Open coding was used to explore, name, and categorize topics found in text.

Results

Birth Certificate Results
A total of 1,040 infants were born to women in Jefferson, Madison, and Taylor Counties between 2016 and 2017. Women delivering were between the ages of 13 and 47 years (mean = 26.78), unmarried (40.5%), no father listed on the birth certificate (19.1%), white (61.5%), black (34.4%), and less than high school graduates (15.9%). Overall, 29.0% had no prenatal care or their prenatal care status was unknown, 14.4% received inadequate prenatal care, 13.8% used tobacco during pregnancy, and 66.5% were on Medicaid. Adverse birth outcomes and risk for adverse infant outcomes were substantial in the population, with 9.8% of births considered low birth weight, 12.5% born preterm, and 30.4% of births scoring a minimum of 4 on infant risk screening criteria.

Overall, 826 of 1,040 infants or 79.4% were screened during the birth hospitalization. Of those screened, 32.1% scored 4 or more on the infant screen, with 6.3% scoring 7 or more. Among the 214 infants who were not screened, 23.8% were considered at risk (4 or more) and 4.2% were considered high risk (7 or more). In total, 30.4% of infants born in Jefferson, Madison, and Taylor counties are considered at risk. This rate is significantly higher than the state average of 15%.

Table 3: Infant Risk Screening Scores by Presences of Screening

Infant Scores	Screened *n=826*	Not Screened *n=214*	All Birth Certificates *n=1040*
0	103	54	157
1	136	33	169
2	150	39	189
3	172	37	209
4	151	31	182
5	52	9	61
6	10	2	12
7+	52	9	61

Among infants born in the identified counties, those who were screened had slightly increased rates of risk factors. Infants who were screened were born to mothers who were slightly younger with an average age of 26.5 years compared to 27.7 years for those not screened. A larger percent of those screened were black, did not have a father present on the birth certificate and were on Medicaid. A larger percent of those not screened were both college educated or had less than high school diploma. Smoking behaviors

did not vary among those who were screened compared to those who were not; however, those screened were more likely to have no prenatal care or inadequate prenatal care. Infants screened had higher rates of low birth weight and very low birth weight, overall lower birth weights, lower gestational ages, and had higher rates of neonatal intensive care (NICU) admissions and transfers to other facilities compared to those who were not screened. Finally, the percent of infants screened that scored higher than 4 on the risk assessment was 32.1% compared to those not screened 23.8%.

Table 4: Characteristics of Population by Presences of Screening

	Not Screened	Screened
	n=214	*n=826*
Demographic Characteristics		
Age	27.76	26.52
Black	24.3%	37.0%
Father not present	15.9%	20.0%
College Educated	15.0%	9.6%
Less than high school	17.8%	15.5%
Medicaid	52.8%	70.1%
Health Behaviors		
Smoking	13.6%	13.9%
No PNC	23.4%	30.5%
Inadequate Prenatal Care-Kotelchuck Index	11.8%	15.0%
Birth Characteristics		
Very Low Birth Weight	1.9%	2.4%
Low Birth Weight	5.6%	8.0%
Birth Weight	3246.10	3186.60
Gestational Age	39.27	38.83
NICU	6.1%	6.9%
Infant Transferred	0.9%	1.3%
Risk		
Score of 4 or more	23.8%	32.1%

