Florida Department of Health

Healthy Start

annual report 2001

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Florida's Healthy Start program continues to provide pregnant women and infants the care they need to achieve healthy outcomes. Healthy Start offers universal screening for all pregnant women and infants in Florida, to ensure that early care is targeted to those families where there is a need for service in order to prevent or minimize adverse outcomes.

Pregnant women or infants who score 4 or more on their respective risk screens are eligible to participate in Healthy Start. Their health care provider can also refer them to Healthy Start based on factors other than score, and they can enter the program through self-referral as well.

The Healthy Start model is designed to deliver cost-effective prenatal and infant services. The principal components of the program are based on the concept that risk-appropriate health care and social support services should be provided to pregnant women and infants who are assessed as being at-risk for poor birth or health outcomes, and who are unable to effectively access services.

Healthy Start incorporates three primary service delivery components: 1) the universal screening of pregnant women and infants to identify those at-risk; 2) professional assessment of health, social-environmental risk, and an individual's own resources to determine if assistance is needed in overcoming the identified risk; and 3) targeted risk-appropriate care to address the identified risks and prevent poor health and birth outcomes.

The Healthy Start model is designed to deliver cost-effective prenatal and infant services.

Healthy Start participants receive a professional assessment, and services are prioritized based on their level of risk and need. The participant's and family's needs, specific desires, concerns and priorities, and available community resources determine the intensity and duration of delivering Healthy Start care coordination. Many at-risk women and infants will require an initial contact, assessment, evaluation, information, or referrals. Others who have resources to offset their risks may only need information, referrals, and minimal tracking. Pregnant women and infants who have more complex needs and few resources will receive intensive ongoing care coordination, frequent contacts, and other services based on need.

Maternal and child health indicators in Florida continue to improve statewide, indicating that positive system changes are occurring. Since the inception of Healthy Start, there has been a steady increase in the proportion of women who begin prenatal care early in their pregnancies. During 2000, 83.7 percent of women began care during the first trimester, compared to 75 percent before Healthy Start began in 1992.

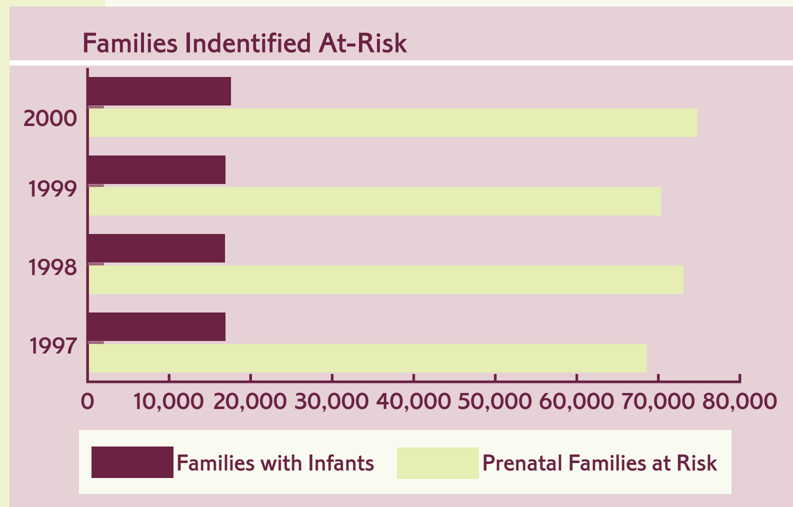
The infant mortality rate, at 6.97 per 1000 births in 2000, has remained lower than the 8.9 per 1000 births in 1991. Most of the improvement is in the neonatal mortality rate and is related to increased survival among very low birth weight babies. Although survival rates at all birth weights have improved, there has been very little change in the statewide rates of low and very low birth weight infants. Low birth weight increased slightly from 7.4 percent in 1991 to 7.98 percent of all live births in 2000. Some of that increase can be attributed to the increase in multiple births, as the low birth weight rate for singleton births dropped from 6.6 percent in 1996 to 6.2 percent in 2000.

This report highlights essential information about Healthy Start services, including the number of at-risk families, number of families that received services, increase in demand for services, and unmet need for services. The report also includes an overview of the Healthy Start Medicaid Waiver, as well as findings from recent program evaluation activities.

Please note: The 2001 annual report uses contract year data, and therefore differs from previous reports that were based on calendar year data for the Healthy Start program.

