Acacium Group

Paediatric Basic Life Support

Procedure Reference | SOP RESUS 02

Version | V5.1

Procedure Name	Paediatric Basic Life Support
Purpose of Document	To ensure that the correct preparation, procedure, and outcome are achieved by undertaking an effective resuscitation procedure for children.
Target Audience	All workers with clinical responsibilities.
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Equality Impact Assessment (EIA) Form	Acacium Group is committed to Equality, Diversity and Inclusion and in line with our values, we strive to ensure that everyone that is part of the Acacium community is not disadvantaged or discriminated against given their individual need or characteristics. To support this, an Equality Impact Assessment has been undertaken on this policy/procedure. This information is held centrally and can be requested from the Clinical Governance Team.
About Acacium Group	Details of all Acacium Group trading companies that this policy applies to are detailed within Appendix A
This SOP must be read in conjunction with the Acacium Group Resuscitation Policy	

Document History			
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1. Resuscitation Standard

Every worker, that has direct patient/client contact, is trained and able to instigate basic life support procedures for any person who collapses because of a cardiac/respiratory arrest.

2. Resuscitation – General Points

Background: The following information is based on the Resuscitation Council Guidelines 2021 and the International Liaison Committee on Resuscitation 2020 Consensus on Science and Treatment Recommendations and the European Resuscitation Council Guidelines for Resuscitation (2021).

Basic life support refers to maintaining airway patency and supporting breathing and the circulation without the use of equipment other than a protective device.

It is important that those workers attending a cardiac arrest should have learnt the appropriate resuscitation skills and be able to put them into practice. Regular training in paediatric BLS is essential as cardiorespiratory arrest occurs less frequently in children than in adults; thus, both healthcare professionals and members of the public are less likely to be involved in paediatric resuscitation.

This guideline applies to all infants and children excluding newborn infants (unless no other option is available at birth)

- A new-born is an infant just after birth
- An infant is under the age of 1 year
- A child is between 1 year and 18 years of age

Recognition of cardiorespiratory arrest: The Resuscitation Council (UK) Guidelines 2021 states that pulse palpation for 10 seconds cannot give a reliable measurement of the presence or absence of an effective circulation. This means that palpation of the pulse cannot be the sole determinant of the need for chest compressions. Therefore, workers need to determine the presence or absence of 'signs of life', such as response to stimuli, normal breathing, rather than abnormal gasps, or spontaneous movement. They may also perform pulse palpation but, if there are no other 'signs of life', they should only withhold CPR if they are certain that there is a definite pulse. The decision to start CPR should take less than 10 seconds from the time of beginning the initial assessment of the child's circulatory status and if there is still doubt after that time, CPR should be initiated.

Compression to ventilation ratios (CV ratio):
The CV ratio should be based on whether one or more workers are present and the designation of the individual attending to the arrest.

Uninterrupted, high quality chest compressions are vital, with attention being paid to all components of each chest compression including the rate, depth and allowing adequate time for chest recoil to occur (avoiding lean on the chest).

15:2 ratio is primarily intended for healthcare professionals with a duty to respond to paediatric emergencies. Single worker trained in paediatric resuscitation techniques use 15:2 this is because paediatric arrests are primarily hypoxic in origin and therefore limiting the exposure to ventilations is detrimental to the outcome.

A lay person uses a ratio of 30 compressions to 2 ventilations. This is the same ratio as recommended for adults and enables anyone trained in BLS techniques to resuscitate children with minimal additional information. When delivering chest compressions, the lower sternum should be compressed by at least 1/3 depth of the chest (or by 4cm for infants, and 5cm for a child).

In order to be consistent with the adult BLS guidelines the advice on compression rate has been amended to 'at least 100 but not greater than 120 per minute'. Ideally chest compressions should be delivered on a firm surface otherwise the depth of compression may be difficult to achieve.

When to call for assistance: It is vital for rescuers to get help as quickly as possible when a child collapses

In cases where there is more than one rescuer, a second rescuer should call 999 (outside hospital) to summon emergency medical services (EMS) or call 2222 if in an NHS hospital to summon the clinical emergency team immediately and state it is for a paediatric client/patient. If calling 999 preferably use the speaker function of a mobile phone.

For those working in Northern Ireland, please familiarise yourself with the local emergency numbers as they may differ from trust to trust.