Screening rates declined during 2016 with the reason being a large increase in women declining infant risk screening. Between January 2016 and December 2016 women declining screening increased from no women declining screening in January to 37.3% declining screening in December 2016. In October of 2017 women declining screening peaked with 56.3% of women delivering in the identified counties declining to be screened (See Figure 1).
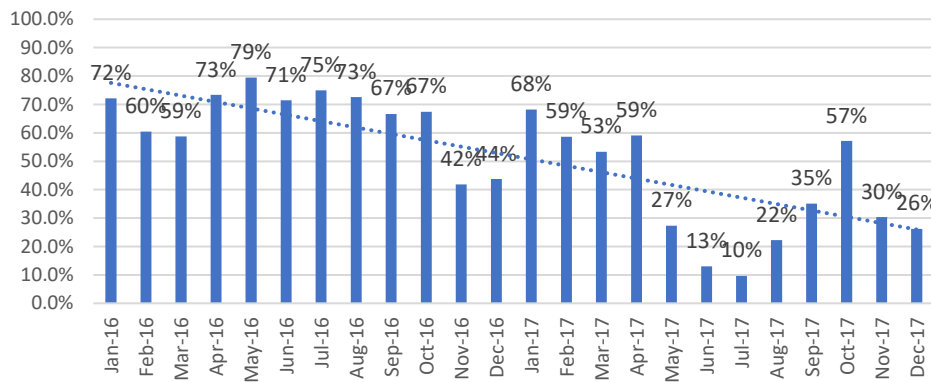
While consent for screening declined, in December 2017 there was a substantial decrease in women declining screening. This drop in declines may be related to training that occurred in November 2017 that provided hospital staff with tools and skills to discuss the program. While declining consent has increased over time, of those who are screened and are eligible for

Figure 1: Percent of Births Declining Screening
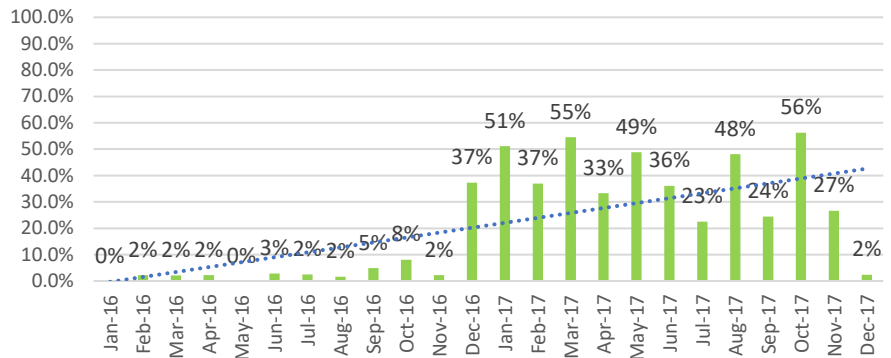
the program, consent for programming has declined over time. The linear trend shows a substantial decline in program consent. Between May 2017 and December 2017, fewer than 30 percent of eligible women consented to the Healthy Start program on average, while the average rate of consent between January and October 2016 was larger than 60% (See Figure 2). Hospital staff were provided training related to the Healthy Start program; however, program

Figure 2: Program Consent

consent did not witness an increase immediately after training occurred.

Program referrals also declined over time. Among infants screened who were eligible for the program and mothers consented to program participation, on average, less than half were referred over time. Although the slope of the trend line is not as dramatic for referrals as it was for program consent, referrals have continued to decline throughout 2016 and 2017. Referrals experienced the lowest point in July 2017 with fewer than 10% of eligible women and their infants receiving a referral. Although training occurred in late 2017, the referral

Figure 3: Program Referrals
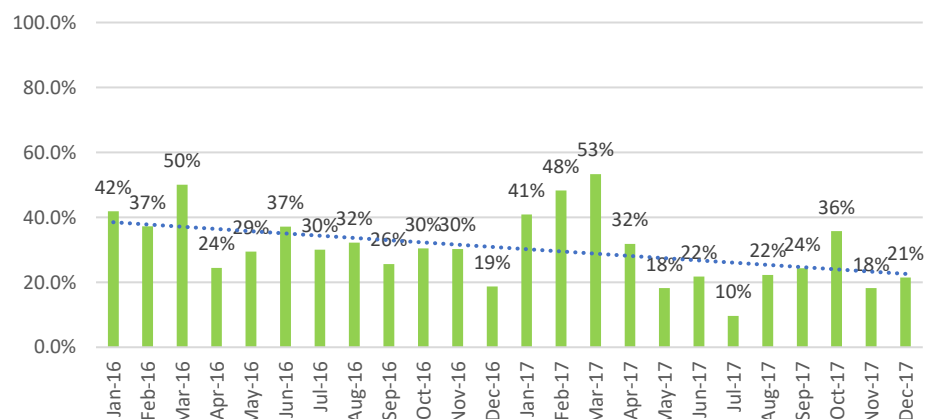
rate did not experience a noticeable increase. The decline in screening seems to be driven by a decrease in consenting to screening. We next investigated this relationship to place of birth. The results suggest that overall, failure to obtain screening consent is isolated to one hospital with 27.4% of births at Hospital A not consenting to screening and slightly more than one percent of women delivering at Hospital B and approximately 10% of women delivering at another hospital or birthing center not consenting to screening.

