An introduction to Helping Babies Breathe: the “Golden Minute” is here for South African newborn babies

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Introduction

It is estimated by the World Health Organization (WHO) that one million babies die each year due to birth asphyxia. Birth asphyxia is the inability of a newborn baby to breathe immediately after birth. In order to understand the golden minute after birth (the first 60 seconds of a newborn baby’s life), a new programme named Helping Babies Breathe (HBB), was developed by the American Academy of Paediatrics. The “Golden Minute” can set the stakes between life and death for newborn babies.

The challenge

Annually, worldwide, there are almost eight million child deaths under the age of five, of which 3.1 million are neonatal deaths that are caused by intrapartum hypoxic events, infection and prematurity. Intrapartum-related hypoxic events result in an estimated 814 000 neonatal deaths and 1.02 million stillbirths annually. More than 98% of these deaths occur in low- and middle-income countries. In order to meet the Millennium Development Goal (MDG) targets, these deaths should be reduced. The aim is to reduce child mortality rates by two thirds by the year 2015.

If the world map is envisioned with the area proportional to the burden of early neonatal deaths, (death within the first seven days rather than proportional to surface area), Africa balloons, and the South Asian countries becomes huge. North and South America shrink, as does Europe and Japan, and Australia. New Zealand nearly disappears.

The major causes of neonatal deaths are premature birth, infection and prematurity. As previously mentioned, nearly four million newborn babies die each year in the first month of life, and almost a quarter of these die due to asphyxia which is the failure to breath at birth. In South Africa, the causes of neonatal deaths are the same. In addition to these deaths, there are nearly three million babies who are stillborn. If helped using simple measures, some of these babies would be able to start breathing on their own.

Therefore, there are almost one million “stillbirths” due to asphyxia and 830 000 neonatal deaths due to asphyxia. HBB targets the “stillbirths”, who with a little assistance, could start breathing on their own.1

If the physician workforce is analysed by envisioning the world map, the opposite is apparent. The USA, Europa and China bulge, the South Asian countries change a little, and Africa nearly disappears.

Therefore, there are additional challenges to reducing death due to asphyxia, one of which is lack of an adequate workforce. This is an indication that the greatest burden of neonatal deaths are in the areas of the world in which there are inadequate numbers of trained professionals.

In South Africa, the child mortality rates are 69:1 000 live births, while the neonatal mortality rates comprise 30% of this. In order to meet the MDG 4, which states that the child mortality rates should be reduced by two thirds by the year 2015, neonatal deaths need to be reduced. HBB addresses this challenge and can assist in attaining this goal.

What is Helping Babies Breathe?

When a baby is born, he or she has 60 seconds in which to start breathing. Most babies start to breathe on their own, but globally, approximately 10 million newborn babies can’t do it by themselves, and need some assistance at birth. This golden minute is the focus of the HBB initiative.

In understanding the science of resuscitation, 99% of newborn babies need simple interventions that can be lifesaving. All babies need assessment and routine care at birth, and for 80-90% of them, this simple care is sufficient. Eight to ten percent of babies who do not breathe at birth will respond to drying, warmth, clearing of the airways and being provided with stimulation to breathe. Only three to six percent of babies need bag and mask ventilation in order to initiate breathing. Moreover, only one percent of babies need advanced methods of resuscitation, such as chest compressions and medication. Therefore, if focus is placed on the delivery of essential interventions, such as drying, warmth, clearing the airways, providing them with stimulation to breathe, and bag and mask ventilation within one minute of life, many babies can be saved.

HBB is an evidence-based educational programme that was developed by the American Academy of Paediatrics in consultation with the WHO and its collaborative partners. This programme was developed to teach neonatal resuscitation techniques in resource-limited areas. It aims
to teach birth attendants in developing countries about neonatal resuscitation. The goal is to have at least one skilled person in neonatal resuscitation present at each delivery.

Skills that are taught in Helping Babies Breathe

The HBB educational programme is based on evidence-based content, and actively encourages learner participation in the programme. It places considerable emphasis on skill practice with feedback, giving learners an opportunity to learn from one another. Therefore, the HBB programme provides space for self-reflection. There is also structured assessment of knowledge, skills and performance.

The skills that are taught in HBB cover preparation for birth, which includes identifying a helper, preparing the area and hand washing. Thereafter, it extends to routine care, such as drying the infant, keeping the infant warm, evaluation of crying and breathing, and cord clamping. After that, emphasis is placed on the golden minute which forms an integral and very important part of the programme. The skills that are needed during the golden minute are correct positioning of the head, clearing the airway, providing stimulation for the baby to breathe, evaluating the breathing, and initiating ventilation with a bag and a mask. Of all the skills that are taught, ventilation with a bag and mask is the central lifesaving skill in this programme. It must be initiated within the first minute of life, in other words, during the all-important golden minute. Lastly, ensuring continued ventilation with a normal or slow heart rate is taught. This includes learning how to improve ventilation, evaluate the heart rate, activate an emergency plan and support the family.

An action plan is included to aid the facilitation of learning. This is a pictorial guide that contains a resuscitation algorithm. This action plan is also colour-coded to make it easy to use. Green represents routine care, yellow represents the golden minute and the initial steps that should be taken to help the newborn baby breathe, and red represents continued ventilation and the possibility that advanced care is needed.

The programme also includes a learner workbook, facilitator flipchart, neonatal simulator and the equipment that is used to facilitate teaching and learning.

Training takes place by making use of a train the trainer model and each pair of learners has its own flipchart and simulator with equipment.

The “Golden Minute"

The “Golden Minute” is the key concept of the HBB programme. It implies that by one minute of age, the newborn baby should start breathing on his or her own, or should be ventilated with a bag and a mask. The “Golden Minute” also identifies the steps that a birth attendant should take immediately after birth to evaluate and stimulate breathing.

The HBB programme places emphasis on the assessment of each baby, providing temperature support, providing the baby with stimulation to breathe and assisted ventilation, all within a minute of birth.

The curriculum

The mission of HBB is to develop and implement an evidence-based curriculum that is adaptable to clinical scenarios and training that are used wherever babies are born. Therefore, HBB can be adapted and incorporated into other resuscitation training programmes, as well as to a specific health setting.

HBB is a neonatal resuscitation curriculum for resource-limited areas. It was developed on the assumption that assessment at birth and care of newborn babies is essential, and is what every newborn baby deserves. Carrying out the initial steps of the HBB programme can save lives, and gives many newborn babies, who struggle to breathe at birth, a better start in life. Emphasis is placed on meeting the needs of every newborn baby.

The Helping Babies Breathe plan of action for South Africa

The HBB programme will be implemented in July 2012, in conjunction with the University of Johannesburg. Training programmes and master trainer programmes will be available for midwives. Later, implementation of the programme will also be extended nationally, as well as to neighbouring countries.

For more details regarding HBB training in South Africa, contact Mariana Scheepers on 083 468 3258 or Carlien van Heerden on 083 7535028.

Conclusion

HBB is an evidence-based educational programme that can benefit South African neonates and their care providers in many different settings. If implemented and sustained in South Africa and within the South African context, it could change the lives of many parents and their newborn babies. Furthermore, it could help South Africa to attain the MDG 4.

Bibliography


Review: An introduction to Helping Babies Breathe: the “Golden Minute” is here for South African newborn babies