Families identified at-risk

Florida's universal screening of pregnant women and infants includes a series of questions that focus on medical, environmental, and psychosocial factors that identify a patient as at-risk, such as age of the mother, previous pregnancy history, and home environment. Points are assigned for risk factors, depending on the predictive value of the factors regarding the birth or health outcome.



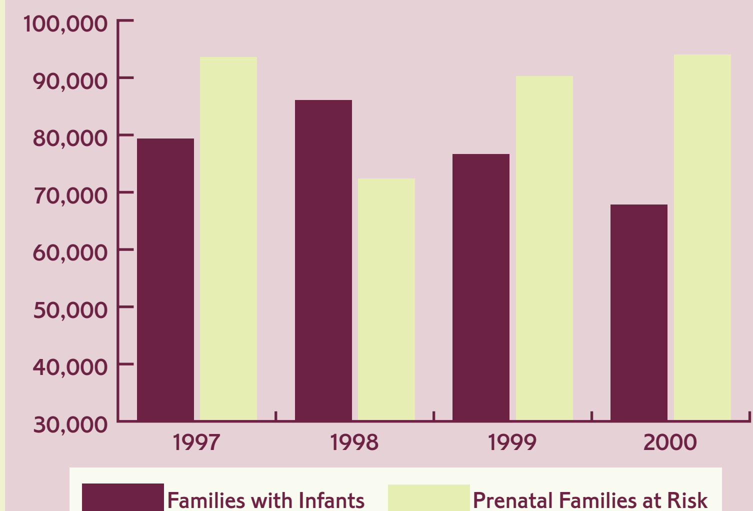
Of the pregnant women who completed a Healthy Start prenatal risk screen, 36 percent scored at-risk for an adverse birth outcome in 2000. During that contract year, an additional 33,593 women were determined to be at-risk for factors other than score. Of the infants who were screened, 11.7 percent scored at-risk for adverse health outcomes.

Families receiving Healthy Start services

After a pregnant woman or the parents of an at-risk infant have been contacted, those who are determined to be at-risk will receive ongoing care coordination appropriate to their level of risk and need. Care coordination is provided by both health care professionals and paraprofessionals. Many services are available and include:

counseling for preterm labor and prenatal care;
nutrition counseling and smoking cessation;
anticipatory guidance (what to expect as a pregnancy advances or as an infant develops);
childbirth, breastfeeding, and parenting education;
how to access medical or financial resources; and
assistance in breaking free of domestic violence.

From October 1999 through September 2000, approximately 94,056 pregnant women and 67,803 infants received Healthy Start services. During this same period nearly 1,023,899 prenatal and 717,013 infant services such as nutritional counseling, psychosocial counseling, parenting education, breastfeeding education, and smoking cessation were provided.



In 2000, the state program office provided intensive training and technical assistance on risk-appropriate care and the targeting of services based on need. The result was that services were provided at a higher level of intensity to participants. Therefore, the number of services increased while the total number of individuals served did not increase during the year.

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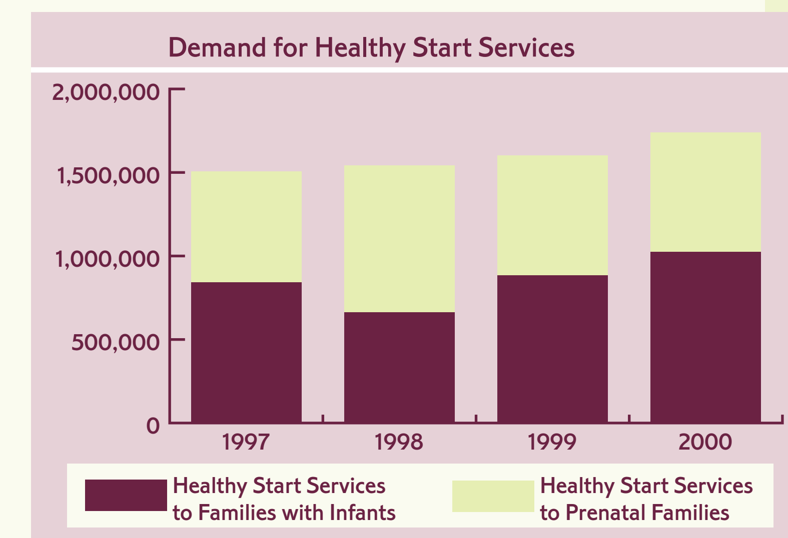
Increased demand for Healthy Start services

