

CLINICAL UPDATE

Essentials of safe Newborn Resuscitation/ Supported Transition

To: All clinical staff

Date: June 2022

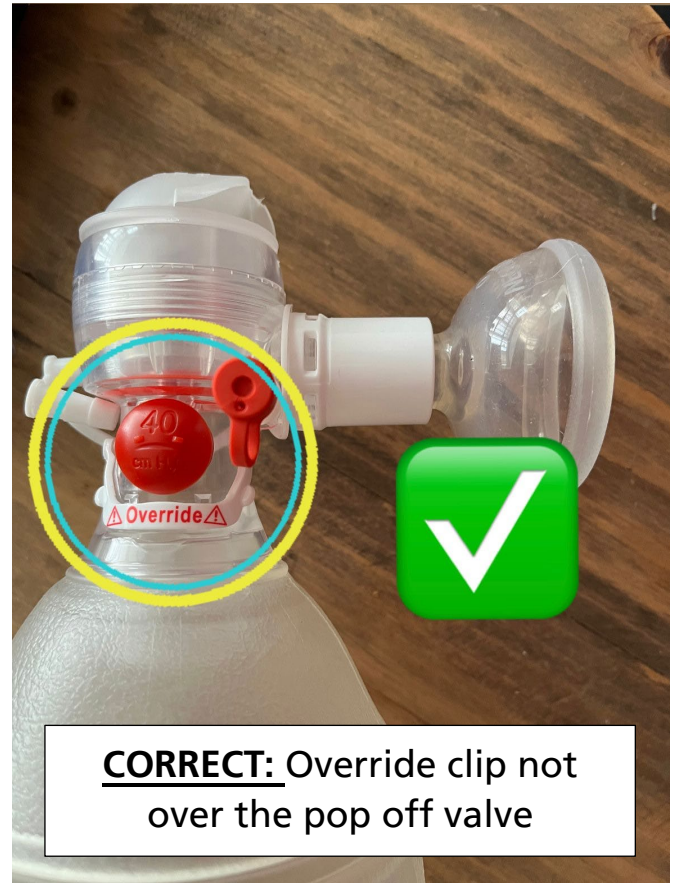
Some inconsistencies have been identified regarding the delivery of NLS training and assessment, particularly in relation to the administration of the 5 initial inflation breaths and in the use of air and oxygen within resuscitation.

When commencing active newborn resuscitation **5 inflation breaths must be delivered gently over 3 seconds per inflation using room air,** ensuring that you have a good mask seal.

The maximum pressure to be used is 30cmH₂O, the pop off valve is **NOT** to be locked off (disengaged) to undertake these ventilations. The pop-off valve on a paediatric BVM is set at 40cmH₂O and therefore above the recommended pressures.

CLINICAL UPDATE

Essentials of safe Newborn Resuscitation/ Supported Transition, continued



The shearing forces created with excessive pressure in newborn inflation and ventilation are associated with permanent lung scarring and increased rates of pneumothorax.

The tidal volume of a term infant is 6-10ml/kg and 4-6ml/kg in the pre-term. The majority of term babies have a tidal volume of around 30ml and a lung capacity of 100ml therefore we need to be mindful when delivering breaths using a BVM that has a 500ml capacity.

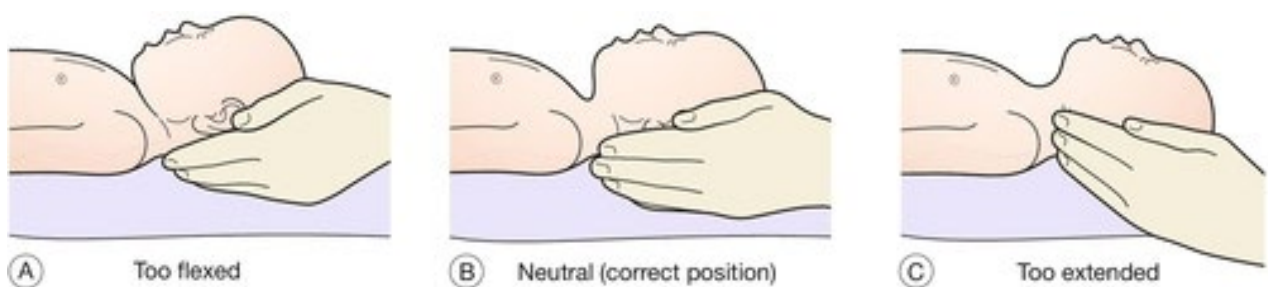
Inflation breaths are to be delivered in rounds of 5's with each inflation delivered over 3 seconds

It is common to not see chest rise and fall in the initial few inflation breaths and during effective resuscitation, this is the period when the fluid within the lungs will be displaced into the interstitial tissues and into the circulating volume, therefore chest rise and fall may not be observed until 3, 4 or 5 inflation breath.

If chest wall rise is seen on these breaths be that 3, 4 or 5, then successful inflation has been achieved and the clinician can move onto reassessment and the next intervention as indicated by the neonatal condition following assessment of Colour, Tone, Heart Rate and Breathing.

This means that clinicians DO NOT need to carry on in delivering 5 consecutive breaths following achieving chest rise and fall.

