

## **Neural Network Analysis Applied to Risk Prediction of Early Neonatal Death**

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**Abstract :** Children deaths are traumatic events that most often can be prevented. The technology of prevention and intervention in cases of infant deaths is available at low cost and with solid evidence and favorable results, however, with low access cover. Weight is one of the main factors related to death in the neonatal period, so the newborns of low birth weight are a population at high risk of death in the neonatal period, especially early neonatal period. This paper describes the development of a model based in neural network analysis to predict the mortality risk rating in the early neonatal period for newborns of low birth weight to identify the individuals of this population with increased risk of death. The neural network applied was trained with a set of newborns data obtained from Brazilian health system. The resulting network presented great success rate in identifying newborns with high chances of death, which demonstrates the potential for using this tool in an integrated manner to the health system, in order to direct specific actions for improving prognosis of newborns.

**Keywords :** low birth weight, neonatal death risk, neural network, newborn

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