MATERNAL COMPLIANCE WITH CARDIOPULMONARY MONITORING. T. Carbone, B. Ousfeld, D. Kwiatkowski, M. Hiatt, T. Hegyi
Mothers of asymptomatic siblings of SIDS comply at a lower rate with recommended usage of cardipulmonary monitoring compared to mothers of symptomatic premature infants or mothers of infants who have experienced an apparent life threatening event (ALTE). Families were enrolled in a monitoring program that provided education, training, medical follow-up and psychosocial support. Monitors were downloaded following any events evoking parental concern or at the end of each month and hours of use were recorded. The average ratio of daily use (use/hr) in the first month was 10. A second average daily compliance score was based on actual versus recommended hours of use, scores ranging from 1 (<100% compliance with recommendations and <9 hours of use) to 6 (100% compliance and )

25

TARGETING PRIMARY HEALTH CARE TO HIGH RISK INFANTS - THE NEXT STEP IN THE PREVENTION OF UNEXPECTED INFANT DEATH. RG CARPENTER, EM TAYLOR, DZ MYERBERG

INTRODUCTION: In the UK there has been a big reduction in both explained and unexplained unexpected infant deaths associated with the 1991 'reduce the risk' campaign. Residual deaths appear increasingly associated with very high risk situations.

OBJECTIVES: Two studies, one in Sheffield, U.K., the other covering the whole of West Virginia, U.S., were set up to reduce infant deaths by identifying high risk infants and providing appropriate primary health care.

METHODS: Both studies used the Sheffield Birth Score to identify high risk infants; these received regular care from health visitors (Sheffield) or pediatricians (WV) which included regular weighing. In addition in WV clinically at risk infants received special care including a home apnea/bradycardia monitor if appropriate.

RESULTS: The Sheffield programme focused on a small very high risk group; for them it was estimated that mortality was reduced from 46 per 1000 to 5.1 per 1000, P = 0.024. The WV programme was associated with a 28% reduction in total postnatal mortality in the State, P < 0.001.

CONCLUSION: Efficient screening of all infants for risk and targeting appropriate health care is a practical and efficient way of achieving further reductions in infant mortality.

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MULTI-LEVEL STATISTICAL MODELING FOR ANALYSIS OF REPEATED MEASUREMENTS: EFFECT OF A BREATH OF OXYGEN ON THE BREATHING OF INFANTS. RG CARPENTER

BACKGROUND: Physiological experiments on infants often involve multiple observations which may be repeated on two or three occasions. Such data are hierarchically structured with components of variation associated with subjects, occasions and individual observations. Data are often unbalanced. A study of the effect of a single breath of oxygen on the breathing of infants (1) is a classical example.

OBJECTIVE: To construct a model that incorporates all aspects of the data, including observations made in both quiet sleep and dreamlike sleep, which are much more variable.

METHOD: Analysis of such data by standard statistical methods is difficult and inefficient, e.g., observations made when the child was in dreamlike sleep would be excluded. Wrong conclusions may be drawn if the structure of the data is ignored. The construction of an appropriate multilevel model for the data is described. This was fitted using a new computer program, ML3 (2).

RESULTS: Residual variation of observations made in dreamlike sleep was nearly double that in quiet sleep. Nevertheless, ML3 enabled all the data to be included in a single analysis and gave correctly weighted estimates of the experimental effects with 12.5% smaller than previously reported.

CONCLUSION: ML3 is an exciting new tool for the analysis of physiological data with complex structure, and should be widely used.

REFERENCES:

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SIDIS IN BRESCIA (1982-1994): SOCIAL AND FAMILIY ASPECTS
A. Corti, F. De Ferrari, C.A. Romano
In the department of forensic medicine of Brescia (1982-1994) 21 cases of suspected sudden infant death syndrome (up to two years) were analyzed. In twelve of these the cause of death has been identified histologically as inflammatory pathology, while nine of them are true SIDS. Two cases of these twentyone refer to children belonging to nomadic peoples, both with inflammatory pulmonary pathology. The absolute statistics are small, but the relative statistics (about 20%) have induced the Authors to look for possible correlations between their social-cultural environment and the cause of death.

The two cases were in different seasons (summer/winter) and so not directly reported as inflammatory pathology.

In these ethnic groups, on the contrary, there is the inclination for carelessness toward, or relinquishment of the children, and they don't attend to the children adequately with affection and care.

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