- If only one rescuer is present, undertake resuscitation for about **1 min** before going for assistance. To minimise interruptions in CPR, it may be possible to carry an infant or small child whilst summoning help.
- There is emphasis on rescuers using mobile phones with speaker function to facilitate bystander access to dispatcher guided cardiopulmonary resuscitation (CPR) and to summon emergency medical services (EMS) without leaving the child or infant.

1. **Paediatric Basic Life Support:** Table 1 sets out the sequence that should be followed by those workers with a duty to respond to paediatric emergencies

Table 1: Sequence for basic life support for children in the event of cardiac arrest

	Step	Action
1	Ensure the safety of the worker and child.	Make sure the location is safe, i.e. from traffic, fire, water or electrical hazards. Treat all bodily fluids as potentially infectious. (EPLS Guidelines)
2	Check the child's responsiveness.	• Place your hand on the child's forehead (this opens the airway and gives some cervical stability) • Gently stimulate the child and ask loudly, 'Are you all right?' • Do not shake infants, or children.
3A	If the child responds by answering or moving.	• Leave the child in the position in which you find the child (provided they are not in further danger). • Check the child's condition and get help if needed. • Reassess the child regularly.
3B	If the child does not respond.	• Shout for help. • In the unconscious child the tongue is likely to partially if not fully occlude the airway. Turn the child onto their back and open the airway using the following: • Infants: o Keep head in the neutral position, place one hand on the infant's forehead, place one finger on the bony part of the infant's lower jaw. Please note if you extend too far you will obstruct their airway, if the head is forward then you will obstruct their airway.

		 • Child: ○ Place one hand on the forehead and two fingers on the bony part of the child's lower jaw and tilt the head back until the child is in a 'sniffing' position. Please note if you extend too far you will obstruct their airway. ○ Place your hand on the forehead and gently tilt the head back. ○ With your fingertip(s) under the point of the child's chin, lift the chin. Do not push on the soft tissues under the chin as this may block the airway by forcing the tongue upwards and backwards.  If you still have difficulty in opening the airway, try the jaw thrust method: • Place your hands on either side of the child's head. • Two or three fingertips from each of your hands should be placed under both angles of the child's lower jaw, and the jaw lifted upwards, with your thumbs resting gently on the child's cheek bones, your elbows should rest on the surface on which the child is lying to give cervical support.  If you suspect a neck injury try to open the airway using jaw thrust alone. If this is unsuccessful, add head tilt a small amount at a time until the airway is open. Establishing an open airway takes priority over concerns about the cervical spine.
4	Keeping the airway open, look, listen, and feel for normal breathing by putting your face close to the child's face and looking along the chest.	• **Look** for the rise and fall of the chest and abdomen. • **Listen** at the child's nose and mouth for breath sounds. • **Feel** for air movement on your cheek. In the first few minutes after cardiac arrest a child may be taking infrequent, noisy gasps. Do not confuse this with normal breathing. Look, listen, and feel for **no more** than **10 seconds before** deciding. If you have any doubts whether breathing is normal, act as if it is **not** normal

5A	If the child is breathing normally.	• Turn the child onto their side into the recovery position, or maintain an open airway with head tiltSee Acacium Group Recovery position SOP • Send or go for help – dial 999 • Only leave the child if there is no other way of obtaining help • Check for continued normal breathing
5B	If the breathing is abnormal or is absent.	• Look into the mouth to see if any obvious foreign body is present. You should only put one finger into the child's mouth if there is a visible foreign body that you are confident can be removed with one gentle finger sweep • If there is vomit in the airway, place child on their side with head down if possible and allow drainage of the vomit • Give 5 initial rescue breaths- it is common in healthcare environments to have access to bag-mask devices (BMV) and providers trained in their use should use them as soon as they are available. When BMV is not available, a pocket mask can be used for rescue breaths • While performing the rescue breaths note any gag or cough response to your action. These responses, or their absence, will form part of your assessment of 'signs of life', described below in Step 6 **Rescue breaths for a child over 1 year:** • Ensure head tilt and chin lift extending head in to sniffing position • Pinch the soft part of the child's nose closed with the index finger and thumb of your hand on the forehead • Open the child's mouth a little but maintain the chin lift • Administer rescue breaths via mouth to mouth using Pocket mask/Face shield if available or by placing your lips around their mouth, making sure that you have a good seal • You may use a BVM, if you have been **appropriately trained to do so and the correct size is available.** • Administer rescue breaths steadily into the child's mouth over 1 second sufficient to make the chest rise visibly • Maintaining head tilt and chin lift, and watch for the chest to fall as air comes out • Repeat this sequence four more times. Identify effectiveness by seeing that the child's chest has risen and fallen in a similar fashion to the movement produced by a normal breath **Rescue breaths for an infant (under 1 years):** • Ensure a neutral position of the head (as an infant's head is usually flexed when supine, this may require some extension) and apply chin lift • Administer rescue breaths mouth to mouth using Pocket mask/Face shield by covering the mouth and nasal apertures of the infant with your mouth, making sure you have a good seal. If the nose and mouth cannot both be covered in the older infant, the rescuer may attempt to seal only the infant's nose or mouth with his mouth (if the nose is used, close the lips to prevent air escape) • You may use a BVM, if you have been **appropriately trained to do so and the correct size is available.**