Table 5: Screening by Hospital

	Screening Declined	Screening complete	Total Births
Hospital A	199	528	727
Hospital B	3	213	216
Other	10	84	97

Note: Three births in the other category had screening consent listed as unknown and were not included.

Figure 4: Consent for Screening by Birthing Facility

The decline in consent for screening began in late 2016 and continued until November of 2017. As can be seen in Figure 4, decline in screening consent is driven by Hospital A.
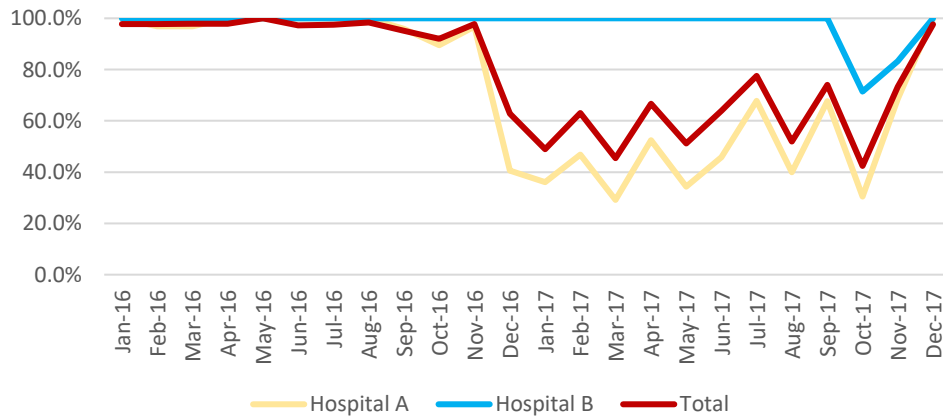
Not only has consent for screening declined, so has consent for programming; however, when investigating facilities, it was found that although Hospital A experienced declines in program consent between 2016 and 2017 (94% and 60%, respectively), Hospital B has consistently experienced low rates of program consent, 10% in 2016 and 0% in 2017 consented to programming. Other facilities have had relatively consistent rates of program consent over time.

Figure 5: Program Consent by Facility
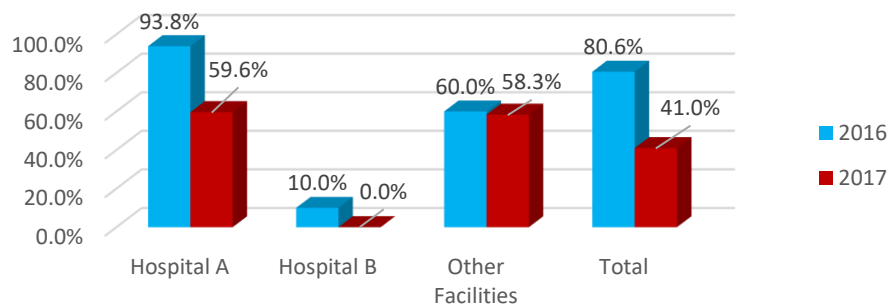
The decline in screening rates and program consent rates at Hospital A and the consistently low rates of program consent at Hospital B cannot be explained by differences in the birthing population. The demographic characteristics of births from the three identified counties delivering at each hospital is relatively similar with the only large difference is Hospital A has a larger percent of patients with no prenatal care compared to Hospital B. This suggests that policies and procedures within each hospital are influencing screening and program consent rates rather than the characteristics of the population delivering at each facility.

