# Basic life support or choking UHL Children's Hospital guideline

**Trust Ref : B23/2022**

## Contents



## 1. Introduction and Who Guideline applies to

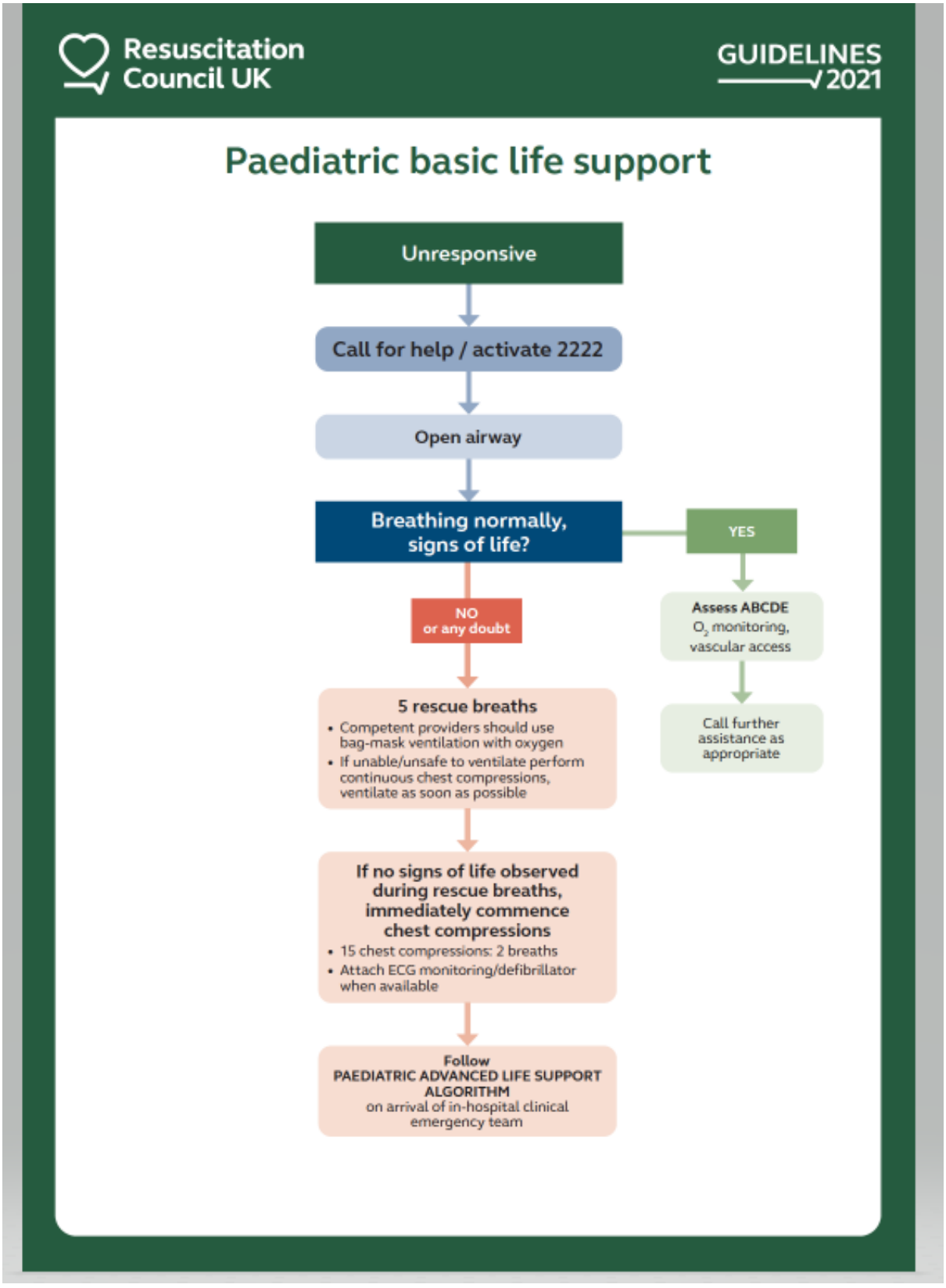
To provide guidance for medical staff and nursing staff to enable response to an emergency situation in a hospital setting. This guideline is not a substitute for annual attendance at mandatory resuscitation training which involves an assessment of practice.

For the purposes of basic life support, an infant is a child who appears to be under 1 year. A Child is someone who appears to be aged between 1 year and 18 years.

