

Florida Infant Risk Screening Tool

Location: Florida
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 Category: **Promising Practice**

BACKGROUND

In 1991, the Florida Legislature passed legislation that required the Florida Department of Health (formerly named the Florida Department of Health and Rehabilitative Services) to come up with an instrument that could be used to screen all infants born in Florida to identify those with the greatest risk of having health problems. The Florida Department of Health developed the Florida Infant Risk Screening Tool and implemented it statewide in 1992.

According to the National Center for Health Statistics, Florida's infant mortality rate per 1000 live births for 2010 was 6.54. The national rate for the same year was lower at 6.15 and there were 26 other states with lower infant mortality rates than Florida. (National Vital Statistics Reports, Volume 61, Number 4, Deaths: Final Data for 2010, http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_04.pdf)

This indicates there is progress to be made in reducing Florida's infant death rate- at least equating with the national level. To accomplish this goal, the Infant Risk Screening Tool was developed.

The Infant Risk Screening Tool has been successful as a screening instrument and has demonstrated that data on the birth certificate can be used to effectively identify infants that have a higher risk of death within the post neonatal period. The tool has been effective in identifying infants that are at high risk of post neonatal death.

PROGRAM OBJECTIVES

Overall Goal:
 Reduce the infant death rate in Florida.

TEN ESSENTIAL PUBLIC HEALTH SERVICES ADDRESSED

14: A) Percent of women who smoke during pregnancy and B) Percent of children who live in households where someone smokes.

Objective:

Screen every infant born in Florida for increased risk of post neonatal death (death at age 28 to 364 days) and refer the high risk infants for services that mitigate the risk of post neonatal death.

TARGET POPULATION/PROGRAM ACTIVITIES

The screening is offered to the parents of every newborn in Florida and about 95% of the parents choose to have the screening completed. The screening is based on data from the birth certificate and is performed before the infant leaves the hospital. Infants who screen as being at an increased risk of post neonatal death are referred to infant health care providers for enhanced services directed at reducing the risk.

PROGRAM OUTCOMES/EVALUATION DATA

The Infant Risk Screening Tool is evaluated annually. This is accomplished by linking birth records to infant death records and using the linked data to calculate screening statistics such as sensitivity, specificity, positive predictive value and positive rate. The individual screening factors are also evaluated to assure that they continue to be associated with risk of post neonatal death.

Improvements to the screening tool are likewise evaluated using the linked data and when the analysis indicates that substantial improvement is needed, the process to revise the screening is initiated. In the past, increases in sensitivity of less than five percent were deemed too small to warrant the extensive effort and expense required to change the screening criteria. However, increases in sensitivity above five percent are carefully considered and increases of ten percent or more are substantial and warrant a change in the screening criteria.

In 2014, the Florida Department of Health Infant Screening identified 33,932 infants who were at increased risk for post-neonatal death and all of these infants were referred to the Florida Healthy Start Program. In addition, 45,267 (26%) of the infants who were negative on the screening were referred to the Florida Healthy Start Program, based on other factors. Florida's Healthy Start Program is designed to serve infants most at risk for poor health outcomes. The infant screening is used to accomplish this by referring all of the infants who screen positive to Healthy Start.

Once referred, Healthy Start care coordinators are responsible for providing/attempting to provide, the three stages of the care coordination processes which include:

- 1) Initial contact. This is the first contact between participants who were referred to Healthy Start and the Healthy Start program staff.
- 2) Initial assessment. This stage consists of a face-to-face assessment of participant risks and needs.
- 3) Ongoing care. This stage is offered to participants who are found to have risks and needs warranting ongoing care and Healthy Start services based on results of the initial assessment. Reassessment of needs and risks will continue throughout the eligibility period or until closure.

As a result of the Florida Infant Risk Screening tool, over 30,000 infants each year are identified as being at increased risk of infant mortality and morbidity, and are referred to the Florida Healthy Start Program for enhanced services to mitigate the increased risk. These infants are 7.6 times as likely to die in the post neonatal period as infants who are classified by the screening as lower risk. Without the screening many of these infants would not be referred for services to address and reduce their increased risk of mortality and morbidity.

