

TERM NEWBORN RESUSCITATION- NO HEART RATE DETECTED AT 10 MINUTES OF AGE

Abstract	<p>Some babies have a reduced supply of blood and oxygen to their brain around the time of their birth. If the lack of blood and oxygen is severe, it can cause serious injury to the brain that may be fatal, or may leave survivors with long-term disabilities. Studies of babies born 10-20 years ago showed that babies born without a heartbeat who are resuscitated were at high risk of death or severe disability.</p> <p>Based on those studies, the International Liaison Committee on Resuscitation (ILCOR) recommended in 2015 that if a newborn baby's heartbeat remains undetected after 10 minutes, it may be reasonable to stop resuscitation efforts.</p> <p>The outcome for survivors has improved following the introduction of cooling treatment for babies who suffer brain injury around the time of delivery. It may be, therefore, that this guidance is no longer appropriate. It is important to describe these babies, their response to treatment and their longer-term outcomes to ensure that decisions regarding resuscitation and ongoing intensive care are in the best interests of babies and their families.</p>
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Website	<p>www.rcpch.ac.uk/bpsu/resuscitation</p>
Coverage	<p>United Kingdom and Republic of Ireland</p>
Duration	<p>November 2020 to November 2022 (25-months of surveillance) with a 2-year follow-up until November 2024</p>
Research Questions	<ol style="list-style-type: none">1. To identify the incidence of term babies who receive resuscitation following birth and have no heart rate detected at 10 minutes of age, describing the demographic characteristics, clinical features and initial management of this population.2. To describe the mortality rate, timing and cause of death for term babies who receive resuscitation following birth and have no heart rate detected at 10 minutes of age. Describe the clinical course3. To describe the neurodevelopmental outcome at one and two years of age for term babies who receive resuscitation following birth, have no heart rate detected at 10 minutes of age and survive.
Case definition	<p>Any baby who has been cared for in the last month for whom ALL THREE of the following conditions were met;</p> <ol style="list-style-type: none">1. Gestational age 37 or more completed weeks of gestation2. Cardiopulmonary resuscitation following delivery3. No heart rate detected at 10 minutes of age

Reporting instructions	Please report any cases of babies meeting the surveillance case definition whom you have seen in the last month in the UK or the Republic of Ireland.
Methods	<p>Each paediatrician reporting a child who meets the above case definition of outcome of resuscitated term babies with no heart rate detected at 10 minutes of age will be sent a clinical questionnaire by the study team.</p> <p>Throughout the study, all patient data will be dealt with in strict confidence, and the families of affected babies will not be contacted directly by the outcome of resuscitated term babies with no heart rate detected at 10 minutes of age study team at any stage.</p>
Ethics approval	South East Scotland Research Ethics Committee 01 (reference: 17/SS/0009); HRA Confidentiality Advisory Group (reference: 19/CAG/0002); and Public Benefit and Privacy Panel for Health and Social Care (reference: 1819-0054).
Support group	<p>Sands, the stillbirth and neonatal death charity (https://www.sands.org.uk/).</p> <p>Bliss (https://www.bliss.org.uk/)</p>
References	<ol style="list-style-type: none"> 1. Harrington D.J., Redman C.W., Moulden M. et al. The long-term outcome in surviving infants with Apgar zero at 10 minutes: a systematic review of the literature and hospital based cohort. <i>Am J Obstet Gynaecol</i> 2007; 196:463.e1-5. 2. International Liaison Committee on Resuscitation: European Resuscitation Council 2015: Section 7. Resuscitation and support of transition of babies at birth. 3. Shah P., Anvekar A., McMichael J. et al. Outcomes of infants with Apgar score of zero at 10 minutes: the West Australian experience. <i>Arch Dis Child Fetal Neonatal Ed</i> 2015; 100: F492494. 4. Kasdorf E., Lupton A., Azzopardi D. et al. Improving infant outcome with a 10 minute Apgar of 0. <i>Arch Dis Child Fetal Neonatal Ed</i> 2015; 100: F102. 5. Natarajan G., Shankaran S., Lupton A.R. et al. Apgar scores at 10 minutes and outcomes at 6-7 years following hypoxic-ischaemic encephalopathy. <i>Arch Dis Child Fetal Neonatal Ed</i>. 2013; 98:F473-9. 6. Sproat T., Hearn R., Harigopal S. Outcome of babies with no detectable heart rate before 10 minutes of age, and the effect of gestation. <i>Arch Dis Fetal Neonatal Ed</i> 2016; 0:F1-4. 7. Wilkinson D., Stenson B. Don't stop now? How long should resuscitation continue at birth in the absence of a detectable heartbeat? <i>Arch Dis Child Fetal Neonatal Ed</i> 2015