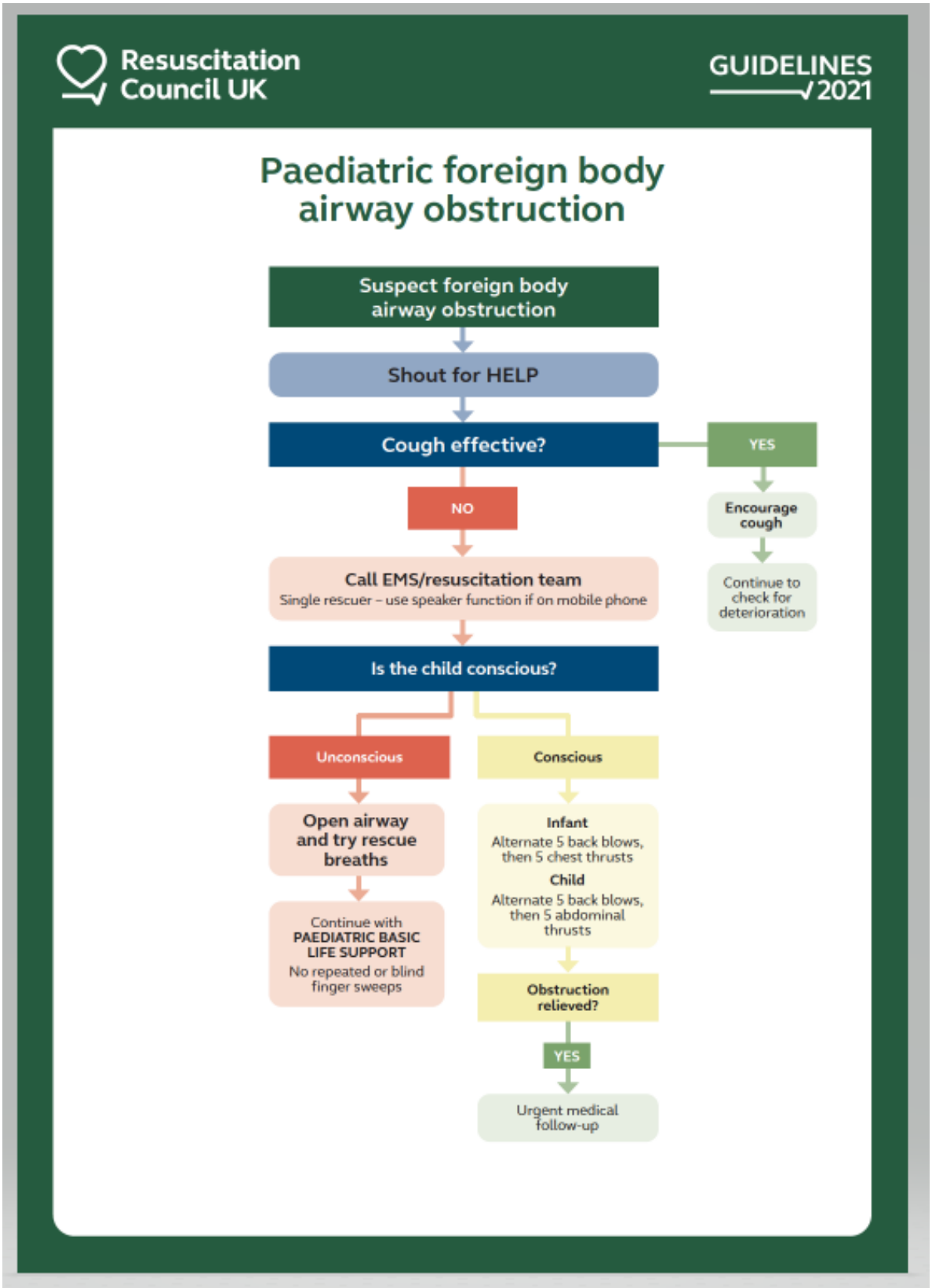
This guideline needs to be used in conjunction with relevant infection control and consent policies to ensure the child receives rapid and safe care and that families are able to understand the reasons for care to facilitate co-operation. Parents may be asked if they wish to be present during their child's resuscitation; this decision should be made with the resuscitation team.

If the parents decide to be present, a healthcare provider must remain with them at all times to provide information and support.
If not then regular updates should be given on their child's condition.

