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Establishing a Hospital-based Neonatal Resuscitation Program in Ghana

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BACKGROUND: The neonatal mortality rate in Ghana is 43 per 1,000 live births; 23% of these deaths are due to birth asphyxia which is potentially modifiable with effective resuscitation. Application of simple resuscitation methods can improve neonatal mortality, but in most labor wards across Ghana, deliveries are attended by midwives who have minimal newborn resuscitation training skills. Empowering local health providers with neonatal resuscitation skills may offer the most sustainable opportunity for improvement in hospital-based neonatal outcomes in Ghana.

OBJECTIVE: To assess midwives' baseline cognitive knowledge of evidence-based neonatal resuscitation practices and the impact of our training program on midwife knowledge and retention of such knowledge 9-12 months after training.

METHODS:

We trained all midwives (n=14) on the labor ward at Ridge Hospital using materials modified from the AAP Neonatal Resuscitation Program. This training program included didactic and practical teaching and was assessed by direct observation within delivery rooms and written pre and post-test evaluations. We also conducted written and practical modules 9-12 months after the initial training session to assess retention of NRP skills.

RESULTS:

There was a substantial improvement in both written and practical evaluation of neonatal resuscitation skills after training (Table 1), which was maintained 9-12 months (Table 2).

Table 1: Results of pre and post-training written and practical evaluations of midwives

Test Type (n=14)	Pretest Score Mean	Post-test Score Mean	Mean % Change	P-Value (paired t-test)
Written (Maximum score 21)	57%	71%	27%	0.0002
Practical (Maximum score 27)	56%	81%	45%	0.0001

Table 2: Results of 9-12 month follow-up of written and practical evaluation of midwives

Test Type (n=12)	Post-test Score [from Table 1] Mean	9-12 Month Post-test Score Mean	P-Value (paired t-test)
Written (Maximum score 21)	71%	75%	0.68 (NS)
Practical (Maximum score 27)	81%	84%	0.18 (NS)

CONCLUSIONS: The results suggest that after receiving NRP training, there was a significant increase in neonatal resuscitation knowledge which was sustained over a 9 month period. We speculate that a self-sustaining neonatal resuscitation program can be successfully created in a resource poor environment.

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