		• Administer rescue breaths steadily into the infant's mouth and nose over 1 second sufficient to make the chest rise visibly. • Maintain head position and chin lift, and watch for the chest to fall as air comes out. • Repeat this sequence four more times. For both infants and children, if you have difficulty achieving an effective breath, the airway may be obstructed: • Open the child's mouth and remove any visible obstruction. **Do not** perform a blind finger sweep. • Ensure that there is adequate head tilt and chin lift but also that the neck is not over extended. • If head tilt and chin lift has not opened the airway, try the jaw thrust method. • Make up to 5 attempts to achieve effective breaths. If still unsuccessful, move on to chest compression. **Important note: Cases involving COVID-19** do not assess for breathing by placing your ear and cheek close to the patient/client's mouth. If you are in any doubt about confirming cardiac arrest the default position is to start chest compressions until help arrives.
6	Assess the child's circulation. (signs of life) Take no more than 10 seconds to look for signs of life.	Look for signs of life. These include any movement, coughing, or normal breathing (not abnormal gasps or infrequent, irregular breaths). If you check the pulse **take no more than 10 seconds**: • In a child aged over 1 year – feel for the carotid pulse in the neck, if competent • In an infant – feel for the brachial pulse on the inner aspect of the upper arm, if competent • For both infants and children, the femoral pulse in the groin (mid-way between the anterior superior iliac spine and the symphysis pubis) can also be used, if competent
7A	If you are confident that you can detect signs of a circulation within 10 seconds.	• Continue rescue breathing, if necessary, until the child starts breathing effectively on his own. • Turn the child on to their side (into the recovery position) if he starts breathing effectively but remains unconscious. • Re-assess the child frequently.
7B	If there are no signs of life, unless you are CERTAIN that you can feel a definite pulse of greater than 60 beats per minute within 10 seconds.	• Start chest compressions. • Combine rescue breathing and chest compressions. • **For all children, compress the lower half of the sternum:** ○ To avoid compressing the upper abdomen, locate the xiphisternum by finding the angle where the lowest ribs join in the middle. Compress the sternum one finger's breadth above this. • Compression should be sufficient to depress the sternum by at least one third of the depth of the chest, which is approximately 4cm for an infant and 5cm for a child • Don't be afraid to push too hard. Push 'hard and fast'. Release the pressure completely, then repeat at a rate of 100 - 120 per minute.

- After 15 compressions, tilt the head, lift the chin, and give two effective breaths.
- Continue compressions and breaths in a ratio of 15:2 for a single trained worker and 30:2 for a lay person on their own.

The best method for compression varies slightly between infants and children.

Chest compression in infants:

- The lone worker should compress the sternum with the tips of two fingers.
- If there are two or more workers, use the encircling technique:
  - Place both thumbs flat, side by side, on the lower half of the sternum (as above), with the tips pointing towards the infant's head.
  - Spread the rest of both hands, with the fingers together, to encircle the lower part of the infant's rib cage with the tips of the fingers supporting the infant's back.
  - Press down on the lower sternum with your two thumbs to depress it at least one-third of the depth of the infant's chest, approximately 4cm.
  - If after 1 minute you need to take the child to get help. Place your arm between the child's legs and up the back so that you hand is supporting their head, you can continue with two finger chest compressions, and lift the child to your mouth for the ventilations.

