Newborn Individualized Developmental Care and Assessment Program – NIDCAP

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Summary and Conclusions

TECHNOLOGY AND TARGET GROUP Important advancements have been made in recent years regarding the care of sick and preterm infants. Health services in Sweden, and internationally, have introduced various methods aimed at promoting bonding, breastfeeding, and neurological development. A common feature of these methods is their focus on the newborn as an individual who has the capacity to interact with his or her environment. An intervention model, the Newborn Individualized Developmental Care and Assessment Program (NIDCAP), has been developed to stimulate preterm infants at levels adapted to the child's degree of neurological maturity. In Sweden, approximately 2800 children are born each year with birth weights under 2500 grams. Around 500 of these infants have birth weights below 1500 grams. The target group for NIDCAP is preterm infants, but exact parameters regarding gestational age or birth weight are not specified.

PRIMARY QUESTION What effects does NIDCAP have in preterm infants on the psychomotor development, neurological status, and medical/nursing care outcomes during their inpatient stay, and what are the potential cost-related effects of the method? This assessment is based on a systematic literature review.

PATIENT BENEFIT The evidence compiled on the effects of NIDCAP is based on 11 articles that stem from 6 randomized controlled trials including approximately 250 children. Each of the studies was appraised as having medium quality and internal validity. Most of the studies were small, and several investigated many different outcome variables, eg, respiratory distress, feeding/growth, and complications, which somewhat diminishes the value of these studies. All of the studies compared psychomotor development and neurological status between the intervention and control groups. The longest followup period reported in the studies was just over 5 years. In outcome variables where a significant difference was found between the intervention and control groups, all of the studies showed better results for the NIDCAP group. The improvements were demonstrated mainly in cognitive and psychomotor development. The findings also showed a reduced need for respiratory support.

ECONOMIC ASPECTS NIDCAP involves costs for the specialized training of personnel and costs for the continuous behavioral observation associated with the method. No studies have been identified that weigh the total cost of the method against its effects.

SBU's appraisal of the evidence

The scientific evidence showing that NIDCAP has positive effects on cognitive and motor development in preterm infants is limited (Evidence Grade 3)*. Scientific grounds for assessing the effects of NIDCAP would be substantially enhanced by a sufficiently comprehensive study with extended followup and a clear focus on one or two important outcome variables.

** Criteria for Evidence Grading SBU's Conclusions:*

Evidence Grade 1 – Strong Scientific Evidence. The conclusion is corroborated by at least two independent studies with high quality and internal validity, or a good systematic overview.

Evidence Grade 2 – Moderately Strong Scientific Evidence. The conclusion is corroborated by one study with high quality and internal validity, and at least two studies with medium quality and internal validity.

Evidence Grade 3 – Limited Scientific Evidence. The conclusion is corroborated by at least two studies with medium quality and internal validity.

Insufficient Scientific Evidence. No conclusions can be drawn when there are not any studies that meet the criteria for quality and internal validity.

Contradictory Scientific Evidence. No conclusions can be drawn when there are studies with the same quality and internal validity whose findings contradict each other.

SBU – The Swedish Council on Technology Assessment in Health Care

SBU is an independent public authority which has the mandate of the Swedish Government to comprehensively assess healthcare technology from medical, economic, ethical, and social standpoints. SBU Alert is a system for identification and early assessment of new methods in health care.

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The complete report is available only in Swedish.

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