## Paediatric basic life support algorithm



**Paediatric foreign body airway obstruction algorithm**



## 2. Procedure / Process for Paediatric BLS/Choking

**Resources:**

- Cardiac Arrest Trolley system in appropriate hospital areas and access to Paediatric Cardiac Arrest Team
- Supply of replacement stock
- Portable emergency equipment- oxygen, suction, defibrillator, oxygen saturation monitor
- Cardiac Arrest Reporting Form

| 2. Procedure / Process for Paediatric BLS | |
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| **No** | **Action** |
| 2.1 | Nursing staff will ensure that appropriate equipment is readily available for the resuscitation of children aged 0 – 18 years in their area. Cardiac Arrest Trolley must be sealed and the seal must be checked daily. The cardiac arrest trolley must be opened and all stock checked a minimum of once per week or as directed by the CMG lead – this check should be done IN HOURS on a weekday. |
| 2.2 | Adopt a 'SAFE' approach:<br><br>**S** – Shout for help i.e. Call arrest team (DIAL 2222 –Ask for Paediatric arrest team and give full location/site)<br>**A** – Approach with care<br>**F** – Free from danger<br>**E** – Evaluate i.e. ABC<br><br>If the child is deteriorating rapidly or an ARREST is suspected then, –<br>**SHOUT FOR HELP, ACTIVATE EMERGENCY BUZZER, DIAL 2222.** |
| 2.3 | Determine unresponsiveness by using verbal and tactile stimulation. Stabilise the child's head by placing one hand on their forehead and then call the child's name, at the same time gently stimulate the child and ask loudly, 'are you alright?' |
| 2.4 | Open and maintain airway with **Head Tilt/Chin Lift** place one hand on the child's forehead and gently tilt the head back.<br><br>In an Infant (under 1 year of age) place the head in a neutral position; in the older child more extension is required (sniffing position). Place the fingertips of the other hand on the bony part of the child's lower jaw and lift the chin upwards.<br><br>In cases of suspected cervical spine injury the **Jaw Thrust** technique for opening the airway is the manoeuvre of choice. Two or three fingertips from each hand should be placed under both angles of the child's lower jaw and the jaw lifted upwards, while thumbs push gently on the child's cheekbones. |

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| 2.5 | If there is an obvious foreign body at the front of the mouth then remove it. Only put a finger into the child's mouth if the object is clearly visible and can be removed easily with a gentle finger sweep. **Blind finger sweep must never be performed.**<br><br>Give suction if required. Yankeur suckers are available in adult and paediatric sizes and are useful for removing vomit and copious or thick secretions. |
| 2.6 | To assess breathing, keep the child's airway open and look for signs of spontaneous breathing for a maximum of 10 seconds.<br><br>To do this, position your face close to the child's face and look along the chest. In this position look for the rise and fall of the chest listen for breath sounds and feel expired breath on cheek. Simultaneously look for signs of life (including any movement, coughing or normal breathing) Studies have shown how unreliable feeling for a pulse is in determining presence or absence of a circulation even for trained paediatric healthcare workers, hence the importance of the need to look for signs of life. However, if a healthcare worker wishes to also check for a pulse this should be done simultaneously with the breathing assessment.<br><br>**If the child is breathing spontaneously and effectively**, continue to maintain the child's airway and summon assistance as considered appropriate and continue to check for normal breathing. If there is no suspicion of head or cervical spine injury, consider placing the child in the recovery position.<br><br>**If the child has no detectable spontaneous effecting breathing**, rescue breaths must be delivered. |
| 2.7 | Attempt 5 initial rescue breaths. Each breath should be delivered slowly over 1 second.<br><br>In the in-hospital environment rescue breathing should ideally be delivered by using a resuscitation bag-valve mask device.<br><br>**Resuscitation Bag-Valve Mask (BVM) device**<br>Select an appropriate size mask to fit over the child's nose and mouth. Masks used with BVM must provide a good seal. Deliver each breath by gently squeezing the bag over 1 second. Ensure that high flow oxygen is attached to the bag.<br><br>The effectiveness of the breath is determined by observing a rise and fall of the chest. It is essential that chest movement is seen for every breath. If it is not reposition the airway and repeat the breath.<br><br>If despite repositioning the airway, the rescue breaths still do not move the child's chest foreign body airway obstruction should be considered and the appropriate procedure implemented.<br><br>**Children with Tracheostomies**<br>Perform basic head-tilt, chin-lift to allow access to the tracheostomy tube. Observe for obvious signs of obstruction.<br>Suction the tube to assess patency/clear it.<br>If tube obstructed then change liner/tube.<br>Look, Listen and feel for breath over the tracheostomy tube. Ventilate with a resuscitation bag-valve device. (The use of a catheter mount may facilitate easier use) |