Table 6: Demographic Characteristics by Place of Delivery

	Hospital A	Hospital B
Race		
White	60.9%	56.9%
Black	34.5%	41.7%
Hispanic	3.3%	0.9%
Not Married	60.0%	63.0%
Less than High School Education	2.1%	1.4%
Maternal Age (<18)	2.1%	0.9%
Father Not Present on Birth Certificate	18.8%	19.4%
Medicaid	64.1%	74.5%
Health Behaviors		
No Prenatal Care	11.4%	3.0%
Tobacco Use During Pregnancy	13.1%	13.4%
Infant Outcomes		
Low Birth Weight (<2000 grams)	4.4%	1.4%
At Risk (4+ on Infant Screen)	32.5%	23.6%

Logistic Regression Results

Women who were black had statistically significant increased odds of being screened as compared to women who were white (Wald: 4.84; OR 1.55). Women on Medicaid were 1.9 times more likely to be screened than those who were not (Wald: 11.41; OR 1.90). Younger women were at increased odds of receiving a screening (Wald: 4.66; OR: 0.97). Those having no prenatal care or the status of their prenatal care was unknown were 1.5 times more likely to be screened compared to those with prenatal care (Wald: 4.00; OR: 1.45). Women with less than a high school education compared to those with a high school diploma are at slightly increased odds of receiving screening; however, the findings are trending toward significance (Wald: 3.57; OR: 0.64). Delivering an infant with low birth weight, needing to be transferred to another facility, or being transferred to the NICU had no significant impact on receiving a screening. Moreover, being unmarried or not having a father present also did not impact the likelihood of receiving a screening.

Table 7: Logistic Regression of Risk Factors on Screening for Healthy Start

	B	SE	Wald	Exp (B)	
Black (Yes=1)	0.438	0.199	4.841	1.549	*
Hispanic (Yes=1)	-0.636	0.421	2.281	0.529	
Not Married (Yes=1)	0.148	0.206	0.518	1.160	
Mother's Age (in years)	-0.032	0.015	4.661	0.969	*
Less than High School Diploma (Yes=1)	-0.449	0.238	3.572	0.638	
Some College (Yes=1)	-0.183	0.194	0.884	0.833	
College Degree (Yes=1)	-0.182	0.276	0.436	0.833	
Father Present on Birth Certificate (Yes=1)	-0.075	0.232	0.103	0.928	
Medicaid (Yes=1)	0.643	0.190	11.413	1.903	***
No Prenatal Care (Yes=1)	0.374	0.187	3.999	1.453	*
Smoked During Pregnancy (Yes=1)	-0.055	0.244	0.051	0.947	
Low Birth Weight 1500 grams-2499 grams (Yes=1)	0.273	0.345	0.624	1.313	
Very Low Birth Weight Less than 1500 grams (Yes=1)	0.045	0.660	0.005	1.046	
Infant Transferred (Yes=1)	0.072	0.205	0.124	1.075	
Infant Transferred to NICU (Yes=1)	0.000	0.098	0.000	1.000	
Constant	1.695	0.435	15.154	5.445	***

*p<0.05, **p<0.01, ***p<0.001

Women who were black had statistically significant increased odds of being referred compared to white women (Wald: 37.28; OR: 4.96). Women who are not married are significantly less likely than married women to be referred to Healthy Start (Wald: 15.76; OR: 0.29). Women on Medicaid were 3.3 times more likely to be referred than those who were not (Wald: 13.65; OR 3.27). Those who smoked during pregnancy were nearly 5 times more likely to be referred compared to non-smokers (Wald: 17.94; OR: 4.94). Infants transferred to the NICU were 2.6 times more likely to be referred to Healthy Start (Wald: 18.90; OR: 2.58). Having no prenatal care or delivering an infant with low birth weight had no significant impact on receiving a referral. Moreover, mother's age, education level, or not having a father present also did not impact the likelihood of receiving a referral.