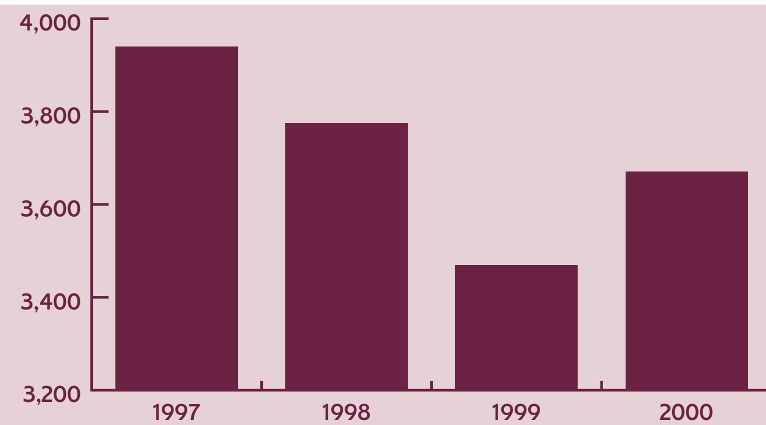
Since implementation, Florida's Healthy Start services and components have been integrated with maternal, prenatal, and infant care across the state. Pregnant women, infants, and community providers rely on the Healthy Start program to coordinate essential services. The increased demand for Healthy Start services is illustrated by the growth in services provided to the program's participants. This increased service demand demonstrates confidence in the effectiveness and success of Healthy Start. Community partners and clients see the Healthy Start program as a key element in the improvement of pregnancy and birth outcomes.

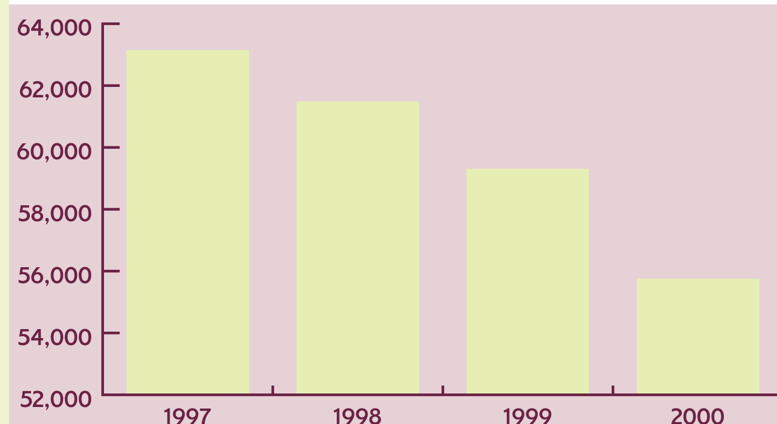


Unmet need for Healthy Start services

The Healthy Start screening process has identified thousands of Florida's most vulnerable pregnant women and infants. Health care professionals, social workers, and paraprofessionals have utilized information from the screening instruments to provide critical services to these at-risk families. Healthy Start services such as psychosocial and nutrition counseling, transportation, parenting and childbirth education, and general support assist families in finding housing, obtaining high school diplomas, receiving preventative health care, and leaving unsafe environments or situations.

Although an increasing number of families use these beneficial services, there is still an unmet need. There are many at-risk families who do not receive Healthy Start services and therefore do not receive the advantages that program participation can provide. The intent of the Healthy Start Medicaid Waiver, described later in this report, is to impact the unmet need by decreasing the number of at-risk families who do not receive services. The number of families with unmet need is calculated using Healthy Start screening data to estimate families at potential risk for poor birth and health outcomes.





