Preventing those so-called stillbirths

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Increased recognition of the disproportionately large contribution of newborn health to global child survival has fuelled efforts to address neonatal mortality in resource-limited settings. Stillbirths have not been as well studied despite the fact that more than 3 million stillbirths occur annually, a disease burden that approaches that of postnatal deaths. The poorest countries have the highest incidences with two regions, sub-Saharan Africa and south Asia, together accounting for nearly 70% of worldwide stillbirths.[1] Limited health services undeniably constitute the major determinant in perinatal mortality, but there is growing concern that high stillbirth rates in many regions are also being driven by less apparent, potentially preventable factors.

Birth asphyxia, defined as the failure to establish breathing at birth, accounts for an estimated 900 000 deaths each year and is one of the primary causes of early neonatal mortality.[2] Guidelines for neonatal resuscitation, such as those endorsed by WHO and the American Academy of Pediatrics, represent a standard practice set that improves outcomes in asphyxiated newborns. These algorithms stress the importance of drying, stimulating and warming babies in distress, as well as clearing their airways. In the face of persistent apnoea or bradycardia, ventilation with the use of bag-and-mask or equivalent device is indicated, and is felt by many to constitute the critical step in managing asphyxiated infants.[3] Newborns have a remarkable ability to withstand hypoxia and many improve rapidly with timely implementation of these techniques. Few infants go on to require chest compressions or pharmaceutical administration.

Despite being a relatively simple and inexpensive intervention, effective neonatal resuscitation is not universal. Translation of resuscitation principles into practice might be straightforward in health-care environments that benefit from highly-skilled and well-outfitted resuscitation teams, but is understandably difficult in settings where practitioners lack training in newborn care and where access to essential resuscitation equipment is limited. In parts of many low-income countries, for example, resuscitation algorithms may be nonexistent or inappropriate. Bulb syringes and bag-and-mask devices may be sub-standard or unavailable; even when present and functioning, staff may be unfamiliar with their use. Moreover, stethoscopes, which can play a crucial role in helping practitioners to recognize a live birth by detecting a heart rate, may also be either inaccessible or unused. Customary practice in some regions dictates use of a stethoscope only by doctors, who may not regularly attend deliveries.

Given that perinatal asphyxia occurs with regular frequency and that health-care workers in many areas of the world are ill-equipped to manage it, there is no mystery as to why large numbers of newborns are dying in the immediate postpartum period. What is unknown, however, is the accuracy and consistency with which these fatalities are being recorded. Obtaining reliable information that describes perinatal mortality in less developed countries can be challenging due to high rates of home births as well as variation in terminology and data collection systems.

Strictly speaking, stillbirths are fetal deaths. Nevertheless, live-born infants who are inadequately resuscitated and die may be misclassified as stillbirths for several reasons.[4] Unskilled health workers may simply not be able to distinguish between the two conditions. The health-care team or family may prefer a stillbirth diagnosis to circumvent matters of culpability or to avoid acknowledging the tragic reality of limited medical proficiency in that region. Logistical or financial incentives relating to, for instance, vital registration or burial practices may also play a role. Finally, traditional belief systems may influence categorization since stillbirths and child deaths can carry differential spiritual significance in the eyes of local community members. Since documentation at peripheral health centres directly informs district, provincial, and central level reporting, systematic errors introduced locally adversely impact the legitimacy of national and regional statistics.

Our experience working alongside neonatal care providers in sub-Saharan Africa and India illustrates how resuscitation practices influence stillbirth statistics. In rural Sudan, we have seen a cyanotic, apnoeic newborn with a pulse be set aside following birth and left to herself to initiate the process of spontaneous breathing. After nearly two minutes of non-intervention by the delivery attendants, we were compelled to step outside of our role as observers and act quickly to provide stimulation and positive pressure ventilation. The infant responded to manual breaths and the outcome was good. Subsequent discussions with the local staff indicated that the infant would have been considered stillborn had she died.

On another occasion, midwives at a large public hospital in Liberia were observed to routinely favour medication administration alone in the management of apnoeic newborns. This approach was confirmed as common institutional practice by written

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assessment in which 78% of delivery practitioners failed to correctly identify positive pressure ventilation as a key element in resuscitation of asphyxiated babies (Spector, unpublished data, 2007). More than 2000 deliveries are conducted at this hospital annually, yet there was virtually no documentation of neonatal deaths. In contrast, the recorded stillbirth rate was extremely high (70 out of 1000 live births).

Can improvement in neonatal resuscitation skills result in decreased stillbirths? Evidence suggests that it can. In Dahanu, India, the stillbirth rate dropped from 18.6% to 9% over a three-year period with introduction of a traditional birth attendant training programme in which neonatal resuscitation was a central component.[5] This finding is consistent with a recent study in Fatehpur, India, through which nurses and ward aides with minimal education were trained in a basic neonatal resuscitation programme. Recorded stillbirth rates decreased in the hospitals where the course was taught. Participating physicians' comments were revealing: following the intervention, nurses demonstrated skilful use of bag-and-mask during resuscitation whereas "before, the babies had died".[6]

Misclassification of stillbirths has significant implications for national health policies and global strategies for reducing perinatal mortality, particularly with regard to resource allocation. Recognizing so-called stillbirths as newborn deaths resulting from birth asphyxia strengthens the appeal for investment in research that identifies effective and feasible mechanisms for delivery of essential newborn care. Priority interventions in parts of the world most affected should include high coverage of skilled birth attendants and integration of competency-based neonatal resuscitation training into existing programmes for maternal and child health. If just 1 in 100 stillbirths is actually a poorly-resuscitated viable newborn, greater than 30 000 lives could potentially be saved each year by improving neonatal resuscitation practices in austere settings. ■

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