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Healthy Start Infant Screening: Postneonatal Mortality Rates by Screening Score

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8/4/11 – Dan Thompson

Florida implemented the statewide Healthy Start initiative in April 1992, as a result of legislation passed in 1991. Section 383.14, Florida Statutes, requires the Department of Health to implement a newborn screening process for identifying infants at increased risk of mortality and morbidity.

The department developed the Healthy Start Infant Risk Screen instrument in 1991 in collaboration with the Healthy Start Advisory committee, which included representatives from county health departments, universities, the legislature, and the private healthcare sector.

Department staff monitors the performance and effectiveness of the infant screen on an annual basis. The purpose of this analysis is to assess the relationship between the screening risk scores and risk of infant death at age 28 to 364 days (also known as postneonatal death). Infant deaths at age 0 to 27 days are excluded from the analysis because they are the focus of programs and services that begin before the Healthy Start infant services.

The data used in this analysis were birth records for the years 2005 through 2009 linked to infant death records in instances where the infant died. The Department of Health, Office of Vital Statistics maintains a cross reference file of births linked to infant deaths. Various methods are used by the Office of Vital Statistics to link the records. Essentially, efforts are made to locate birth records for all death records where the age at death is 7 or less. When the birth record is found, the birth certificate number and death certificate number are added to the cross reference list.

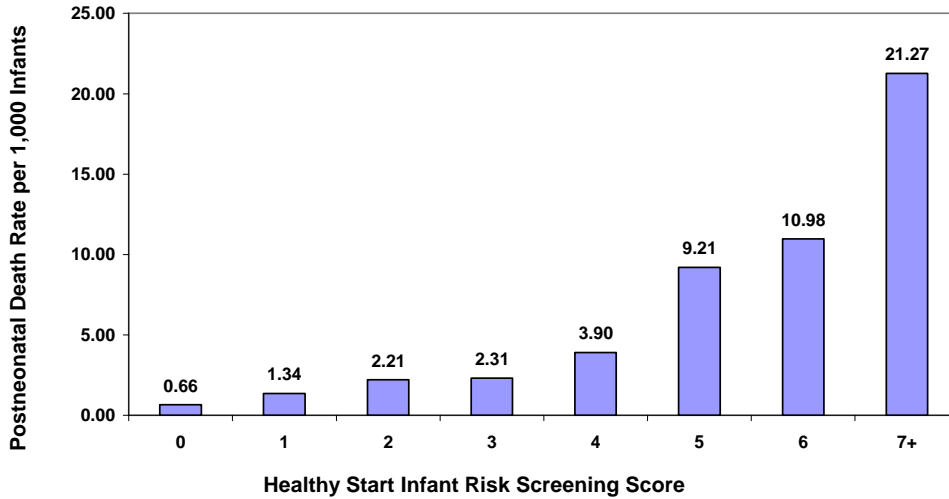
Before exclusions, there were 1,151,732 records in the data file. We excluded 207,375 birth records because the parents declined the screening, and 7,676 were excluded due to adoptions. Adoptions were excluded because the birth mother's information is not available on the birth record and some of this information is required for the screening. We excluded 3,183 infants who died before age 28 days from the analysis for reasons explained above. After these exclusions, there were 933,498 records available for the analysis.

The birth record includes the Healthy Start Infant Screening risk score. A risk score of four or above is considered positive on the screening and the infant is classified high risk for postneonatal death. Data on the linked file were used to compute the postneonatal death rate per 1,000 births for each screening score.

As shown in the graph and tables below, the postneonatal death rates increase steadily with increasing screening scores. For example, the rate for births with a risk score of zero is 0.66 per 1,000 births. In contrast, the rate for births with a score of four is 3.90 or 5.9 times the rate for infants with a score of zero.

In summary, the Healthy Start Infant screening risk scores are closely associated with risk of postneonatal death. Infants with higher scores on the Healthy Start Infant screening have higher risk of postneonatal death.

**Postneonatal* Death Rates by Healthy Start Infant Screening Score
For 933,498 Infants Screened in Florida 2005 - 2009**



* Infant death at age 28 to 364 days

Source: Florida Department of Health

**Postneonatal Death Rates by Healthy Start Infant Screening Score
For 933,498 Infants Screened in 2005 - 2009**

Healthy Start Infant Screening Score	Number of Infants	Postneonatal Deaths	Postneonatal Death Rate Per 1,000 Infants	Margin of Error (Alpha = 0.05)	Cumulative* Postneonatal Death Rate
0	274298	181	0.66	0.10	2.64
1	248330	334	1.34	0.14	3.47
2	183862	406	2.21	0.21	4.75
3	81833	189	2.31	0.33	6.81
4	70183	274	3.90	0.46	9.34
5	23571	217	9.21	1.22	14.43
6	22228	244	10.98	1.37	16.82
7+	29193	621	21.27	1.66	21.27
Total	933498	2466	2.64	0.10	

*Postneonatal death rate for infants with this screening score or higher

**Florida Births by Healthy Start Infant Screening Score
For 933,498 Infants Screened in 2005 - 2009**

Healthy Start Infant Screening Score	Number of Infants	Percent of Infants	Cumulative* Percent of Infants
0	274298	29.4%	100.0%
1	248330	26.6%	70.6%
2	183862	19.7%	44.0%
3	81833	8.8%	24.3%
4	70183	7.5%	15.6%
5	23571	2.5%	8.0%
6	22228	2.4%	5.5%
7+	29193	3.1%	3.1%
Total	933498	100%	

* Percent of infants with this screening score or higher