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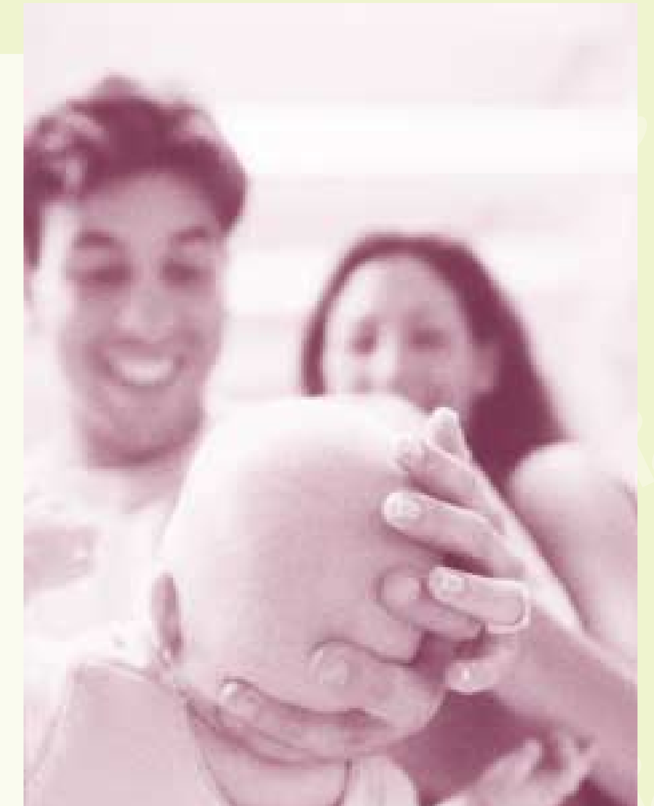
Healthy Start Medicaid Waiver



The Healthy Start Medicaid Waiver, implemented by the Department of Health on July 1, 2001, will allow the state to bill for services not previously covered by Medicaid. The waiver will provide an estimated $9 million in federal funds for Florida's at-risk pregnant women and children. With this additional funding, the Healthy Start program will serve more pregnant women, infants, and children through increased care coordination, while also increasing the intensity and duration of care and services provided to at-risk pregnant women and children to match their risk and need. Estimates of benefit-to-cost ratio range from $1.49–$7.00 for every $1.00 spent on prenatal and infant services. The waiver builds on public-private partnerships developed over the past 10 years between the department's Maternal and Child Health Program and local Healthy Start coalitions, successfully using a community-based process to develop coordinated systems of care.

As part of the Healthy Start waiver, pregnant women in Florida are able to apply for Medicaid using a simple, one-page mail-in application. Any health care provider (private physicians, clinics, hospitals, public health agencies) can obtain these applications for distribution to patients. Completed applications, which must include proof of pregnancy, are processed by the state using streamlined procedures. Women who are eligible for Medicaid during pregnancy also receive assistance in selecting a health care provider, keeping medical appointments, and obtaining WIC, Healthy Start and other services through MOMcare, the choice counseling and care management portion of the waiver. MOMcare began October 1, 2001.

Evaluation findings for Healthy Start prenatal services and birth outcomes

In the fall of 2001, formal evaluation activities were undertaken to determine whether women who receive Healthy Start services are associated with reduced risk of poor birth outcomes. There is indeed evidence that Healthy Start works.

Three data sets were used in the evaluation process: prenatal screening, service data, and birth outcome data. The three data sources were matched to create a file of records for 75,461 women who gave birth in 1999 and who also had a prenatal screening record that matched the birth record.

The analysis examined low birth weight (LBW), which is birth weight below 2500 grams (approximately 5.5

pounds). The odds ratio of LBW was computed for each risk factor. The odds ratio is a measure of LBW risk associated with each factor.

These odds ratios were computed separately for the two comparison groups, women who received Healthy Start services and those who did not. It was hypothesized that if Healthy Start services are associated with reduced risk of LBW, then the odds ratios will tend to be smaller for women who receive Healthy Start services.

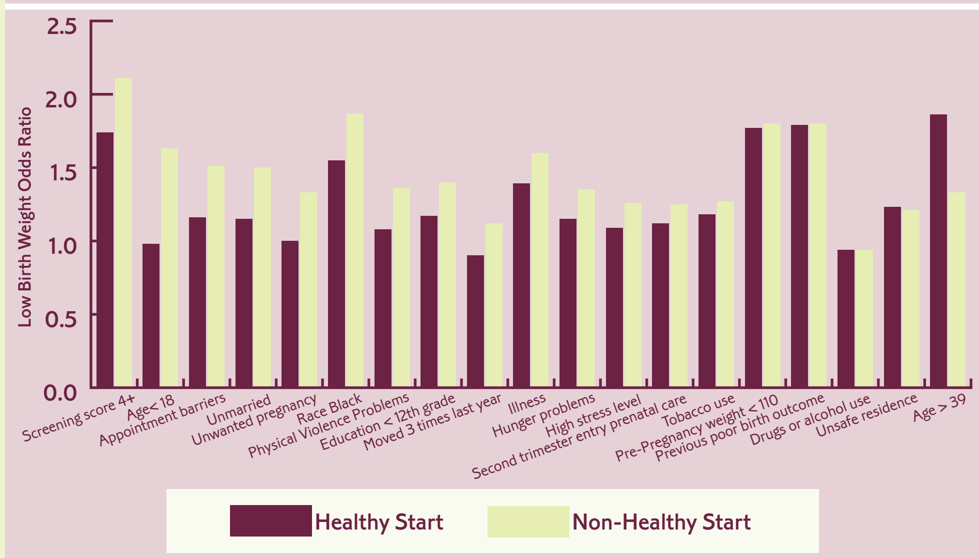
The results are shown in the graph below. There are 19 risk factors in the graph from the Healthy Start prenatal screening form. The first factor represents a composite of the other factors and is the overall result of the Healthy Start screening (those scoring 4 or more on the screen, thus indicating higher risk).