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| 2.8 | **Following the rescue breaths**, if you are confident that you can detect signs of life: Reassess the breathing. If there is still no effective spontaneous breathing, then rescue breathing should be continued until the child starts breathing effectively on their own.<br><br>The child's breathing and signs of life should be reassessed every minute and resuscitation continued until the paediatric cardiac arrest team arrives to take over or the child starts to breathe spontaneously. |
| 2.9 | **If signs of life are absent or if you are unsure:**<br><br>Begin high quality chest compressions<br><br>To be delivered effectively, the child must be placed on a firm, flat surface and their head kept in a position that maintains the airway.<br><br>Chest compressions should depress the chest by approx. one-third of its anterior/posterior diameter at a rate of approx.100-120 times/min in a smooth rhythmical action using a ratio of 15 compressions to 2 breaths. Allow the chest to completely recoil between compressions by releasing all pressure on the chest.<br><br>**INFANT**<br>The preferable technique for chest compressions on an infant is two thumb encircling technique. However, single rescuers may alternatively use two finger technique.<br><br>**Encircling technique:**<br>Place two thumbs on the lower half of the sternum side by side with the tips towards the infant's head. With the fingers together, spread the rest of both hands to encircle the infant's chest with the tips of the fingers supporting the infant's back. Press down on the sternum with your two thumbs to at least 1/3 of the depth of the infants chest (approx 4cm)<br><br>**Two finger technique:**<br>Compress the lower half of the sternum with the tips of two fingers to at least 1/3 of the depth of the infants chest (approx 4cm)<br><br>**CHILD**<br>Place the heel of one hand over the lower half of the sternum, lifting the fingers so that pressure is not applied over the child's ribs. Position yourself vertically over the child's chest and keeping the arm straight compress the chest to approx. one-third of the chest depth.(approx 5cm)<br><br>In larger children or for small rescuers this may be achieved more easily by using both hands with interlocked fingers<br><br>**After 15 chest compressions reposition the airway and give 2 rescue breaths** |
| 2.10 | After delivering the initial five rescue breaths, briefly stop to ensure that the emergency team has been activated or if you are a lone rescuer summon help after 1 minute of resuscitation.<br>As soon as equipment arrives the child should be monitored and resuscitation continued as required.<br>The only exception to performing 1 min of CPR before going for help is in the event of a child with a witnessed, sudden collapse when the rescuer is alone and primary cardiac arrest is suspected (e.g. a child with known congenital heart disease). In this situation, a shockable rhythm is likely and the child may require defibrillation. Seek help immediately yourself if there is no one to go for you. |

| 3. FOREIGN BODY AIRWAY OBSTRUCTION (FBAO) | |
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| 3.1 | If the child is coughing effectively then encourage this and monitor closely. Coughing is a very effective mechanism to relieve FBAO.<br>However if coughing is ineffective or the child is aphonic or beginning to lose consciousness then urgent intervention to relieve the FBAO is essential.<br>A combination of back blows, chest thrust (infant) and back blows with abdominal thrusts (child) should be commenced. |
| 3.2 | **Conscious/Responsive - <u>Infant</u>**<br>**Step 1 Back blows:**<br>– Support the infants head by holding the jaw with the thumb and fingers of one hand; ensure the soft tissues of the neck are not compressed under the child's jaw as this can exacerbate airway obstruction.<br>– Turn the infant into a head downwards prone position.<br>– Deliver up to 5 sharp blows with the heel of the hand in the middle of the infant back between the shoulder blades.<br>If this fails to dislodge the foreign body and the infant is still responsive then proceed to chest thrusts.<br><br>**Step 2 Chest thrusts:**<br><br>– Turn the child over into a head downward supine position. Support the infant's head by placing the arm along the infant's back with the hand encircling the occiput.<br>– Identify the landmark for chest compression and deliver up to five chest thrusts to the sternum with the free hand. The technique for chest thrusts is the same as that for chest compressions, but should be sharper, and slower in rate.<br>– The aim is to dislodge the obstruction with each thrust rather than give all 5 hence you should assess after each thrust and may not require all 5.<br>– Reassess after each cycle and repeat as long as the infant maintains consciousness and respiratory effort. |
| 3.3 | **Conscious/Responsive - <u>Child</u>**<br>**Step 1 Back Blows:**<br>– Standing or kneeling behind the upright child, support them in a forward leaning position (or if they are small enough, place them across your lap with their head downwards)<br>– Using the heel of your hand deliver up to 5 sharp blows between the shoulder blades. If the object is not dislodged and the child is still responsive then deliver abdominal thrusts.<br><br>**Step 2 Abdominal Thrusts:**<br>– Standing or kneeling behind the upright child, encircle the child's torso with your arms<br>– Place the flat thumb side of one fist into the child's abdomen, midway between the umbilicus and the xiphoid process.<br>– Grasp the fist placed on the child's abdomen with the other hand and perform a series of up to 5 inward and upward thrusts.<br>– The aim is to dislodge the obstruction with each thrust rather than give all 5 hence you should assess after each thrust and may not require all 5<br>– Reassess after each cycle and repeat as long as the child maintains consciousness and respiratory effort. |
| 3.4 | If the infant or child becomes unconscious, commence basic life support as detailed above in section 2. |