If chest rise and fall is not observed after the initial 5 breaths, please consider maximising your efforts by adding a jaw thrust, using a double hand mask technique, change patient positioning to ensure neutral alignment then repeat the 5 inflations until rise and fall is achieved.





When moving on to **ventilation breaths they are performed over 30 seconds or sets of 15**, still utilising room air, at a rate of 1 ventilation every 2 seconds and reassess your patient for Colour, Tone, Heart Rate and Breathing every 30 seconds.

Chest rise needs to be observed with each breath and the bag only needs to be squeezed gently to achieve effective chest rise.

If chest compressions are required, the RCUK recommend **commencing the use of oxygen via the BVM at 15L** at this time. Compressions are delivered at a ratio of 3:1, therefore 3 to compressions to 1 breath. Perform 30 seconds/15 cycles of CPR/ventilation then reassess. It does not matter if you start with the breath or the compressions.

If undertaking Newborn Resuscitation, please ensure that thermoregulation is maximised at all times and ensure the use of a TransWarmer Heating Mattress.

A Maternity Masterclass is hosted on Evolve for all staff to access. The final component contains Newborn Life Support which discusses the NLS

protocol and the physiology behind its reasonings to aid clinicians in their understanding of why it is structured in such a way.

If you have any questions or require any further support, please contact:

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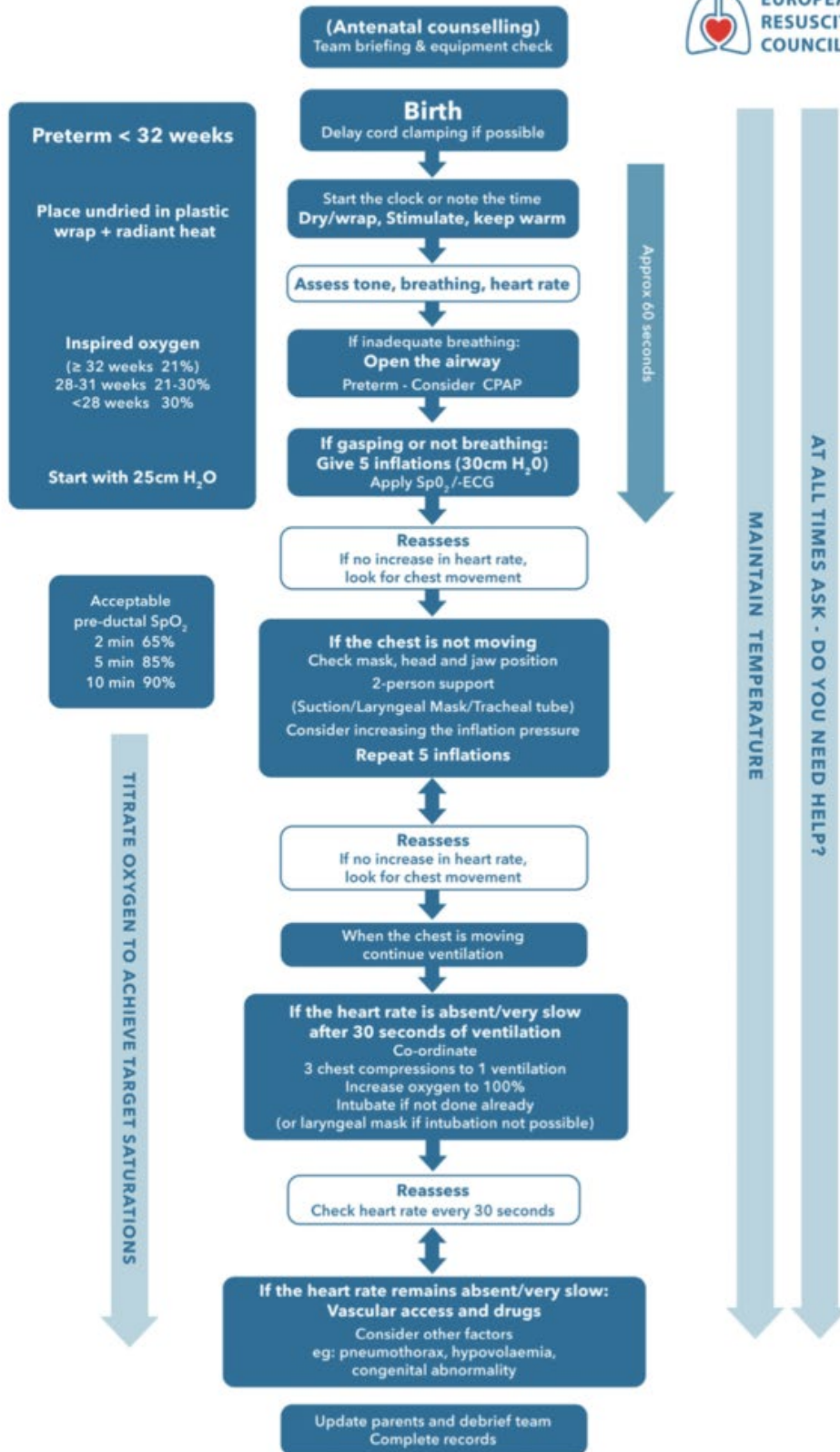


Fig. 14 – NLS algorithm.