A comparison of the odds ratios for women who received Healthy Start services to those who did not receive Healthy Start services shows that, for 16 of the 19 factors, the odds ratios are higher for women who did not receive Healthy Start services. These differences are statistically significant for 11 of the factors ($p = .05$). This is consistent with the hypothesis that Healthy Start services mitigate the risk associated with those factors.

For example, the odds ratio for having a low birth weight infant for a woman age < 18 is 1.63 for non-Healthy Start clients but .98 for Healthy Start clients. This suggests Healthy Start services positively impact the risks associated with age < 18 and low birth weight. This is consistent with the programmatic framework that provides care coordination for women in the Healthy Start program to mitigate the risk associated with age < 18.

It is important to note that because women were not randomly assigned to receive or not receive Healthy Start services, the research design precludes the ability to determine causality in the way an experimental treatment versus control study would. However, this evaluation supports the hypothesis that Healthy Start reduces risk of low birth weight. This study contributes to the field of knowledge confirming that comprehensive services such as those provided by Florida's Healthy Start may have a positive impact on birth outcomes.

Low Birth Weight Odds Ratio for Healthy Start and Non-Healthy Start Clients by Prenatal Risk Factor



Evaluation of the Healthy Start infant screening criteria

The Healthy Start infant screen, developed in 1992, was designed to identify infants who have an increased risk of postneonatal death (age 28 days to 1 year).

A score of 4 or more indicates that an infant is at increased risk for postneonatal death. The graph below shows that higher scores are more closely associated with greater postneonatal death rates.

The screening criteria remained constant since the screen's development in 1992. In 1997, the performance of the screening criteria was evaluated using 1993 data. The screening was found to be performing as well with the 1993 data as it was when initially developed in 1992. Data from 1989 was used for the initial evaluation.

In 2001, the performance of the screening criteria was again evaluated, this time using 1998 data. With the results of this analysis, we now have performance data based on three separate years, 1989, 1993, and 1998.

The screening results have been remarkably consistent across the three years examined. There has been a slight improvement in the performance of the screen in that the percent at-risk has decreased from 13.3 percent in 1989 to 10.1 percent in 1998, while the sensitivity has increased from 48.2 percent in 1989 to 50.7 percent in 1998. The screening appears to do a better job of identifying infants who are at-risk of postneonatal death in 1998 compared to 1989.