Table 8: Logistic Regression of Risk Factors on Referral for Healthy Start

	B	SE	Wald	Exp (B)	
Black (Yes=1)	1.602	0.262	37.281	4.963	***
Hispanic (Yes=1)	-0.481	0.695	0.479	0.618	
Not Married (Yes=1)	-1.227	0.309	15.764	0.293	***
Mother's Age (in years)	0.002	0.021	0.006	1.002	
Less than High School Diploma (Yes=1)	-0.011	0.340	0.001	0.989	
Some College (Yes=1)	-0.223	0.285	0.614	0.800	
College Degree (Yes=1)	0.281	0.510	0.304	1.325	
Father Present on Birth Certificate (Yes=1)	0.169	0.314	0.289	1.184	
Medicaid (Yes=1)	1.184	0.321	13.649	3.268	***
No Prenatal Care (Yes=1)	0.237	0.248	0.913	1.268	
Smoked During Pregnancy (Yes=1)	1.598	0.377	17.974	4.941	***
Low Birth Weight 1500 grams-2499 grams (Yes=1)	0.368	0.460	0.641	1.445	
Very Low Birth Weight Less than 1500 grams (Yes=1)	0.055	1.197	0.002	1.057	
Infant Transferred to NICU (Yes=1)	0.946	0.218	18.898	2.576	***
Constant	-1.592	0.659	5.829	0.204	*

*p<0.05, **p<0.01, ***p<0.001

Interview Results

A total of three women were interviewed. Women participating in interviews had between two and three children. One of the women participated in Healthy Start, one in Healthy Families, and the third did not have support from community resources. Across all interviews, four main themes emerged: Theme 1 identified specific information and resource needs, Theme 2 identified importance of social and community supports, Theme 3 identified lack of education during pregnancy and the postpartum period from providers and hospitals.

Theme 1: Pregnant and parenting women need tailored information to help navigate resources in their community.

The knowledge of community resources was an identified need for all interviewees. Each woman voiced their struggle with learning what resources were available and how to access them. Two of the women were connected with either Healthy Start or Healthy Families; however, these resources were identified through access to the Health Department or explained in prior pregnancies. Only one of the three women discussed the hospital providing information and stated that the information was limited. Moreover, one woman stated that for women who have multiple children, the assumption is they are already aware of resources.

> "During my pregnancy with Child 1 they (the hospital) told me about Healthy Start but I guess the more children you have they are kinda like oh you already know."

> "With him I was very disappointed with the hospital, because he, the only thing that was discussed with me was the Ronald McDonald House. He was in the NICU, he was born 3 days late and my placenta deteriorated so he wasn't getting oxygen. When they forced him to cry because he went to the bathroom in my sac, they finally brought air to him and when they forced him to cry he swallowed it. So umm, when he was born he was white.

They gave him 3 blood transfusions and he was in NICU for 17 days.. With her: no, nothing was ever discussed with me about anything."

Theme 2: Community and Social Support

<u>Community</u>

The three women had various experiences with community supports with some utilizing community resources and others feeling isolated. The knowledge of availability of community resources varied with some learning about resources through family members and others being told limited information about the type of resources community organizations offered.

> Ok, well with him it was my first pregnancy, I really wasn't told about everything. I didn't know about WIC, I didn't know about anything. Ummm, and I breastfed, I plan to breastfeed. That was a good thing for me because I didn't have to worry about formula. I was like okay so I don't have to pay for formula. With umm, when I finally was told about WIC through my cousin; I went there. They talked to me about breastfeeding and stuff like that. I had a lady from Healthy Start reach out to me, umm and I was so sick with my pregnancy with him. With her I knew about WIC and stuff but no one told about me Healthy Start, I was never talked to about Healthy Start.