PROGRAM COST

The cost for the annual evaluation of the screening is approximately \$21,000. This is the estimated cost for staff to evaluate the screening plus the cost for staff who review the results of the analysis.

The cost for performing the screening is approximately \$1.44 per screening. In 2014 there were 207,331 infants screened which works out to about \$300,000 for all of the screenings in 2014.

ASSETS & CHALLENGES

Assets

One of the major assets in the development and implementation of the Infant Screening was the multi-disciplinary team approach that includes applied expertise from RNs, MDs, Epidemiologists, Statisticians and Public Health leaders. Exceptional organizational and political support was also major assets.

Challenges

Unfortunately, the screening data and the service data are not linked so we do not have a direct measure of service utilization for infants who were positive on the screening. Linking data files is difficult with infants since they do not have social security numbers or client ID numbers until sometime after they are born.

Overcoming Challenges

Currently, major revisions to the service reporting computer systems are being implemented. The improved capabilities of these systems may make it possible to link infants with service data more effectively than the previous computer systems.

LESSONS LEARNED

The guiding principal for the Infant Screening has always been that the screening would be developed and evaluated based on empirical evidence. In practice this means every risk factor included on the screening must have empirical evidence that it will improve the screening performance. Fortunately, having birth data which links to infant death data permits every potential risk factor for its contribution to the overall screening performance to be assessed. Research literature has been used to identify candidate risk factors for the screening, but these are evaluated using Florida specific data before they are considered for inclusion on the Infant Screening.

FUTURE STEPS

The last evaluation that resulted in a revision of the screening criteria was completed in 2011. The results of this evaluation are available at: <http://www.floridahealth.gov/programs-and-services/childrens-health/healthy-start/healthy-start-docs/summaryinfantscreeninganalysis2013.pdf>.

The department will continue to evaluate the screening tool annually to determine if the level of performance is being maintained and whether there are any changes that could improve its effectiveness.

COLLABORATIONS



The Infant Risk Screening Tool was developed by staff at the Florida Department of Health in collaboration with an advisory committee made up of representatives from the county health departments, universities, the state legislature, and representatives from the private health care sector.

PEER REVIEW & REPLICATION

In 2012 the Infant Risk Screening Tool was reviewed and revised by subject matter experts in statistics, epidemiology, infant health care and prenatal health care. Every comment and suggestion for modification of the screening was addressed by using Florida birth data linked to infant deaths to assess the potential improvement that might be made by adopting the suggestion. This process led to several refinements of the screening. Once improvements were made, the impact of the change from the old screening to the new screening was concluded in a paper entitled "Comparison of Revised Florida Infant Risk Screening Implemented in 2012 to Previous Screening". The results showed the screening implemented in 2012 had sensitivity for post neonatal death of 60.9% with a positive percentage of 17.0%. In contrast, the previous screening had sensitivity for post neonatal death of 49.0% and a positive percentage of 12.7%.

Several other states have inquired about the screening, but to our knowledge no other states have actually implemented a similar screening. However, a similar screening is also in place in Florida for pregnant women. The prenatal screening is evaluated and revised using generally the same methods.

RESOURCES PROVIDED

Summary of Healthy Start Infant Screening Analysis
<http://www.floridahealth.gov/programs-and-services/childrens-health/healthy-start/healthy-start-docs/summaryinfantscreeninganalysis2013.pdf>

Using the Birth Record to Develop a Screening Instrument for Infant Mortality and Morbidity 1993
<http://www.floridahealth.gov/programs-and-services/childrens-health/healthy-start/healthy-start-docs/infscreen1993.pdf>

Comparison of Revised Florida Infant Risk Screening Implemented in 2012 to Previous Screening Department of Health website at:
<http://www.floridahealth.gov/diseases-and-conditions/infant-mortality-and-adverse-birth-outcomes/data/oldvsnew-infantscreeninganalysis12-16-14.pdf>

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Key words: Infant risk screening, post neonatal mortality, infant health, infant mortality, Florida Healthy Start

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