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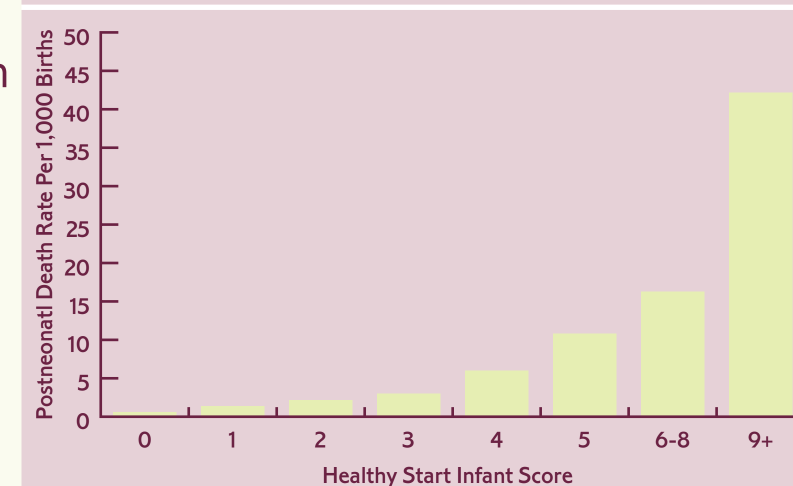
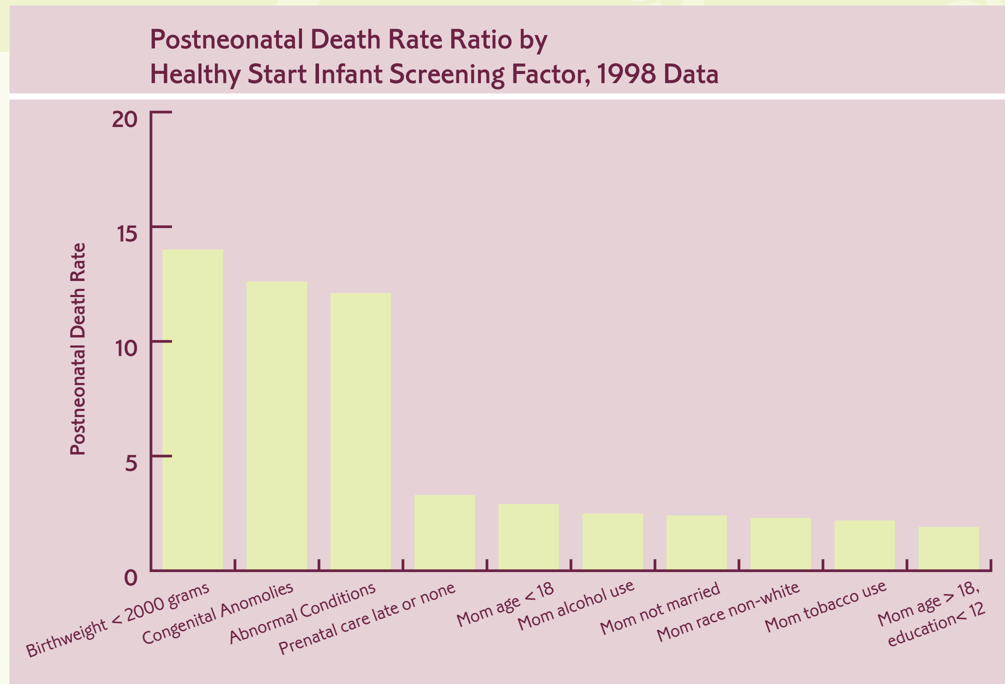
Postneonatal Death Rate by Healthy Start Infant Score, 1998 (per 1,000 births)





There are 10 scored risk factors on the Healthy Start infant screen. In the initial development of the screen, it was determined that all of the 10 factors were associated with an increased risk of postneonatal death. This study was undertaken to re-evaluate the effectiveness of the infant screen. The postneonatal death rate for each of the 10 factors was computed, using 1998 data, and these rates were used to calculate the rate ratio for each factor. The results are in the graph above.

All of the factors are significantly associated with increased rates of postneonatal death. As found in the original analysis, the rate ratios for birth weight < 2000 grams, congenital anomalies, and abnormal conditions are quite high at 14.03, 12.61, and 12.10 respectively. In practice, infants with any of these factors are classified as at-risk on the Healthy Start infant screen and automatically referred for services.

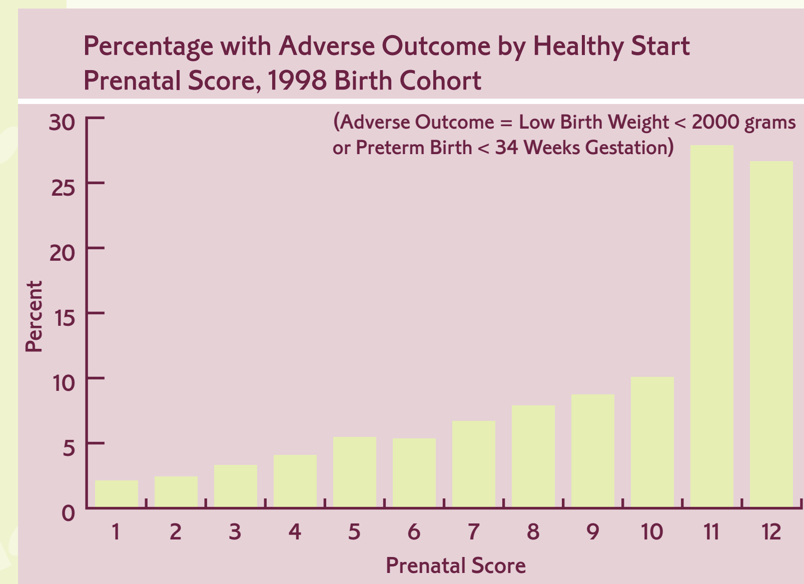
In summary, it appears the Healthy Start infant screen is performing even better than when it was first implemented in 1992, and there is consistent evidence that all of the factors used in the screening are indicators of increased risk for postneonatal death.