> When I went there [local health department] to do the pregnancy test. I already knew the lady that was there with early Healthy Start. She was talking with me. She came to the school and stuff because I was in school at the time. She helped me set the goals that I needed and made sure I had all I needed to graduate and everything so that we wouldn't struggle as much.

> Other than family, I had wonderful support. I was with Healthy Families. The lady who would come out to the house for that she was wonderful. It was just like having another friend to talk to. They supply with baby needs, they would have a list of stuff and if I needed help they would help me.

<u>Social</u>

Social support played a large role with the three women interviewed. Each had different experiences either having a strong supportive family or feeling isolated and alone. Those with familial supports reported having a more positive experience in pregnancy and early motherhood. The woman that did not have strong supports experienced depression and fear, with her experiences being less positive.

> Me, myself and I. I mean I had some family that stayed with me when she came home. Ummm, when he first came home there was nobody it was just us. But when she came home, my mother-in-law, she stayed with me for like a week.

> I had community support and my boyfriend. My grandma and family supported me with it; even though I got pregnant again with him. So, at that time it was kinda like they were willing to accept it. Some didn't accept it at the time because they wanted better for me than before I had kids.

Theme 3: Lack of education by providers and hospitals

<u>Provider Education Issues</u>

The provision of education during pregnancy was a concern raised during multiple interviews. Clinicians provided education on vaccination and circumcision; however, there was a lack of education on breastfeeding, cesarean section, and available community resources like WIC or Healthy Start.

> Ummm, I feel like maybe, I don't even know how to answer that. I think doctors express the importance of vaccinations, the importance of circumcision, because there is so many infections. A lot of doctors don't express the importance of breastfeeding, I feel like to me, not that it's overlooked. They don't express the importance of it. If someone says I'm gonna bottle feed, then they are like ok then bottle feed. Let's see, I don't think that. Ummm, I wish I was given the option to leave the umbilical cord on longer. If I do have another child I have read that if you leave it attached longer it will help with the baby's immune system and things like that. I was never told any of this stuff. Or if you don't give them a bath. Don't give them a bath within 24hrs. Let that stuff break off them. I mean it helps with allergies and things like that. I never knew any of that.

> On birth. I had to have an emergency C-section with him. I was shaking uncontrollably, I didn't even know what was going on. I was so…after having a C-section with him I was not having vaginal with her. No, we can do C-section again. I was scared. And to me, I'm pro C-section but so many people are against that. I just think it's crazy. I think that more people should be informed on those things.

<u>Hospital Education Issues</u>

The hospital is the last source of information prior to a mother taking home her baby. The availability of information and explanation of information provided is important especially for those who have limited resources. The women interviewed had very different experiences with information provided by the hospital where they gave birth. The experiences range from receiving information on depression to receiving information on daycare.

> They discussed a lot of the PHIs (pregnancy health centers). That teach you how to handle your baby when they are crying and how to handle your baby in different environments, and at home by yourself when you just had a surgery and stuff like that. They also gave me program about daycares. They gave me other programs that discussed the situation that people have with setbacks about suicidal thoughts. They gave me a lot of programs about to make sure I didn't think about harming myself or the kid. They gave me a lot of programs to help.

> *Regarding Heathy Families:* The hospital told me about it. That it was not Healthy Start but Healthy Families. They gave them my information and she started coming out.

> Interviewer: Okay, I'm happy you had that. Thinking about your hospital stay and during your delivery what programs did the hospital staff discuss with you?

> Mother: Um no, other than WIC. That was the only other thing I was told about.

Interviewer: Okay, what information did they share with you about WIC and its services?

Mother: They just told me contact about lactation and latching. They didn't give me any other information.