| 4. RECOVERY POSITION | |
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| 4.1 | – Kneel beside the child and straighten his arms and legs.<br>– Glasses or other sharp or bulky objects (e.g. large items in pockets) should be removed and the clothing around the neck loosened.<br>– The patency of the airway should be assessed and opened if required.<br>– The child's nearest arm should be placed at a right angle to the body, elbow bent with the palm of the hand uppermost<br>– The child's other arm should be brought across his body towards you and the back of the hand held against the cheek closest to you.<br>– With your other hand, grasp the leg furthest from you above the knee bend the child's leg that is furthest from you at the knee keeping the foot flat on the ground.<br>– Roll the child gently towards you by pulling against the child's bent knee, keeping the hand pressed against the cheek.<br>– Adjust the upper leg so that the hip and knee are bent at right angles.<br>– Tilt the head back to ensure the airway is open.<br>– The child's hand that was placed against his cheek should now be checked to ensure that it is not causing undue pressure on his face but is keeping the head tilted and facing downwards to allow any fluids to drain from the mouth.<br><br>The child's breathing and circulation should be reassessed frequently while awaiting further assistance (at least every minute). Should there be any deterioration in clinical condition, the child must be immediately and carefully rolled back into a supine position and a thorough ABC assessment performed.<br>It should be noted that in infants a rolled up towel or blanket placed along their back may be required to ensure that they do not roll back onto their backs. |

## 5 . Education and Training

Basic life support is part of mandatory training for all staff.

## 6 . Monitoring Compliance

| What will be measured to monitor compliance | How will compliance be monitored | Monitoring Lead | Frequency | Reporting arrangements |
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| Uptake of training compliance | HELM | Paediatric Resuscitation Lead | Monthly at the Resuscitation Committee | A report will be reviewed at each meeting of training compliance across the Services and staff group |

## 7. Supporting References

Resuscitation Council (UK) 2021 European Resuscitation Council 2015 Paediatric BLS and FBAO Algorithms Resuscitation Council UK

Resuscitation Council Website Link: http://www.resus.org.uk 2021

## 8. Key Words

Basic life support, Cardiac arrest, Choking, Foreign body, Obstruction Resuscitation

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**The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.**
**As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.**

| Contact and review details | |
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| **Guideline Lead (Name and Title)**<br>K Hammond – Senior Clinical Skills Facilitator | **Executive Lead**<br>Chief Nurse |

**Details of Changes made during review:**
Introduction and Who Guideline applies to – Definition of child changed to 1 to 18 years.

**Guideline Standards and Procedures.** New algorithms added**.**

**Action 2.1** amended to: equipment readily available for the resuscitation of children aged 0 – 18 years.
**Action 2.3** amended to: at the same time gently stimulate the child and ask loudly, 'are you alright?'
**Action 2.6**- amended checking for signs of life. **Action 2.8** removed
**Action 2.9** now 2.8 amended to: Following the rescue breaths, if you are confident that you can detect signs of life: reassess breathing. If there is still no effective spontaneous breathing, the rescue breathing should be continued until the child starts breathing effectively on their own. The child's breathing and signs of life should be reassessed every minute and resuscitation continued until the paediatric cardiac arrest team arrives to take over or the child starts to breath spontaneously.
**Action 2.10 now 2.9 amended to If signs of life are absent or if you are unsure:**
Begin high quality chest compressions and now includes explanation of how to deliver with specification of procedures to be used dependent on age/size of child. Also added, **After 15 chest compressions reposition the airway and give 2 rescue breaths**
Action 2.11- now 2.10 amended to After delivering the initial five rescue breaths, briefly stop to ensure that the emergency team has been activated or if you are a lone rescuer summon help after 1 minute of resuscitation
**Action 3.2** – amended to Step 2 Chest thrusts: now includes explanation of how to deliver and reassessment
**Action 3.3** amended to: Step 2 Abdominal Thrusts: : now includes explanation of how to deliver and reassessment
**4.** RECOVERY POSITION – reworded and made clearer
**5. Education and Training** amended to remove the word annual.