In summary, it appears the Healthy Start Infant screening is performing even better than when it was first implemented in 1992, and there is consistent evidence that all of the factors used in the screening are indicators of increased risk for postneonatal death.

Analysis of the Healthy Start prenatal screen

The Florida Healthy Start prenatal screen, created and implemented in 1993, identified 37 percent of pregnant women screened in 1998 as having an elevated risk for the adverse birth outcomes of low birth weight or preterm birth. Approximately 51 percent of the low birth weight and preterm births to women screened occur to the 37 percent of women classified as at-risk.

A score of 4 or more indicates that a woman is at increased risk for an adverse birth outcome of low birth weight or preterm births. The graph below shows that higher scores are more closely associated with adverse outcome.



In 2001, an evaluation of the prenatal screen was conducted using 1998 birth records matched to prenatal screens. The evaluation assessed the overall effectiveness of the screen and determined the change in the pattern of associations with adverse outcome for the screening risk factors since the implementation of the screen. The main purpose of the evaluation was to inform efforts towards revising and improving the screen.

Unadjusted risk ratios and confidence intervals were calculated for associations between risk factors on the screen and adverse outcome. The primary finding was that most of the risk factors that are weighted on the prenatal screen are indeed associated with the adverse outcomes of low birth weight or preterm birth. The results of the analyses are included on the next chart (p. 10) entitled Unadjusted Risk Ratios for Adverse Outcomes.

The Unadjusted Risk Ratios for Adverse Outcomes chart shows that women who scored at-risk on the screen were 1.77 times as likely to have an adverse outcome compared to women who did not score at-risk. The prenatal screen selects women who score 4 or more points as at-risk for adverse outcome. Black women receive two points and all other risk factors receive one point on the prenatal screen.

Other risk ratios on the Unadjusted Risk Ratios chart are listed in descending order of magnitude by the association between the risk factor and adverse birth outcomes. Risk factors in green are statistically significant and those in lavender are not. As expected, black race was most strongly associated with adverse outcome. The risk ratio for black race was 1.88, meaning that black women were almost two times or 188 percent as likely to have an adverse outcome as women of any other race. Other risk factors, descending to the right on the chart, show the risk ratio associations to adverse outcome.

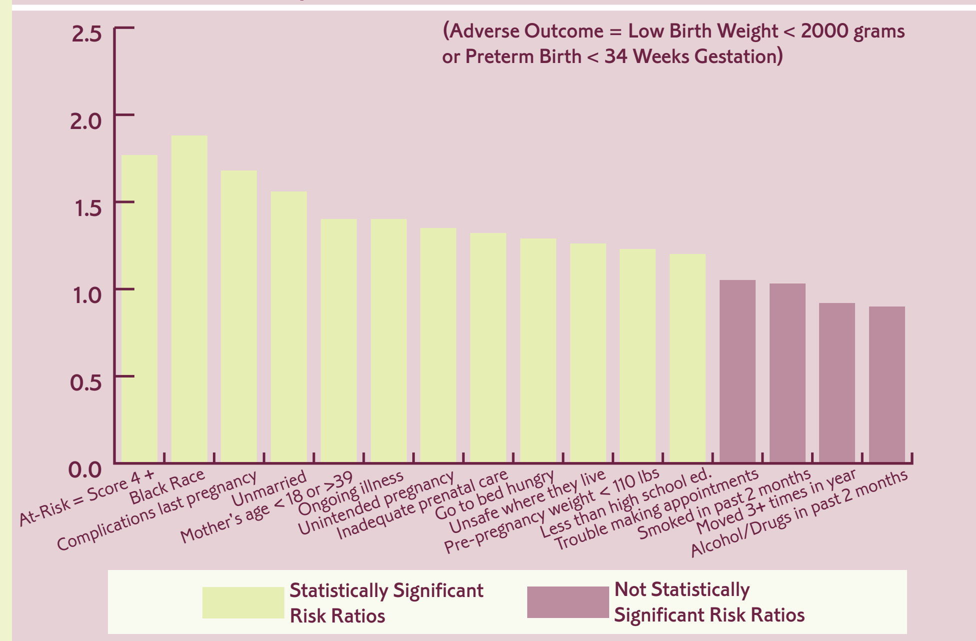
Additional analysis was conducted to compare the 1993 and 1998 screening risk ratios and confidence intervals for weighted items to discover if the changes identified between the two time periods were statistically sig-