Discussion

We conducted a mixed methods study to determine why screening rates had decreased between 2016 and 2017 and to understand the lived experiences of women delivering high risk infants living in rural areas. We used logistic regression to determine factors that influence screening and referral practices and in-depth interviews to understand experiences and inform services for supporting rural women with high risk infants in the future.

Methodological limitations should be noted. Our interview participants may not be representative of persons with high risk infants in the identified counties. Due to limitations of accurate contact information, recruitment of women was limited. Those interviewed were typically engaged in community services and may be more knowledgeable of availability due to their previous experiences with prior children. Moreover, since our recruitment was based on those with valid phone numbers, we may be representing women with more social means than those who are more socially and economically disadvantaged.

The study also had strengths that are important. First, by obtaining population-level birth data for the identified counties, we were able to adequately identify the population at risk as well as determine differences between those at risk who are screened and those at risk who were not screened. We were also able to use the data to determine what maternal, labor and delivery, and infant characteristics influenced both screening and referrals.

Recommendations

In order to improve quality of services and address issues identified through analysis of the birth certificate data and the qualitative interviews, we make four main recommendations:

- *Provision of community resources in postpartum discharge information*

  Childbirth can be a very stressful time. It is common for people to misunderstand or forget information provided during times of high stress. Hospital discharge information noted on the local hospital websites is very comprehensive but includes information about community services located in Leon County. The Healthy Start Coalition of Jefferson, Madison and Taylor Counties has developed in on-line resource guide for information and services in these three counties. A list of county-specific community resources or, at a minimum, the website for the resource guide would be a helpful addition to discharge information provided for women living in Taylor, Madison and Jefferson counties.

- *Possible provision of additional training for hospital staff regarding the infant risk screening and referral patterns of their institution*

  Results from this evaluation highlight the risk factors in the infants who were not screened and/or referred, some of which were quite high. The interviews noted that women had very little or no information about the Healthy Start infant screening during their hospital stay. However, this analysis was conducted using data from a time period almost exclusively prior to the training conducted by the Office of Vital Statistics in fall 2017 and all women interviewed delivered prior

to the training. In-depth interviews of new mothers using the guide and questions from this evaluation would help to define the success of the training from a qualitative standpoint. If women did not understand the need and importance of the infant screen, additional training of hospital staff might be necessary.

- *Continued monitoring of screening and referrals patterns at hospitals to ensure women with at risk infants receive eligible services*

  The decrease in referrals to the Healthy Start program may be directly linked to the decrease in consent for screening and consent for programming. These declines in consent for screening are isolated to one hospital; however, low rates of program consent were present at both hospitals. The Healthy Start Coalition has continued to monitor screening and referrals to the program and has alerted hospitals when issues have arisen. It is recommended that monitoring continues as well as continued education of hospital staff on the importance of screening and programming. However, even after monitoring and training, should referral rates continue to stagnate or decline, it is recommended that the program work with hospitals to develop a quality improvement project aimed at increasing referrals of at risk infants and their mothers to Healthy Start and other community programs.

- *Provision of additional information about the importance of the Healthy Start infant screen in the community*

  The women interviewed were either unaware of Healthy Start or were enrolled in the program prenatally. The Healthy Start Coalition of Jefferson, Madison and Taylor Counties has developed a comprehensive preconception program, teaching women the importance of being as healthy as possible prior to becoming pregnant. There also seems to be quite a bit of information about the Healthy Start Prenatal Screen but less about the Healthy Start Infant Screen. Educating women prior to pregnancy about BOTH screens would provide a more comprehensive picture of services and alert them to the importance of the infant screen.

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THE FLORIDA STATE UNIVERSITY
COLLEGE OF SOCIAL SCIENCES & PUBLIC
POLICY
DEPARTMENT of PUBLIC HEALTH

Improving Public Health Practice: A Pilot Study of High Risk Infant Referrals in Three Florida Counties

In-Depth Interview Guide

Interview Information

Date of Interview:
Age:
Occupation:
Race
       White
       African American
       Asian
       Hispanic
       Multiracial
       Other Race

Purpose of the Study

The main purpose of the research is to understand mothers' experiences with the transition from hospital to home and identify ways to improve communication regarding services and resources available to mothers in the community.