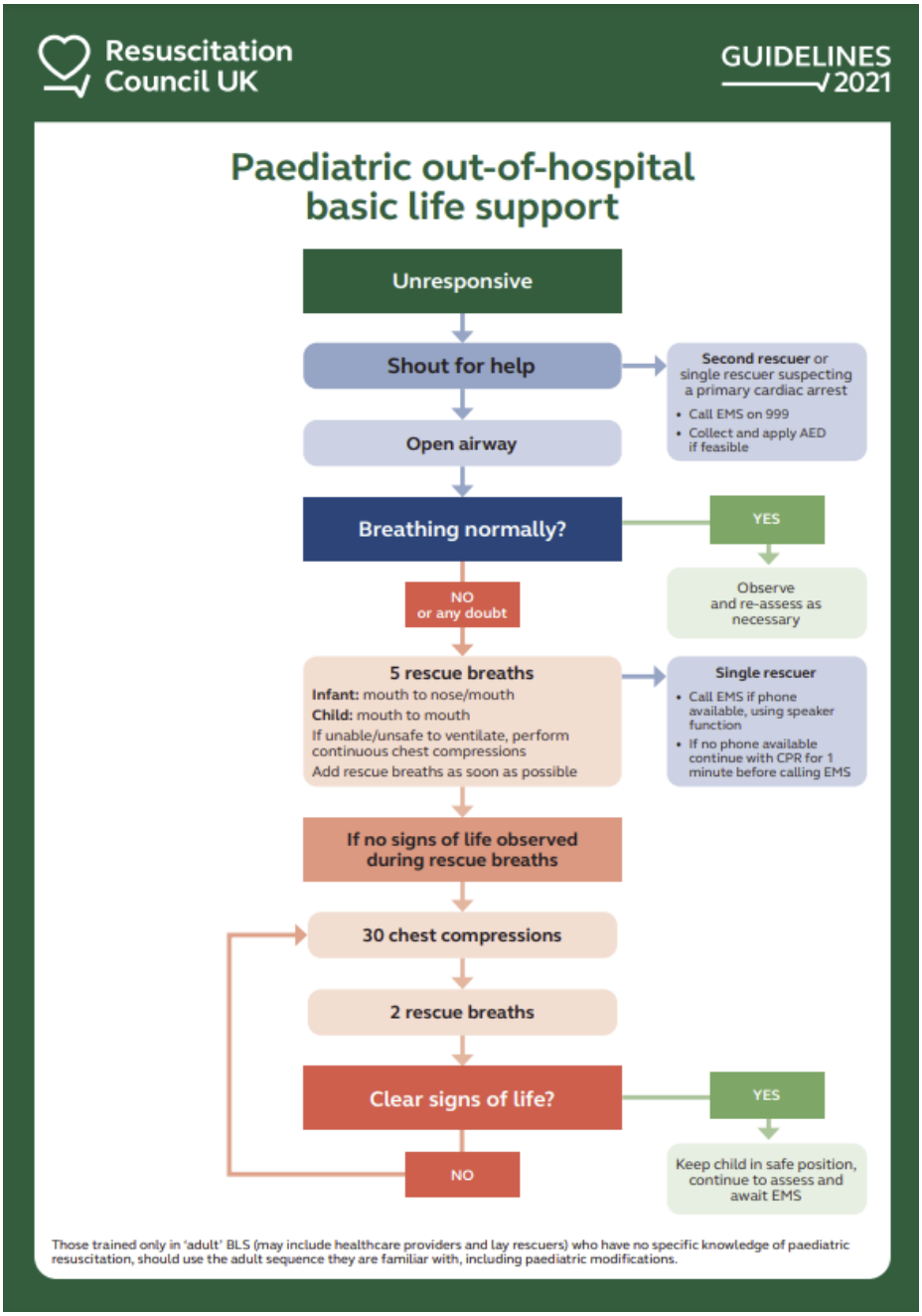
Chest compression in children aged over 1 year:

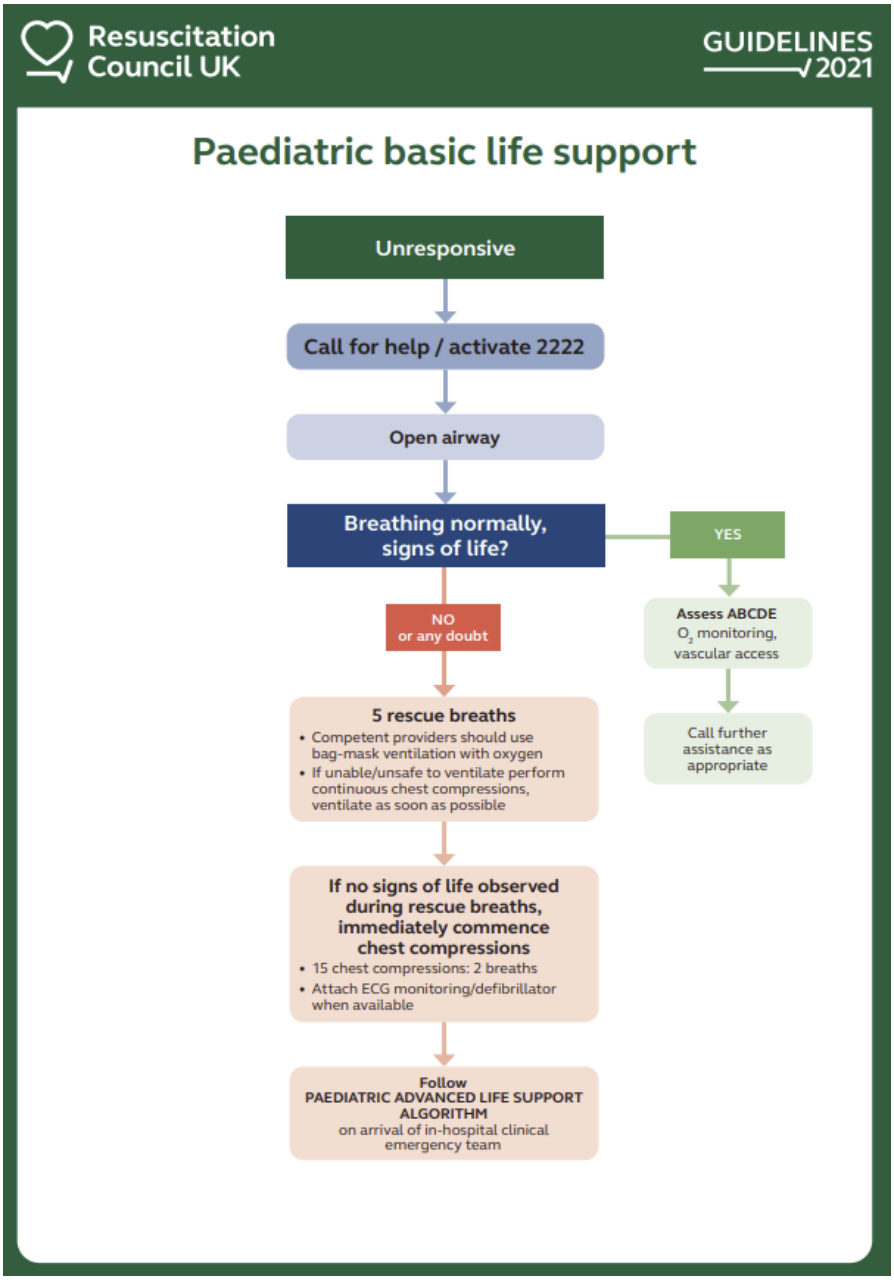
- Place the heel of one hand over the lower half of the sternum (as picture below).
- Lift the fingers to ensure that pressure is not applied over the child's ribs.
- Position yourself vertically above the child's chest and, with your arm straight, compress the sternum to depress it by at least one-third of the depth of the chest, approximately 5cm

- In larger children, or rescuers with small hands, this may be achieved most easily by using both hands with the fingers interlocked.

		
8	Continue resuscitation until.	• The child shows signs of life (normal breathing, cough, movement or definite pulse of greater than 60 beats per minute). • Further qualified help arrives. • You become exhausted.

Paediatric Basic Life Support Flow Chart





3. Associated Policies / SOPs

Policies
CLIN 19 Resuscitation Policy

SOPs
SOP RESUS 03 Recovery Position
SOP RESUS 05 Paediatric Choking
SOP RESUS 06 AED

4. References

- **Resuscitation Council** Guidelines Paediatric basic life support 2021 https://www.resus.org.uk/library/2021-resuscitation-guidelines/paediatric-basic-life-support-guidelines

Appendix A: About Acacium Group

Acacium Group consists of a number of trading companies, each providing services within core niche areas of the health and social care industries. Therefore, as this document is a Group Policy, the Policy herein applies to all trading companies detailed below:

GP World Part of Acacium Group	pulse Part of Acacium Group	Proclinical Part of Acacium Group
Bank partners	espirita	INGAGE multistaffing | one solution
Liquid Healthcare Part of Acacium Group	Thornbury Nursing Services Part of Acacium Group	Scottish Nursing Guild Part of Acacium Group
Thornbury Community Services Part of Acacium Group	Hobson Prior Part of Acacium Group	maxxima Part of Acacium Group
xyla Part of Acacium Group	Ellea Nursing Part of Acacium Group	CHS Healthcare Part of Acacium Group
DUNN REGULATORY ASSOCIATES Part of Acacium Group		