nificant and not due to random variation. Screening items that have significantly reduced associations with adverse outcome between 1993 and 1998 include black race, unintended pregnancy, unmarried, and difficulty making appointments. No significant increases were identified for the association between risk factors and adverse outcome since 1993. As mentioned, black race remains the most strongly associated with adverse outcome in 1998 (risk ratio = 1.88). In fact, black race had a stronger relationship to adverse outcome than a Healthy Start score of 4 or more (risk ratio = 1.77). However, black race was more strongly associated to adverse outcome in 1993 than in 1998 (risk ratio = 2.14 compared to 1.88 respectively). Although the low birth weight rate has not diminished substantially during that time period, race explains less of the risk for low birth weight in 1998 than it did in 1993. The reduction of the risk explained by black race, unintended pregnancy, unmarried, and trouble with appointments could be a program effect of Healthy Start.

A few items that receive weights on the prenatal screen are weakly or not associated with low birth weight or preterm birth for the 1998 birth cohort. These items are shown on the Unadjusted Risk Ratios for Adverse Outcomes chart in lavender and are the four bars on the right. However, maternal and child health research suggests that these items are risk indicators, so we continue to score these items when determining the need for Healthy Start services.

The prenatal screen continues to perform well, selecting a relatively small caseload that identifies over half of the women who have adverse outcomes. Future research must investigate all the weighted and unweighted risk factors for adverse outcome on the prenatal screen and adjust for correlations with other risk factors.

Screening women during the prenatal period is important because it provides better access to Healthy Start and other services to women at elevated risk for low birth weight and preterm birth. Universal screening has not yet been achieved and is a continuing goal of Healthy Start.



In partnership with the Department of Health, the following Healthy Start Coalitions provide local leadership and planning for a system of care to promote optimum health outcomes for pregnant women and infants.

Bay, Franklin, Gulf Healthy Start Coalition, Inc.
Broward Healthy Start Coalition, Inc.
Capital Area Healthy Start Coalition, Inc.
Central Healthy Start, Inc.
Charlotte County Healthy Start Coalition. Inc.
Escambia County Healthy Start Coalition, Inc.
Florida Keys Healthy Start Coalition, Inc.
Gadsden Citizens for Healthy Babies, Inc.
Healthy Start Coalition of Brevard County, Inc.
Healthy Start Coalition of Hardee/Highlands/Polk Counties, Inc.
Healthy Start Coalition of Hillsborough County, Inc.
Healthy Start Coalition of Jefferson/Madison/Taylor Counties, Inc.
Healthy Start Coalition of Manatee County, Inc.
Healthy Start Coalition of Miami-Dade, Inc.
Healthy Start Coalition of Pasco County, Inc.
Healthy Start Coalition of Pinellas County, Inc.
Healthy Start Coalition of Santa Rosa County, Inc.
Healthy Start Coalition of Sarasota County, Inc.
Healthy Start Coalition of Southwest Florida, Inc.
Healthy Start Coalition of St. Lucie County, Inc.
Healthy Start Coalition Three, Inc.
Healthy Start Community Coalition of Okaloosa and Walton Counties, Inc.
Healthy Start of North Central Florida, Inc.
Indian River County Healthy Start Coalition, Inc.
Maternal Child Family Health Alliance of Palm Beach County, Inc.
Martin County Healthy Start Coalition, Inc.
Northeast Florida Healthy Start Coalition, Inc.
Okeechobee County Family Health/Healthy Start Coalition, Inc.
Orange County Healthy Start Coalition, Inc.
Seminole County Healthy Start Coalition, Inc.
The Healthy Start Coalition of Osceola County, Inc.
The Healthy Start Coalition of Flagler and Volusia Counties, Inc.

For more information on Healthy Start, please contact:

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