Questionnaire

1. Tell me about your pregnancy and delivery experience? What types of supports did you have? What types of community programs or resources did you connect with? Who told you about the programs and services in your area?

2. Thinking about your hospital stay, what programs did the hospital staff discuss with you? What information did they share about programs that would provide support and services to you and your newborn? What questions did you ask about programs that would provide assistance? How did the staff describe the Healthy Start program? If you were offered Healthy Start, what information helped you decide to join/not join the program?

3. Please think back to when you first came home with your baby. How did you feel? What challenges did you face? What resources and supports did you have? How were you able to get those supports? (*For those who were not in Healthy Start)* What challenges did you face navigating the system to get the support you needed? What resources or supports could have made the transition easier?

4. What types of community programs, resources or support do you think would have helped you during your pregnancy and after you brought your baby home? What do you think your doctors or the hospital should make sure you know about when during pregnancy and after you bring your baby home?

5. If you were in charge of improving the way healthcare providers (doctors, nurses, or hospital staff) communicate with families about what to expect once you come home with your baby, what changes would you make?

Please complete information about the mother and infant at the top of the form even if the mother is not interested in having infant screened. Be certain to check the appropriate boxes at the top of the birth certificate. Use ink.

Healthy Start helps moms find needed services to help reduce the risk of a sickly baby.
Healthy Families Florida promotes positive parenting and healthy child development.

FIRST STEP - SECTION 1 Parent or Guardian

1. Please indicate screening consent by writing initials next to **yes** or **no**. Please sign name at the bottom of section 1.

2. Please indicate program consent and release of information consent by initialing next to **yes** or **no**. **Remember you must sign name at the bottom of section 1.**

SECOND STEP - SECTION 2 Provider or Interviewer

1. There are 10 items on the birth certificate used in determining the Healthy Start screening score. Those items are numbers 54, 4, 28b, 15, 26, 30, 19, 40, 36d and 16. The numbers circled below indicate the point(s) assigned to each item response. Please write the points on the appropriate line on the front of the form.

2. Add the marked points. This total is the Infant's Healthy Start Screening Score. Put this total in the appropriate space at the bottom of Section 2.

3. **Refer the infant to participate in Healthy Start Care Coordination if** (a) the infant screening score is four or more, or (b) the infant is at risk for an adverse outcome based on factors other than score, including maternal illness, homelessness, domestic violence, substance abuse, or other factors that Healthy Start care coordination or risk appropriate care might reduce.

4. Indicate referred or not referred in the appropriate spaces in Section 2.

5. Provider/Interviewer places signature, title and date at the bottom of Section 2. **Be certain to check the appropriate boxes at the top of the birth certificate.**

Number 54 ④
If abnormal conditions include one or more of the following: Assisted ventilation required (30 minutes or more), Assisted Ventilation (6 hrs. or more), NICU admission, newborn given Surfactant Replacement Therapy, Hyaline Membrane Disease/RDS, or seizure or serious neurological dysfunction.

Number 30 ①
If maternal race is black.

Number 4 ④
If the infant's birth weight is less than 2000 grams or less than 4 pounds, 7 ounces.

Number 19 ①
If father's name is not present or is unknown.

Number 28b ④
If infant transferred within 24 hours of delivery.

Number 40 ①
If Mother used tobacco in one or more trimesters.

Number 15 ①
If the mother is not married

Number 36d ①
Prenatal visits less than 2 or is unknown

Number 26 ①
If principal source of payment is Medicaid

Number 16 ①
If maternal age is less than 18 or is unknown

Shelter, counseling, and legal aid are available to families experiencing violence. Call 1-800 500-1119
For substance abuse treatment, call the Family Health Line at 1-800-451-2229
WIC provides pregnant women and children with healthy foods! Call 1-800-342-3556